# K—Cybernetics—DML

## Notes

### 101

It seems appropriate to begin with Google’s definition of “cybernetics,” which is “the science of communications and automatic control systems in both machines and living things.” This critique is concerned with the ways in which modern and emerging technologies are altering the structural nature of “communications” (both the media we use to communicate, like cellphones, social media, etc, and the ways that we communicate with each other in terms of empathy, aggression, etc) and “automatic control systems” (the systems and infrastructures that the world relies on to communicate, both the physical components such as power cables or satellites and the virtual components such as algorithmic decisionmaking systems or metadata sets). Specifically, this is a criticism of the affirmative’s **epistemology**, or the way in which it comes to know the world, and the sources, data, and ideological influences that their thought and research draw upon. The core argument is that scholarship which calls for security cooperation with NATO states relies on outdated ideas about the effectiveness and utility of traditional mechanisms of international law, and that these outdated ideas offer useless (if not actively harmful) responses to the crises created by the ongoing cybernetic transformation of the world. Consider the core paradox of autonomous weapons regulation: if the weapons are effectively regulated, then they aren’t truly autonomous, but as soon as they autonomous, we can’t regulate them without potentially compromising their effectiveness. By and large, the only way for international security organizations like NATO to keep up with the growing amount of security threates created by emerging technology is for those organizations to *automate* their functions, including the process of decisionmaking itself, using other new digital technologies. Thus, according to the link, the affirmative (and not just its scholarship—the action of the plan itself!) justifies the subtle spread, normalization, and acceptance of digital technologies which make it easier to monitor the population and extract data from them. That process is unsustainable, violent, conducive to fascism, and results in extinction.

The alternative to the continued datafication of the world is to focus on cultivating embodied, corporeal relationships. This should be understood somewhat, but not completely, literally; while the alt authors would certainly advocate more in-person connections and relationships, “corporeal care” is also something of a metaphor for the innumerable, ineffable relationships which make up human sociality and which lose something of their essence when translated into data. How many 30-part Instagram stories from concerts that your friends went to have you watched all the way through and actually enjoyed, let alone gotten anything close to the experience of actually being there? Even the person taking the video doesn’t get the same experience from rewatching it as they did from actually producing that moment of human connection and entertainment, but it’s the next best thing to being able to actually reproduce it. The point is that these moments of connection, collective experience, and relationality are metaphorically corporeal in the sense that they don’t last forever, but they do last materially—the opposite of data—and paying attention to those moments and focusing on generating more of them is a better way of combatting the expanding cybernetic regime than outdated legal instruments.

Part of the alt also involves “rearticulating cybernetic thought.” I used the term “rearticulating” in the tag because it’s in the card; for the purposes of explanation, it’s roughly synonymous to “redirecting” or “reorienting.” I point this out not only to help resolve potential confusion, but also to highlight an important theme in the literature, which is that this is **not** a universal critique of technology, but a critique of the ways in which certain technologies have come to structure society. The point of the alt (and a reason that framework is a **very important part** of this K) is not that we can never text anyone (or record terrible 30-part concert Instagram stories), but that, when making decisions that may impact what people choose to research in the future (namely, how the judge decides which side did the better or worse debating), we should try to discourage research that promotes cybernetic models of thought, especially in military and security policy contexts. Some technologies can even help with doing that; for example, think about how Tabroom.com makes submitting ballots and entering easily accessible feedback much simpler for judges while also making it easier for debaters or their coaches to follow up with them (if they desire), creating constructive two-way flows of information, or about how opensourcing evidence or recording more rounds makes it easier for more people to access the critique’s arguments. Because power in the cybernetic era is about analyzing the patterns across huge sets of data and acting on them, this critique argues that we should focus less on how big of an influence any individual debate round has on the cybernetic episteme and more on proliferating disruptions to the overall pattern of the cybernetic takeover of debate (or at least on proliferating new patterns that make it easier to create those disruptions).

### How To Read This File

The three biggest pieces of advice I can give when reading this file:

1. **It’s usually simpler than it seems**. The only thing these authors love more than big words is swapping them around for other big words interchangeably, but the arguments themselves are deceptively straightforward.
2. **When it seems simple, don’t second guess yourself.** You’re more likely to be getting it than you are to be missing something.
3. **Don’t explain the arguments with the literature’s language, explain the literature with your language and arguments.** It’s okay if you don’t know the precise meanings of the terms and phrases in your cards, or the exact ways to use them, as long as you feel confident that you grasp the meaning internally.

“Cybernetics” as an umbrella term encompasses a variety of different fields of scholarship that overlap to varying degrees and that may not actively refer to themselves using the term, and one consequence of this that might make this K a bit intimidating is that the literature can tend to use a lot of different (and complicated) terms to describe similar things, or assume you’re familiar with a variety of other background literature bases that you might not otherwise be. To make it simpler, I’ve included a few blocks and analytics throughout the file (but not very many—you should write, and rewrite, your own blocks!). While I also highly encourage reading background literature and primary sources as much as you possibly can, if that’s not possible for you or if some of the super deep-cut Deleuze and Guattari-esque stuff is a bit too much of a challenge, don’t sweat it—just keep reading through the file, and even if it takes some time and a few rereads or practice speeches, you’ll start to learn which terms and phrases mean similar things (and which ones don’t). A lot of these cards seem like they are making much more complicated arguments than they are simply because they use different (and often unnecessarily complex) terminologies than what you’re used to, but if you make a sustained effort to understand and think them through, things will start to click soon enough. There’s nothing wrong with Googling definitions or reading Wikipedia articles to get some background context, we all do it.

Related to the last point, when researching this K and picking and choosing evidence, I tried to focus more on argumentative cohesiveness than a totally uniform terminology. While some cards might make the arguments using different terms, I think it’s largely argumentatively consistent. Similarly, when constructing the 1NC, I tried to prioritize cards that explained their arguments soundly and coherently, even if they didn’t use the same language as the other 1NC cards. **Emmelhainz 21** in particular is (in my opinion) a very straightforward explanation of most of the arguments and core ideas found throughout the file, and even though I left it highlighted because it’s quite long and wordy, I would encourage reading through the entire un-underlined text (it’s nearly the entire article) and/or rehighlighting (or reunderlining!) it yourself. I will include its definition of “episteme” here, just because it’s a term used throughout the file that some may be unfamiliar with:

“According to its Greek etymology, an “episteme” is a system of understanding. In The Order of Things, Michel Foucault uses the term “épistemè” to mean the nontemporal or a priori knowledge that grounds what is taken as truth in a given moment. Several epistemes coexist at a given time, as they constitute parts of various systems of power and knowledge. The cybernetic episteme, as defined by the collective Tiqqun some twenty years ago, describes our relationship to technology and machines (which are inseparable from the workings of capitalism). The cybernetic episteme is based on the modern tenet of progress and human-led transcendence achieved through science and technology.”

One thing along those lines that I think is important to emphasize: **This is an epistemology K!** While many popular kritiks are premised on arguments about ontology and ontological structures, and other variants of cybernetics literature make ontological arguments (as well as arguments using other theoretical frames), this K is about **epistemological, not ontological, structures**. The difference is that ontology refers to the way humans *are* essentially, in our essence or spirit, whereas epistemology refers to the way humans *think* and *know*. Ontology is a metaphysical question relating to structures that shape us before we are born or exist; epistemology is a social question relating to structures of thought and value that humans create and influence (and that may take on lives of their own to influence humans back). You should debate this differently than you would debate kritiks about ontology!

The titles of some of the impacts might seem a bit high-concept or meme-y, but try to look past that, because I think they all more or less do a pretty good job of explaining the concepts in a straightforward manner. Except “Exchange Abstraction.” I don’t really know what to say about that one.

Lastly, I really encourage you to make this file your own. Like I said, there are a lot of different phrases and ideas across these cards, and my organizational system/header naming choices are by no means perfect, so if you are having trouble working with this file as is, consider reorganizing it in ways that you’re more comfortable with. If you think that some cards work better in the 1NC or in particular blocks than others, or you want to rewrite some tags or recut some cards, then you’re absolutely right, because that’s what works for you.

## Topshelf

### Kritik—1NC

#### Security cooperation over emerging technology expands and obscures cybernetic models of thought. The plan leaves the thinking that engenders regulatory problems untouched.

Noll, 19—professor of international law at the Department of Law, School of Business, Economics and Law, Gothenburg University (Gregor, “War by Algorithm: The End of Law?,” *War and Algorithm*, Chapter 4, 78-81, dml)

This guidance is analogous to the guidance of human behavior by the law. The law informs me about the consequences of my actions: when I read the law, I understand that I will be locked away in a prison if I intentionally take the life of another person. But the law also informs the consequences of my actions: the law and its institutions ensure that I am locked away once I have committed a murder. This, in turn, makes the law inform my conduct by dissuading me from committing murder through the prospect of legal penalties. The intransitive usage of “to inform” is linked to the transitive one: over and above its enabling capacity, the law also has agentic capacities. Law and technology come together in this double capacity, Hildebrandt suggests.11 Any use of technology is normative, as is any use of the law. Technically and legally guided cognition are both enabling and agentic.

Earlier, I pointed out a deceptive binary at work in the debate on LAWS: either heteronomy or autonomy, either inside or outside the law, either a human or a machine subject. Here is a third option: the subject is a situation-specific constellation of human and machine. If we accept, for the time being, that it is the intertwining of enabling and constraining capabilities that characterizes both law and technology, we seem to have a larger research program, of which this chapter forms part: to map in detail how the way in which a human, a machine, and a piece of law are brought together with the world produces normative consequences.

Let me introduce four technologies that help us to understand the way normativity is at work in the emergent form of war:

Robotics is about the combination of mechanical constructions, power sources, and algorithmic code in a machine that replaces humans. Current military applications include small tracked robots accompanying infantry or special forces, unmanned aerial vehicles for attack purposes, and unmanned naval vessels engaging enemy submarines. Future applications might include humanoid robots that act as soldiers. The emphasis in robotics is on a mechanical body that replaces the human body. Algorithmic code forms part of robotics but is not necessarily the key feature. The development of humanoid soldiers, for example, is still hampered by limited power supply.

In military contexts, artificial intelligence has a very wide range of uses. AI is a field in computer science that focuses on tasks that are easy for humans and hard for computers. AI assists in, inter alia, planning campaigns, making sense of intelligence, or finding and engaging targets. Examples stretch from the DART system for logistics planning, which has been in use since Operation Desert Storm in 1991, to the identification of enemies and non-supportive populations in Operation Enduring Freedom in Afghanistan (2001–2014). AI also enabled the development of advanced simulation systems for military training and systems capable of visual recognition. One way of describing AI is that it revolves around the mental states of artificial neural networks. These networks take their cue from understandings of how the human brain’s neural networks function. The focus in AI is on replacing human cognition, or parts of it, with enhanced machine cognition.

In military contexts, neurotechnology might enhance and speed up the targeting process by combining unconscious human cognition with the processing power of computers. Experimental applications comprise, inter alia, threat detection and targeting systems, but also applications to assist veterans in recovering from PTSD. The idea is to combine algorithmic machines and human cognition in a way that leverages the advantages of each. In concrete terms, artificial neural networks and the neuronal signals of the human brain are pooled.

Recent developments in genomics have spawned a discussion of its potential military uses. One possibility that is within reach is the selection of soldiers based on their genetic characteristics. This process opens up new ways of reading the human and her capabilities. A more distant possibility is the genomic enhancement of soldiers. That process is analogous to programming an algorithm inside a human or, metaphorically, writing her. The human genome is altered as a programmer would alter software to better achieve a particular end.

What do these forms of technologically driven warfare have in common? It is the amalgamation of machine properties with human properties in an open architecture in which none of them can be isolated from any other.12 In robotics, we encounter a move out of the human flesh into machine bodies. From a human perspective, robotics is excarnation. (I will come back to what this might mean in the section “Why Do Code and Law Rule in Such Different Ways?”) Similarly, AI is a move out of the human flesh and the human’s embodied mental states into artificial mental states created by computers. From a human perspective, AI is also excarnation, if we understand the mental states thus outsourced to be attributes of our corporeal existence. Conversely, genomics is all about incarnation: it transfers the artifice of coding into the human flesh. Neurotechnology is the hard case: because it assembles artificial mental states and human neuronal signals, it wavers between excarnation and incarnation. If we are interested in regulation, this case is the most sensitive one—and the most productive to think about. This is all the more so as the United States, a dominant actor in the development of advanced weaponry, has emphasized man–machine collaboration in its use of military AI technologies,13 and Elon Musk has thrown his political and economic weight behind the development of “ultra high bandwidth brain-machine interfaces to connect humans and computers.”14

This bleeding of machine and human into each other is not that much of a surprise, though, if we consider that all four technologies are the products of cybernetic thinking. Cybernetics embraces the entire field of control and communication theory and makes no distinction between machine or animal.15 Using the concepts of feedback and self-regulation, “cyberneticists claimed to be able to build the living agency of an organic being into artificial machinery.”16 Think of robotics and AI, and you are thinking of a discipline in which machines are acquiring human-like autonomy. Think of genomics, and you are thinking of a discipline in which humans are acquiring a machine-like adaptability to extreme circumstances. Think of neurotechnology, and you are thinking of an area in which machines are acquiring the human property of speedy recognition—or where humans are acquiring the machine property of speedy electric-signal processing. By contrast, it is much easier for noncybernetic common sense to separate the gunsight from the soldier, the book from its reader, and the pair of glasses from its wearer.

Here, we experience the normative repercussions of a model of thinking. If we opt for cybernetics, we opt for a mode of thought that makes no distinction between humans and machines. What scares us about LAWS must then be assumed to be what scares us about man. And we find that the technology developed on the basis of cybernetic assumptions actually fuses humans and machines in a way that engenders regulatory problems. We try to solve these problems by limiting the development of technology (e.g., by arguing for a ban on “autonomous” weapons), but the thinking that shapes them is left untouched. If a legal ban (or the absence of one) is normative, then cybernetics is a form of second-order normativity. Cybernetics is about “control” as such and therewith also about controlling control. It is about regulation and therewith also about the regulation of regulation. It is a regulatory thinking at a more foundational level than an ordinary international agreement banning a particular type of weapon. The question of “autonomous” AI applications is always already part and parcel of the question of cybernetics. The second-order character of this thinking means it slips from our sight, even as it holds us captive (see Figure 4.1).

#### The cybernetic episteme threatens extinction, generates racist fascism, and unravels the foundation of ethics itself.

Emmelhainz, 21—independent researcher and writer who has lectured and taught at an array of international institutions (Irmgard, “Authoritarianism and the Cybernetic Episteme, or the Progressive Disappearance of Everything on Earth,” e-flux #122, November 2021, dml) [section 4 was not omitted, the article just skips from 3 to 5]

Life and society worldwide have been transformed by digital technology, including the fabrics of emotional relationships. Many believed the internet would be the largest ungoverned space in the world with unlimited emancipatory potential, and trusted Big Tech to make the world a better place. Yet power and capitalism filled that space with surveillance systems, the production of private capital, the monetization of data, and the control of human lives. Social media now shape daily life and many have lost faith in the possibility of a shared consensus reality. We are living in a scenario similar to one imagined by Black Mirror: our belief in digital communication and social media creates narcissistic personalities, selves dissociated and dislocated from their reflections online. Digital communication offers an opaque mirror that delivers egos without bodies, eliding alterity.

The collapse of reality, however, is not an unintended consequence of advancements in, for instance, artificial intelligence: it was the long-term objective of many technologists, who sought to create machines capable of transforming human consciousness (like drugs do). Communication has become a site for the extraction of surplus value, and images operate as both commodities and dispositives for this extraction. Moreover, data mediates our cognition, that is to say, the way in which we exist and perceive the world and others. The image—and the unlimited communication promised by constant imagery—have ceased to have emancipatory potential. Images place a veil over a world in which the isolated living dead, thirsty for stimulation and dopamine, give and collect likes on social media. Platform users exist according to the Silicon Valley utopian ideal of life’s complete virtualization.

The internet, moreover, has radically changed the political communications game and must be considered a complex propaganda apparatus. Although a single Tweet can destroy someone’s career, and fake news can start a real news cycle, meaning is subordinate to the circulation of vacuous content. The capitalist capture of data for profit does not rely on policing content; the production of capital only relies on the constant exchange and circulation of information. We don’t yet know the full extent of the manipulation of companies such as Facebook, Google, and Amazon in the last two elections in the US or in other elections around the world. But it is undeniable that digital platforms are actively censoring content in the interests of particular political actors. For instance: in October 2020, Zoom canceled a meeting hosting Palestinian human rights activist Leila Khaled; a month before, Facebook and Twitter censored information detrimental to Joseph Biden’s presidential campaign. The same two companies intervened and shut down pro-Trump accounts in 2020, even Donald Trump’s own Facebook and Twitter accounts.

After the attempted coup at the US capitol on January 6, 2020, Facebook’s recently instituted oversight board ruled that Trump had created “an environment where a serious risk of violence was possible.” In this light, it seems likely that he will continue to be banned from the platform. According to journalist Shoshana Zuboff, however, this is insufficient, given that the oversight board’s decision (whose work is supported by a $130 million endowment from Facebook) follows years of inaction by CEO Mark Zuckerberg, who indulged and appeased Trump while entrenching what Zuboff calls “surveillance capitalism.” A liberal might think that shutting up Trump and helping Biden is not bad, as they are actions that seemingly advance the interests of the Democratic Party. What is at stake here, however, is not whether the platforms take a “good” or “bad” stance on a particular issue; the problem is that they have immense unchecked power and can act as they please. Platforms are allowed to secretly extract behavioral data from users, whether or not users are aware, transforming the information into targeted ads, destroying privacy, changing human experience into data, altering elections, and reshaping human civilization. This structure can be termed the “cybernetic episteme,” and the new form of control, which goes beyond the previous regime of biopower, can be termed “neuropower.”

According to its Greek etymology, an “episteme” is a system of understanding. In The Order of Things, Michel Foucault uses the term “épistemè” to mean the nontemporal or a priori knowledge that grounds what is taken as truth in a given moment. Several epistemes coexist at a given time, as they constitute parts of various systems of power and knowledge. The cybernetic episteme, as defined by the collective Tiqqun some twenty years ago, describes our relationship to technology and machines (which are inseparable from the workings of capitalism). The cybernetic episteme is based on the modern tenet of progress and human-led transcendence achieved through science and technology.

Under neuropower, the sensible gives way to cognitive pathologies. These pathologies depend on the consumption of content rather than the sharing of meaning. As Thomas Metzinger explains, the internet has become an integral part of how we model ourselves, as we use it for external memory storage, as a cognitive prosthesis, and for emotional self-regulation. This has radically changed the structure of conscious experience, creating a new form of waking consciousness that resembles “a mixture of dreaming, dementia, intoxication, and infantilization.” Other effects of neuropower are humans’ growing invisibility to each other and a paroxysmal racism that infiltrates power, technology, culture, language, and work. For Franco “Bifo” Berardi, racism has become a “virus” that exacerbates fear—above all, the fear of extinction, which seems to have become one of the motors behind white supremacy in the world. Dissociated from our environment, alienated from each other, we are oblivious to the challenges that are being posed to humanity by the Capitalocene.

A complex form of authoritarianism is emerging, linked to digital platforms owned by the powerful CEOs who make up the notorious “Silicon Six.” Under the new authoritarianism, populations are no longer commanded: they are asked to participate, and in this simulation of involvement, the “ideology of connection” replaces the idea of social relations, neutralizing democratic demands from users to have control over their own lives, rights, and data. In this way, people are made passive. Cédric Durand explains the difference between the original conception of the World Wide Web and the subsequent development of closed platforms. The WWW began as a decentralized architecture in which a generic transaction protocol (http) and a uniform identification format (URI/URL) generated a space of flat content. In this space, human and nonhuman agents could have access to information without any third-party mediation. In contrast, closed platforms use application programming interfaces, or APIs, to mediate interaction, giving way to data loops in which interactions are more dense. The technical object that sustains this hierarchical architecture is the API, each of which is owned by a platform. On the one hand, big platforms, by way of APIs, offer apps that incorporate basic and indispensable data for users. On the other, platforms have access to the additional information generated by the API, such as user activity and buying habits. As the ecosystem grows in complexity, the platform is able to accumulate more and more data. We become more densely connected with each other and with the platforms every day, as our lives get more and more tied to the cloud. Our dependency on platforms provides the ground for technofeudalism. Historically, feudalism was characterized by a fundamental inequality that enabled the direct exploitation of peasants by lords. The lord was both the manager and master not only of the process of production, but of the entire process of social life. In today’s technofeudalism, platform owners are the digital lords and users are the serfs. Rather than commodity production, these platforms are geared towards accumulation through rent, debt, and the privatization of the basic infrastructure that sustains our lives. What is at stake is no longer “true” or “fake” information but the cybernetic episteme upon which our lives and subjectivities have been built.

The cybernetic episteme is premised upon modernity’s enclosure of experience. In modern epistemology, which is the precondition of the cybernetic episteme, the self is externalized and experienced at a remove from the body. Perception is centered on the brain and eyes instead of the whole body, separating sensation from reason. The self’s relationship with the world is mediated through mirrors, camera lenses, the canvas, the microscope, and mathematical models. The cybernetic episteme, moreover, is inextricable from colonialism, which entails dispossession, dislocation, dissociation, and appropriation. Ariella Azoulay has called the logic underpinning these processes “the shutter”; this logic is materialized in photographic technology that separates humans from objects, self from the world, and people from their lands. The shutter is the principle of imperialism by which campaigns of plunder have left people both worldless and objectless. For Azoulay, the logic of the shutter was invented centuries before photography gave it a technological apparatus, and it enabled the dispossession of non-Western peoples in tandem with the accumulation of visual and material wealth in archives and museums in the West.

The cybernetic episteme is likewise conceptually constituted by this shutter, since it relies on capturing, naming, moving, and archiving subjects—as does imperialism. In this regard, the cybernetic episteme naturalizes the mediation of the self; it creates not only the condition of detachment from the world, but allows the appropriation of the cultures of others, as well as the dissolution of collective being. The shutter is akin to Heidegger’s Gestell or “representation,” which goes hand in hand with Eurocentrism and Anthropocentrism. The Gestell and the shutter both imply that the world and experience have become representation, through an aesthetic order in which what is produced as artifice becomes the reality of experience.

In a 2017 Facebook promo video for a new virtual reality technology, Mark Zuckerberg and his colleague Rachel Frank tele-transported themselves to Puerto Rico after a devastating flood. They intended to showcase the potential of the new technology, but instead revealed its inherent violence. The ability to transport oneself to faraway places “as if” one’s body were present gives the illusion that one we can make a difference in the world through technology. Another example, in a different register of colonial modernity is that way Western museums allow visitors to "transport" themselves by observing objects looted from elsewhere, like the Pergamon Museum in Berlin where museumgoers can roam around the Ishtar Gate, which has been on display in the museum since 1930. In a section of Ariella Azoulay’s video Undocumented: Unlearning Imperial Plunder (2020), she films actual visitors to the Pergamon while noting that dislocation is the essence of (imperial) modernity. The VR museum visitor is at the center of a world, but they are not really there (an effect similar to the dispositive of perspective in painting). For globalized Western culture, the ground for vision, enlightenment, culture, and even social change is the dislocation and disappearance of bodies.

Disembodiment and dislocation are also fundamental epistemological premises of transhumanist Silicon Valley ideology. In this ideology, the teleology of secular modern individualism culminates in the uploading of a person’s mind to a new biological, artificial, or biological-artificial body. The utopian goal of expanding and preserving human consciousness is physically and spiritually achieved. Transhumanism is the dream of enhancing the human body through technology, and ultimately escaping human suffering by transcending the “errors” of death and aging.

Posthumanism takes things a step further: its goal is to immortalize consciousness by uploading it to a robotic or synthetic body. Posthumanism does away with the biological dimension of the self, fundamentally altering what it means to be “human.” In both trans- and posthumanism, technology promises to give us the divine attributes of omnipresence, omnipotence, and omniscience, making humans into “pure consciousness,” achieving a kind of individual and secular transcendence. In the first episode of the British TV series Years and Years (2019), Bethany, an adolescent whose face is hidden behind a 3D emoji mask, announces to her parents that she is “transhuman.” She declares: “I don’t want to be flesh. I want to escape this thing and become digital, I want to live forever as information.” Eventually Bethany becomes a hero with transhuman superpowers: her mechanized eyes and brain, which are connected to all the data in the world, allow her to make visible the horrors that the British government have perpetrated in a refugee camp. This techno-utopian narrative implies a democratic ideology, insofar as one political goal of democracy is to make visible the ordeals of oppressed minorities—in this case through virtual disembodiment.

In contrast to this techno-utopian narrative, science fiction—especially cyberpunk literature— generally portrays transhumanism as a nightmarish apocalyptic scenario of social control and individual subjection. Several episodes of Black Mirror do this, for example. But what Black Mirror and Years and Years have in common is that technological advances and the increasing symbiosis between humans and machines are associated with political, economic, and social instability. In reality, “mind uploading” has attracted millions of dollars of investment from the billionaires of Silicon Valley and beyond. In a mixture of engineering and enlightenment, consciousness is now being hacked through biofeedback techniques, meditation practices, and microdosing drugs. Many critics have observed that the utopian ideology of transhumanism underpins the Valley’s culture of “move fast, break things, and make as much money as possible.” Technologies aiming to expand human consciousness are rooted in purely extractivist, capitalist values. In this sense, cybernetics is a political project on a planetary scale. As described by Tiqqun, cybernetics is a gigantic “abstract machine” made up of binary machines deployed by empire, and a form of political sovereignty that has merged with the capitalist extractivist project.

2.

In the pre-cybernetic era—that is to say, before the 1940s—machines were intended to emulate humans; their actions resembled human behavior, but ostensibly without intent or emotions. This is why Donna Haraway describes pre-cybernetic machines as “haunted.” They seemed animated by ghosts, reminiscent of Walter Benjamin’s automaton that was inhabited by a hunchbacked dwarf. Machines were not self-moving, self-designing, or autonomous. They could not achieve human dreams, only mock them. In turn, humans related to machines by using or acting upon them: switching them on or off, using them as tools to achieve an end. Today, the relationship between human and machine is based on internal, mutual communication in a feedback loop. Early machines were led; today, machines lead us. This does not mean that machines have simply become humanized through the proliferation of androids. Rather, humans have surrendered consciousness to AI, becoming obedient and predictable. In the twenty-first century, machines have blurred the distinction between the artificial and human mind, not only because machines can imitate human functions, but because humans have become increasingly passive, since we are now subject to neuropower.

Within the cybernetic episteme, it is no longer enough to talk about a “control society”; we must talk instead about a composite of interlinked forms of oppression (exploitation, alienation, and domination), in tandem with extreme securitarianism. Another way to see the cybernetic episteme is as the reconceptualization of social worlds into information-processing systems. Practices of computation are used to produce new organizational and infrastructural apparatuses, which in turn create value and profit by exploiting and disposing of human life. Social worlds are subsumed into technologies through techniques such as statistical forecasting and data modeling.

The cybernetic episteme stems from a world brought into being by Europeans; this world began with the discovery of the “new world” and the creation of empires and colonies (which coincided with the scientific revolution). In this sense, the cybernetic episteme is inseparable from the Western civilizing project for the whole world, which connected disparate places through technologies like the telegraph and steam shipping, often powered by the extraction of fossil fuels like coal. This project has culminated in globalization as the deregulation and financialization of world economies.

The Western civilization project, based on Enlightenment values including equality, peaceful public life, access to modern science, the rule of law, democracy, and technological progress, involved the creation of infrastructure to unify nations and the world. We can call this infrastructure the “technosphere.” The technosphere comprises not only digital technology but all machines, factories, computers, cars, buildings, railways, and mobility infrastructure, as well as systems of food production, resource extraction, and energy distribution. Today, the infrastructure of the world—the technosphere—is shaped by information, which means that the world we inhabit is designed by data.

The technosphere is a supplement humans have created to help overcome the limits of “human nature” insofar as humans cannot live independently from structures geared towards sustaining life. The technosphere has promised to enable us to increase production and reproduction with less human effort. Moreover, the technosphere is also regarded as the main tool humans have to fight decay, entropy, and death, since it comprises all the structures humans have built to keep themselves alive on the planet. The total mass of the technosphere amounts to fifty kilos for every square meter of earth’s surface—a total of thirty trillion tons, which coexists with the diminishing hydrosphere (water, the frozen polar regions) and the biosphere (all of earth’s living organisms). The ultimate price of the technosphere is global warming and environmental devastation. Like humans, the technosphere needs external energy input, which is not sustainable as long as it comes from fossil fuels that will eventually be depleted.

From this standpoint, the cybernetic episteme represents the gradual merging of human activity into the activity of what we have built and surrounded ourselves with. Much of this built environment is invisible. Infrastructure and data are partially occult because we are alienated from them, even as we are produced and managed by them. The invisible infrastructure that sustains our lives is what matters politically right now. And insofar as the technosphere is cybernetic, it is inextricable from capitalism and politics.

3.

Human communication is at the center of the cybernetic global order. The neural system of globalized networked society is digital communication. In a 1975 film called Comment ça va?, Anne-Marie Miéville and Jean-Luc Godard discuss the “illness” of information. They begin with an image of the Carnation Revolution in Portugal, published in the leftist newspaper Libération. At the time, photojournalistic images had begun to proliferate as a form of information, and Godard and Miéville critique Libération (the most left-wing newspaper in Europe in those days) for failing to include the reader in the creation and dissemination of information. They ask: “How is it that things enter and exit the machine?” (Comment ça va de l’entrée à la sortie de la machine?). This question is about how ideas, words, discourses, human interaction, and images become information and then reach readers and viewers.

In Comment ça va?, mass media represents an illness that has killed communication and language. Last year, Godard updated his critique of the media in an interview posted to Instagram. He stated: “Plato’s cave has been fixed on paper/screen.” For Godard, the consequence of the becoming-information of communication and language is the loss of ambiguity in communication. Digital technology has infiltrated every aspect of existence, and the margin of error between the transmission and the reception of a message has been eliminated by mediatization and digitization. For Godard, digital communication denies the force of the image or the word because it eliminates redundancy, misunderstanding, the possibility of reading between the lines, and the possibility of alterity.

In a more recent film of his—Adieu au language from 2014—Godard suggests that digital media have destroyed face-to-face communication. He asks: What kind of self could emerge in a time when objects and bodies are disfigurable and refigurable through virtual manipulation? Godard posits that the origins of today’s totalitarianism can be traced to the interruption of interior experience by the spectacle. In the film, Godard features a lengthy quote from Philippe Sollers explaining that the spectacle “cuts off” the subject from its interior life—a process that is, paradoxically, highly seductive. Furthermore, for Godard digital communication creates a new form of isolated solitude where people lack ties to others. In this light, technology has not become an extension of man, as Marshall McLuhan predicted, but has instead attained autonomy from man, since digital media can communicate amongst themselves without human mediation. For Godard, this means that the “face-to-face” encounter—a basic form of human relation that is the foundation of ethics—is no longer possible.

Sherry Turkle, a clinical psychologist and sociologist, comes to similar conclusions: daily conversations no longer involve eye contact, and face-to-face discussion has been replaced by words on a screen. According to Turkle, texts, tweets, Facebook posts, Instagram messages, and Snapchats split our attention and diminish our capacity for empathy. They have created new codes of etiquette; no longer do we feel restrained from reaching for our phones in the presence of other people. This new etiquette entrenches a culture of individualism and isolation from each other. This isolation cultivates the perfect ground for fascism.

The digitization of communication not only has political and communal consequences. It also affects the neuroplastic potential of the living brain. The cybernetic episteme reshapes our working memory by rearranging its contents. As Warren Neidich writes, the new focus of power is not only the false reproduction of the past (the manipulation of the archive), but the manipulation of our working memory—the type of memory that influences our decision-making. Authoritarian neuropower wants nothing less than to shape our future memory, argues Neidich.

If the nervous system of cybernetics is digital communication, at the center of digital communication is desire. Mark Fisher devoted his last lectures at Goldsmiths in 2017 to this subject. During one lecture, he played for his students a famous Apple TV commercial from 1984, directed by Ridley Scott and originally broadcast during the Superbowl. In an overt reference to George Orwell’s novel 1984, the commercial depicts a dreary, repressive control society. This society is seemingly liberated when a buxom blonde woman tosses a sledgehammer at a large screen broadcasting the image of an authoritarian figure, causing the screen to explode. The commercial ends with these lines crawling across the screen: “On January 24, Apple Computer will introduce Macintosh. And you’ll see why 1984 won’t be like 1984.” Fisher observes that the video counterposes top-down bureaucratic control to upstart entrepreneurialism. The dreary control society depicted in the commercial is an allusion to not only the Soviet Union, but also IBM, the dominant computer maker at the time. Apple posits itself as the dynamic, colorful new company that will liberate society from dreary IBM, ushering in a new, more vibrant world order. This new world order will fulfill our (capitalist) desires in a way that the communist world cannot. As Fisher suggests, we now live in that world of libidinal capitalism.

Elsewhere Fisher writes that what drives the circulation of information is the user’s desire to make one more connection, to leave one more reply, to keep on clicking. Capitalism persists because cyberspace is already under our skin, writes Fisher; to retreat from it would be like trying to retreat into some nonexistent precapitalist imaginary. In his view, we believe we have as much a chance of escaping capitalism as we do of crawling back inside our mother’s womb.

5.

By means of the cybernetic episteme, Silicon Valley has shaped the world we all live in. As we are poisoned equally by microplastics and fake news, losing our grasp of a shared reality, the “Silicon Six”—as Sacha Baron Cohen called the titans of Silicon Valley in a 2019 speech—propagate algorithm-fueled fear, propaganda, lies, and hate in the name of profit. As Baron Cohen pointed out, the major online platforms largely avoid the kind of regulation and accountability that other media companies are subject to. “This is ideological imperialism,” he said. “Six unelected individuals in Silicon Valley impos[e] their vision on the rest of the world, unaccountable to any government, and acting as if they are above the law.” He called digital platforms the greatest propaganda machine in history.

Democratic institutions have failed to reign in the information chaos and the destruction of the public sphere. As Shoshana Zuboff argues, we inhabit a communications sphere that is no longer a public sphere. She describes this situation as an “epistemic coup” that has taken place in four stages: First, by way of companies gathering personal data about us and then claiming it as their own private property. Second, through data inequality, which means that companies know more than we do. Third, through the epistemic chaos created by algorithms. And fourth, through the institutionalization of this new episteme and the erosion of democratic governance.

Baron Cohen observes that people can take a stand against platforms by recognizing our power to boycott them. (One example is the mass defection from WhatsApp to Telegram when the former announced that would share its user data with Facebook.) But we also need to defend the existence of facts and a shared reality, understanding the world not as something we see but as something we inhabit—treating life not as something we have, but as something we live. Anti-platform strategies might be accused of Luddism, but they are not necessarily opposed to technology—only to certain uses of technology.

It is also crucial that we regard the cybernetic episteme as inextricable from a broader malaise: humanity’s relationship to life and the planet is a toxic one. The very technologies that supposedly enable us to read, think, flourish, and desire are destroying the world we inhabit.

#### Vote negative to rearticulate cybernetic thought towards corporeal care of the subject.

Dyer-Witheford and Matviyenko, 19—associate professor of information and media studies at the University of Western Ontario; assistant professor of communication at Simon Fraser University (Nick and Svitlana, “What Is to Be Done?,” *Cyberwar and Revolution: Digital Subterfuge in Global Capitalism*, Chapter 3, 158-161, dml)

While tactical resistance can involve any and all of the “memes of production” (Deterritorial Support Group 2012), a reconstitution of the left today must ask, what is the opposite of cyberwar? To this, we would answer that the antithesis of cyberwar is corporeal care of the subject achieved through the “balanced conceptions of space and time within culture” and “awareness of spatial and temporal dynamics [that] keep state and market power in check” (Sharma 2013, 314). It is from this perspective that we need to recognize cyberwar’s production of time and space and envision different times and spaces—those of the care of bodies. This orientation against the social destruction, physical, psychological, and infrastructural, of cyberwar does not mean totally abandoning the digital—which, because it so much composes the very texture of everyday life, would be not only difficult but often politically fatal. But it does mean its rearticulation to a set of purposes radically different from those of digital capital. In particular, this strategy requires theoretical reconsideration and practical subversion of the addicted, complicit digital user, the figure envisioned by neoliberal Silicon Valley, by way of desynchronization and emancipation.

This can be described as recognizing a position in and against the military environment of cyberwar in which all of us are now imbricated and finding ways to develop subjectivities that are simultaneously of the network and off the network. It requires the “slow” time necessary for the in-person (rather than online) organization of antiwar collectives, movements, and alliances; defection from compulsive social media use; trammeling corporate capacities to intensify and maintain such addictive behavior; the patient defense and reconstruction of the basic public institutions of corporeal care—free health services; the cultivation of mental health; the recovery and deepening of the legacy of a semidestroyed (or, in many places, never created) welfare state in a new “commonfare”; universal education provisions; worker–community control of workplaces and the means of production; ecological protections—and the assertion of such priorities against the expense and logic of networked militarization. In this work of solidarity, the subject exploited and excommunicated by digital capitalism can transition from alienation toward reciprocity. And to those who say that the accelerated logic of cyberwar means we don’t have time to do all this before catastrophe arrives, we just say, you may be right, but still we have to do it anyway! We can build a “counterwar machine” constructed on the diagonal line that runs between waging cyberwar on cyberwar and fostering the caring corporeality that is opposite of cyberwar.

At the end of her study of world labor activism, Beverly Silver (2003, 176) notes a major reason for the shortage of militant working-class movements in the early twenty-first century. Neoliberalism’s restructuring, globalization, and financialization, with its “growing structural unemployment, escalating inequalities and major disruptions,” has repeated the crisis patterns of previous eras of capitalism, with one crucial exception. The missing condition is large-scale armed conflict. This “global political–military context contrasts sharply with . . . that [which] produced radicalized and explosive labour unrest in the first half of the twentieth century.” As Silver notes, war then involved the mass mobilization of populations that characterized total war. States depended on their working classes to provide not just millions of soldiers but labor in munition plants, shipyards and aircraft factories, hospitals, and farms. When mass mobilization met the horror of mass deaths and mutilation, revolutionary social turmoil could result.

As Silver (2003, 175) observes, advanced capitalism’s turn to high technological weaponry apparently breaks this link between war and worker revolt. Cyberwar can be seen as an extension of this “automation of war.” Nonetheless, as we have suggested, the tendency of digital militarization to liquidate the labor of war is not yet completely fulfilled. Humans remain as the indispensable conscious links and relays within the networks and nodes of digital conflict. Indeed, what we have seen in this book is the surprisingly wide diffusion of participation in cyberwarfare, from the highly specialized military and intelligence units at the cutting edge of advanced cyberoperations to strata of mercenary and criminal proxies, online vigilantes, patriotic hackers, corporate and criminal marketers of cyberweaponry, cybersecurity personnel, and on to the corporate content moderators and state censors and surveillance agents now indispensable to the prosecution of war waged in cyberspace and across scores of hybrid battlefields. To these more or less intentional contributions to the mechanisms of cyberwar must be added the unknowing (or partially unknowing) participation of network users, whose online activities and addictions provide the vital vectors for the memes, exploits, and hijackings of subterranean cyberconflicts and whose reconstitution as data-subjects habituated to ceaseless state and commercial surveillance constitutes the inevitable accompaniment to such operations.

Surveying this field, we can say that military mobilization has not so much been abolished from cyberwar as reconfigured in subterranean, etiolated, and unfamiliar forms. This decomposition of the labor of war, equivalent to Virilio’s state of “endocolonization” by the apparatus of high-technology militarism, may, as we have proposed in this chapter, contain potentials for reversal. If, to date, cyberwar is not, at least in the centers of capitalism, producing the massive havoc of earlier forms of war, the migrant refugees of hybrid conflicts around the world, fleeing algorithmically directed drones, social media–activated death squads, and cybernetic strikes at social utilities, bear witness to its potential to do so. Already, even in ostensibly secure zones of the planet, the costs of militarized and criminalized networks, in terms of escalating social paranoias, crumbling confidence in everyday communication and polarizing social relations, becomes daily more apparent. If this course persists, unforeseen forms of unrest by the new workforces of cyberwar may interrupt its inhuman trajectory.

### Impact Framing—2NC

#### When comparing impacts, you should artificially inflate the value of our algorithmic violence impacts because doing so promotes more exposure and better scholarship. Their impact defense is epistemologically bankrupt because it can’t account for the pervasiveness of datafication.

Ragazzi and Irion, 21—Associate Professor in International Relations at the Institute of Political Science, Leiden University; Associate Professor at the Institute for Information Law (IViR) at the University of Amsterdam (Francesco and Kristina, “Toward a Critique of Algorithmic Violence,” International Political Sociology (2021) 15, 121–150, dml)

I would like in this short intervention to address one of the key paradoxes of algorithmic violence as sketched in the introduction of this article. Surveillance, security, and war apparatuses, empowered through modern digital technologies, have never been so pervasive as they are today (Bauman et al. 2014). At the same time, rarely has such a precise and overarching degree of surveillance been able to impose itself without violence on the broader population (Zuboff 2019). Comparisons of digital surveillance with the years of the communist East German Stasi or the Romanian Securitate are somewhat unconvincing: our contemporary condition, in modern democracies, is a far cry from the level of generalized fear and suspicion that prevailed in those dictatorships. In democracies, algorithmic security is implemented with a great degree of indifference at best, active volunteering of personal data and “DIY surveillance” at worst (Bauman and Lyon 2013, 59). There are, of course, small pockets of contestation among academics, human rights organizations, and activists. But their impact has been, so far, marginal. Occasionally, the opposition to practices of algorithmic violence gains popularity, crystalizing around the use of specific technologies. Advocacy groups have, for example, been successful in mobilizing against facial recognition in the context of the recent demonstrations against police brutality in the United States (Coldewey 2020; Fowler 2020). But overall, for the general public, including many critical academics and activists, Gmail, Yahoo, YouTube, Google Docs, Facebook, Instagram, WhatsApp, and Skype are services that bear no apparent connection with CIA terrorist kill lists and drone operations in Afghanistan–Pakistan (Heller 2013), databases of alleged “radicalized” individuals in Europe (Heath-Kelly 2016), or surveillance mechanisms deployed in the south of the Mediterranean to prevent undocumented migrants from reaching Europe (Fisher 2018).

Irion: I would like to add that for the purpose of serving online ads to internet users the adtech industry has built the largest online surveillance infrastructure in history. How could an entire industry be allowed to spiral out of control, invade and trespass to such a pervasive degree on individuals’ online lives, thereby increasingly refining their algorithmically supported infrastructures? I believe one of the reasons is the invisibility and secrecy of the violence and our lack of imagination. Zuboff (2019, 12) explains that “[w]hen we encounter something unprecedented, we automatically interpret it through the lenses of familiar categories, thereby rendering invisible precisely that which is unprecedented.” Endemic online surveillance is emblematic for the enduring regulatory crisis in information law and policy, which is moreover ill equipped to scrutinize algorithmic systems.

There are many reasons behind this disconnect. Even though the Snowden revelations have highlighted clear relations between these two realities, and even though several academic and advocacy projects work relentlessly to publicize the relations between them, most people chose to ignore them, because of, lack of technical skills, convenience, or network effects. But I would like to suggest that there is a further fundamental reason, of an epistemological nature. Algorithmic violence is largely accepted because unlike the various modes of state surveillance and violence of the past, it is for the most part invisible, inaudible and impalpable for the vast majority of people. Algorithmic violence is indeed located not only in the acts of collecting or processing data, but rather in the technical operations of translation (Goodwin 1994, Bourne, Johnson, and Lisle 2015) that render the world computable. On the one hand, these are the operations of datafication, that is, of transformation of the world captured through various sensors into computational data (Aradau and Blanke 2015). On the other hand, it is located in operations of textualization, visualization, auralization, or tactilization, that is, operations that translate those computational products back into discursive and sensorial outputs that can be acted upon by professionals of security and warfare. Saugmann has captured this idea in the notion of semiotic violence in his above intervention. It is this specific characteristic that renders algorithmic violence largely intangible to scrutiny because it escapes our traditional categories of social scientific knowledge production and thus political mobilization. We know indeed how to study data collection. We know how to study algorithms. But we know very little about how to study those operations of translation that allow discourse, images, sounds, and data to be computed and made actionable.

### Alt Solvency—2NC

#### The alternative starts with the ballot to reorient the production of cybernetic thought in this debate towards care for the corporeal, embodied, un-quantifiable subject. Even academics have a role to play; prioritizing research that enables the slow, patient process of building communities of care and reciprocity spills up in unpredictable ways and challenges the encroachment of the cybernetic episteme, that’s Dyer-Witheford. The essence of the cybernetic episteme is that it requires a constant flow of data from every source it can find to sustain itself, so you should assume that even small disruptions in that flow, like using your ballot to redirect the research priorities of this debate, can have broader political significance.

#### The alt functions at two levels:

#### Individually. Have a low threshold for alt solvency; we’re all so imbricated in the digital moment that individual moments of refusal on their own can become generative points for new relationships of care.

Gray and Eloff, 22—School of Philosophy at North-West University (Chantelle and Aragorn, “Fabulation in a Time of Algorithmic Ecology: Making the Future Possible Again,” *Technology, Urban Space and the Networked Community*, Chapter 5, 105-133, SpringerLink, dml) [pharmakon=something which is both poison and cure simultaneously]

The answer to our problems does not lie in primitivism or any other return to a (mythical) better past. We are here; we need to find ways to deal with now if we are to rescue the future. The answer, equally, does not solely lie in reform. Rather, we need to ask what we want our societies to look like—and here we can look to the past for some ideas without returning to it. In short, we need to foster new forms of collectivity in the maze of individualism and individualisation. This requires radical new formulations of subjectivity that take into account our contemporary situation. Like Bartleby, it might consist of a preference not to, which is neither refusal nor acceptance: it simply “posits an impossibility” (Deleuze 1997, 71). This impossibility or nonpreference produces a tension, an ambiguity that creates a path for escaping the neurosis of the world. That is, the little fissure it creates gives way to a mapping of trajectories away from subjugated groups and towards new types of group subjects that do not merely concede to the present, either in terms of an eschatology of techno-singularitarianism or hikimomori-style withdrawal. For Guattari, this involves processes of resingularisation, where singularisation refers to

a self-organizing process that at its most basic level concerns bringing together ensembles of diverse components (material/semiotic; individual/collective), that is, assemblages … that deploy their own intrinsic references (inventing relations with the outside as well), and the analysis of their effects (especially transformations) on the formation of subjectivity beyond the individuated subject and prefabricated versions of him/her. (Genosko 2001, 129)

Far from the homophile groups of online life, this requires, as Guattari foresaw, an injection of heterogeneity where individuals can be confronted with ideas dissimilar from their own and opportunities to talk this through rather than reactively cancelling 27 someone. It requires forms of offline life that nurture transgenerational, intergenerational, interpersonal, personal and pre-personal long-circuits in order to reach the Neganthropocene, a place of dreams. As Stiegler puts it:

we must turn to the question of the dream in politics and the question of the politics of dreaming—where dreams would be the resource of any neganthropogenesis, that is, any exosomatic organogenesis such that it would preserve its future by maintaining its noetic capacity. (Stiegler 2019, 162)

These new social practices of liberation—yes, of dreaming—cannot be based on new hierarchical relations. Instead, one of the main goals needs to be the creation of new alliances, a transversal politics, “that confers to these initiatives a character of living subjectivation and irreplaceable experience, that ‘is worth being lived’, that ‘gives meaning to life’” (Guattari and Negri 2010, 125). In short, we are looking for health. Interestingly, for Deleuze and Guattari, as for Nietzsche before them, health is not opposed to illness; rather it is the “immanent process whereby illness brings about its own autocritique and self-overcoming” (Tynan 2010, 155). The illness of our time therefore needs to be transmuted in order to create new ways of living again—and this is of course the schizoanalytic practice. The aim is to see our current algorithmic articulations as a pharmakon—that, precisely, is Bartleby’s stance. It is a productive paradox, an affirmation of life and the future, rather than a negation of it. Importantly, though, it is

only with the pharmakon that knowledge takes care of the pharmakon … the whole manifold of life-knowledge—which passes through rituals as well as habitus, trades and forms of worship [cultes] that are found in any society insofar as it consists in a social cohesion that is a collective individuation, cultivating, through these always diverse pathways, the organic and organological solidarity in which it consists. (Stiegler 2019, 224)

The individualist, individualising societies we currently find ourselves in have not only lost their means of tertiary protention, but a memory of what a society is and can be: that which allows the development and co-creation of individual and social freedom; where material goods are produced in order to meet the physical needs of everyone in a society, rather than satisfy the insatiable requirements of capitalism; where free and equal social relationships are fostered so that people can flourish mentally and emotionally and, in turn, develop their ethical and creative capacities.28 If this is the basis of our society, algorithms would have a very different function and that, we hold, is more important than reform.

#### Politically. Don’t assume that nation-states are the only agents capable of making international change, or that debate can’t be repurposed just like other technologies. At a macro-political scale, the alt’s reorientation of cybernetic thought envisions governable stack-layers of collectively designed data architectures in line with transnational networks of insurgent democratic digital sovereignty.

Schneider, 22—assistant professor of media studies at the University of Colorado Boulder (Nathan, “Governable Stacks against Digital Colonialism,” tripleC 20 (1): 19-36, 2022, dml)

Sovereignty need not be solely the purview of nation states. The discourse of digital sovereignty has been particularly important among indigenous communities whose members are used to seeing their pre-digital sovereignty effaced; they have developed governable stack-layers such as tribal broadband lines (Blackwater 2020), cryptocurrencies (Tekobbe and McKnight 2016), data governance (Carroll et al. 2020), and linguistic autonomy (Pinto 2018). Amelia Winger-Bearskin (2020) draws on the Haudenosaunee practice of wampum agreements to propose “ethical dependencies” in software; these would encode and enforce certain commitments up and down the stack. Laying claim to collective sovereignty is central to such practices. Glen Sean Coulthard (2014) challenges the “colonial politics of recognition” – when people accept their colonisers’ definition of their sovereignty, rather than their own – to insist on more autonomous forms of self-determination. He describes how tribal nations can produce sovereignty through “community-scale activities” such as cooperatives and assemblies in everyday life (68). The indigenous organiser Berta Cáceres, before her murder by Honduran paramilitaries, denounced the pseudo-democracy of political representatives but affirmed the “decisive” democracy possible through poor people’s movements (Castellanos and Pine 2020).

Sovereignty can occur at levels ranging from the network backbone to last-mile connections, up through the hardware and software of devices, to the collaboration tools in the cloud. Sovereignty looks like a user-owned cooperative or a city providing connectivity, or like Douglass (douglass.io), an operating system whose apps take their names from icons of Black liberation. The tech publication The Markup has paid a “privacy tax” by developing its own software that protects user data rather than adopting the standard surveillance-based offerings (Angwin 2020). For Archive of Our Own (archiveofourown.org), a fan-run fandom repository, sovereignty puts creators in control of how they publish and protects their work against copyright overreach. What makes technology sovereign is when its stewards are the people who depend on it, protected from outside control by any legal or extra-legal means available. The data, the algorithms, and the interfaces are for their users, rather than acting surreptitiously against them.

5.2. Democracy

The other side of sovereignty is participatory democracy – its guarantor and its everyday practice. Here we resist the temptation of autocratic vanguardism by designing governable stacks to be accountable and alive. The style of democracy may be that of the Debian operating system, a constitutional republic of coders (debian.org/devel/constitution), or like the Ethical Source Movement’s vision of many collectives deciding on the ethical limits of how their software can be used (ethicalsource.dev). Digital democracy is beginning to have dedicated tools – from smaller-group decisions on Loomio (loomio.org) to the scale of cities or countries through Barcelona’s Decidim (decidim.org) or Polis (pol.is), which is employed by the government of Taiwan (Stempeck 2020). Platform cooperatives practice democracy at the level of the company, such as at Stocksy United (stocksy.com), co-owned by artists in dozens of countries (Schneider 2018). On a network scale, the federated social network Mastodon was able to counteract an incursion by the alt-right platform Gab, as it did earlier with Islamic State accounts – through self-organised activity by server administrators and app developers (Caelin 2020). Countering hate speech doesn’t need to depend on the might of a global monopoly; it can be tangible and empowering.

Practices of local democracy from the Global South have been migrating into governable online tools. Participatory budgeting practices originating from Porto Alegre, Brazil (Cabannes 2004), have appeared in apps like Cobudget (cobudget.co) and Decidim. A founder of an experimental political party in Argentina, Partido Red, has applied the same logic of “liquid democracy” to a blockchain-based governance platform, Democracy Earth (democracy.earth). Mexico City’s 2016 exercise in crowdsourcing its constitution has been studied as a model around the world.

Digital democracy has the potential to evolve rapidly and creatively. People can participate in far more rapid and fine-grained ways than was possible when the prevailing regimes of corporate and state governance first appeared. Organisational designs that work well could become part of a governance commons, enabling other groups to adopt, adapt, and share them back into the common pool (Schneider et al. 2021). In this way, small-scale accountability can spread, and it can creep into larger and larger kinds of communities, demonstrating that colonial control was never necessary. The more we demand and practice the arts of self-governing, the harder we are for someone else to govern.

5.3. Insurgency

The spinning wheel stood for household autonomy, but it was also defiance against British rule. Governable stacks must be similarly insurgent. Some of the earliest online social media emerged through Indymedia’s coverage of anti-capitalist protests. Twitter has its roots in technology for coordinating street protests (Costanza-Chock 2020, Chapter 3). While investors and accelerators receive frequent credit for innovation, insurgency is just as much a source of it.

Insurgency might mean challenging government subpoenas of member data, as May First has done, or facilitating leaks about abuses of power. Resistance might take the form of what the Catalan Integral Cooperative calls “economic disobedience” (cooperativa.cat/economic-disobedience), which includes refusing to pay unjust taxes or interest. Insurgents might choose not to submit the data of a friendship to the social graphs of colonial platforms, or to actively deceive those platforms, just as the Tor network (torproject.org) disguises its users’ locations. Like Copwatch groups or the Driver’s Seat Cooperative (driversseat.sco), insurgents can do data collection on the colonisers, sousveillance from below (Browne 2015).

To the extent that establishing the expansionist, slaveholding republic of the United States was also an anticolonial conflict, it relied on self-governance as resistance. The colonists organised through a Continental Congress, which extracted lessons from the Haudenosaunee nations – yes to confederation, no to matriarchal authority – to prefigure a future government. After independence, Alexis de Tocqueville (1840/2006) observed how the flourishing of civic associations energised the politics of the fledgling republic. Successful poor people’s struggles against the country’s wealthy elites, from the 19th-century Populists (Goodwyn 1978) to the 20th-century movements for Black power (Nembhard 2014), grew out of tangible collective organising in labour unions and cooperatives.

Insurgents might use colonial platforms for education and organising. They might spread viral messages and enjoy themselves. But if they have governable stacks to go back to, they are more than just subjects. They are maroons, with swamps and forests of their own.

### Framework Core—2NC

#### Counter-interpretation: The aff’s research agenda should be a legitimate subject of negation.

#### Prefer the model that produces better researchers. Centering debates on link uniqueness and quantifiable solvency furthers the conversion of communication into data, which is the backbone of the cybernetic episteme, that’s Emmelheinz. Only our model has any hope of motivating debaters to mobilize outside the activity.

Jackson, 20—Professor and Head of Department, International Education and Philosophy of Education, Education University of Hong Kong (Liz, “‘But is it really research?’ mentoring students as theorists in the era of cybernetic capitalism,” Educational Philosophy and Theory, 2020, Vol. 52, No. 1, 17-21, dml) [inserted “is” to correct a suspected typo for grammatical integrity, insertion denoted by brackets]

As Michael Peters notes (2017, 2018), in this age of ‘cybernetic capitalism’, the global knowledge infrastructure is dominated by trillion-dollar multinationals. These forces are reshaping what counts as valuable knowledge, interpreting academic significance in terms of the capacity of research to directly lead to neoliberal market-oriented economic growth. An outgrowth of the rise of the age of cybernetic capitalism is the increased valuation and appreciation of big data over other kinds of evidence and bases for knowledge. As Kenneth Neil Cukier and Viktor Mayer-Schoenberger (2013) have noted, the subsequent rise of big data as the most valued currency can be characterised by ‘the ability to render into data many aspects of the world that have never been quantified before’. To neoliberal institutions and nation-states, which provide public and private information infrastructure, such data is of tremendous use and power. Ordinary academics in this environment have tended to conform to capitalistic frameworks of value in this case, working to gather and analyse data in ways that benefit dominant social institutions and political economic actors. Some may assume there is a mutual benefit, as more funding will be granted, and greater significance ascribed, to researchers gathering data that is of more value under neoliberal growth models and agendas.

Educational researchers are far from immune to these pressures and these seductions. Major associations for educational research such as the American Educational Research Association celebrate their connections with government funders such as the National Science Foundation, which specifically funds ‘scientific’ research that aims to have an impact. By ‘impact’, it is implied that the research must agree broadly with the goals of institutions and the value of forwarding them, without major critique or investigation. By ‘scientific’, there is an emphasis on data. While one might say, following Peter Roberts (2018), that all research is informed by data, as it is ‘generated through human experience’, in competitive environments in the age of cybernetic capitalism ‘more data’ is regarded as better data. Quantitative data becomes better than qualitative data, and so on.

There is perhaps no more vital task of educational theorists in this age than to understand and examine how economic growth models are shaping knowledge production agendas, as well as economic and information distribution, normally to benefit the visions of leading players in the age of cybernetic capitalism (Peters, 2017). Yet in this context, it would appear that academics researchers are more constrained than ever before by these political-economic forces when it comes to producing research, to be accountable to higher educational institutions and other funding bodies which follow the lead of multinational giants. Rather than setting agendas, most are complying, seeing little recourse and indeed lacking tools that have become devalued by, or may even now be regarded as inherently threatening to, the architects of neoliberal structures that frame information production agendas today.

In the context of ordinary higher education and research institutions, with the ability to gather more data has come greater possibilities for quantitative research. In education, as in other fields, quantitative research has retained a favoured status over qualitative and philosophical approaches for decades. Maths and sciences are still seen as the ‘hard’ and ‘tough’ sciences and fields, over the ‘softer’ arts. That this is senseless binary, particularly in education, has been argued by many philosophers of education (Pring, 2007). Qualitative researchers are not immune to the significance of numbers, and quantitative researchers should not be looking at numbers to the neglect of everything else. Yet today, one can see that this binary clearly does have a logic: to divide and differentiate research according to its value within the orientation to the world undergirding cybernetic capitalism. In this framing, educational theory, with its focus on ideas, is even more of a loser than qualitative research, not even deemed as research by some due to its lack of big data—and lack of neoliberal priorities.

This is just the latest challenge educational theorists have faced in defending their position in the academy, given the way their work does not tend to fit perfectly with traditional conceptions of educational research, or of applied philosophy (Roberts, 2018). Philosophers of education have expressed for a long time a sense of a minority status in teacher education institutions as well, which are normally focused mostly on educational practice, and on training students in qualitative and quantitative research methods. Philosophers and theorists may be feel further crunched today, in education and other fields, as the datafication era aligns with the push for competitive large-scale grants in higher education, which also makes empirical and quantitative research appeal more than ever before.

In this context, educational theorists can do more than simply try to conform, in vain. Instead, they can take responsibility to question neoliberal assumptions about value and significance, interrogate contemporary political-economic influences on academic research and social life, and provide alternative accounts of what is good, significant, and ‘productive’. As Roberts (2018) writes, they can also resist ‘some of the demands of a performance-driven world’, for instance by taking time to pay attention to what is happening in their institutions and in the field today: not to be pragmatic or ‘relevant’ for the sake of developing neoliberal ‘impact’, but to reconsider the way their values and ideas do and do not align with the processes and value orientations experienced in the world around them. Additionally, they can train fellow researchers to focus on these issues to a greater extent than they had been focused on in the past. This can also entail cultivating communities which are dialogic and supportive of alternative visions in research and social life.

Admittedly, one does have to face a forceful tide to critically question the normalised neoliberal agenda in education today. Educational theorists may get the sense they are the only ones not working to forward capitalist and state political-economic interests in education faculties dominated by the competitive binary of quantitative and qualitative. Like many, I have had to go to pains at times to explain my research as research to some colleagues. They may not be aware of theoretical approaches to educational scholarship, depending on where they were trained. Philosophers of education also may grapple to explain the practical relevance of their research, for example, to knowledge exchange or knowledge transfer capacities of higher education institutions. They may find their work categorised in some institutions as ‘blue sky’ or ‘basic research’, which often gets funded in more limited ways than ‘applied’ scholarship. These challenges can be unsettling, as one discovers their work is not regarded as valuable in a larger community due to contrasting visions of value.

Students have a great potential in this context, in pushing the field forward and understanding and critically examining new developments in society and in education. Ideally, with mentoring professors and supervisors, they can learn to understand the historical backdrop to current trends, while adapting more traditional philosophical and other techniques to identifying and examining serious challenges to informational and material equity and justice today. However, it is not always easy to work with students in this way. Many educational theorists may find their work is also misunderstood or unappreciated by their students, as ‘not really research’.

Most of my doctoral students arrive to my university with an interest in educational philosophy and theory. Yet inevitably, after a year or so of socialisation into my institution, with other students, and in classes on ‘qualitative and qualitative research methods’, they come to discuss their research plans with me, and their newly discovered need to gather data—and the more, the better. Their methodology teacher (reportedly) said nothing to them about philosophical methods as educational research. The other students are not aware of any education students who ever received a doctorate, or had their proposal confirmed, without gathering and analysing data, by which they mean something cold and detached, yet connected to the values and interests of particular social and political institutions. Their initial proposals adopt an apologetic tone for not relying upon quantitative methods. They apparently learned in their courses that quantitative research can have statistical validity and reliability, while qualitative research lacks them. They develop a deficit view of theory, as not reliable, as not transparent, not valid, not replicable, not generalisable, significant, and on and on. They develop a view of philosophy of education as deficient and lacking in the context of the great power of big data.

These students are not pushovers. They often have provocative observations about equity and social justice issues, and strong analysis skills. When I am the only person they know who is not gathering ‘cold, hard’ data—and the more, the better—they are not unwise to critically question my advice, which seems contrary to what everyone else says.

Over time, I have refined my approach to handling this concern. First, I try to interact at an institutional level to increase awareness of philosophical and theoretical methods of educational research among colleagues and students. When tasked with reviewing, reforming, and updating curriculum, I make small and large strides to see my methods included. A small stride is adding phrases about ‘analytic methods’, ‘documentary analysis’, ‘theoretical approaches’, and the like to student guidebooks and curriculum documents, which previously presented a binary approach to educational research, as either qualitative or quantitative.

A larger effort can be made by offering new courses or sessions on philosophical approaches and related topics in educational research, which emphasise how philosophical tools can enhance research within and beyond the field of educational theory. Most education doctoral theses in my institution include some discussion of conceptual or theoretical framing, and most students have social justice or related interests in mind in conducting educational research. At the same time, all students must engage in processes of getting ethical clearance to do their research. All of these characteristics of their research process invoke philosophies, for conducting research, and for understanding knowledge claims and methods of argumentation and other aspects of what is categorised as ‘good’ research.

These observations undergird my work to introduce more philosophical ways of thinking and knowing into my institution’s practices for training educational researchers. Particularly when it comes to research ethics, the subject matter has been alienated from its original purposes in mainstream neoliberal educational organisations, so that ethical approval is more about protecting universities and researchers than about developing ethical research approaches, aims, and projects. The need to bring ethics back to educational research ethics in higher education is thus one particular area where educational theorists can play a role, highlighting the value of ethical reflection in the conduct of research, beyond matters of participant consent, or lack thereof.

In relation, there is a need for more classes for students at all levels which are oriented toward critically evaluating and understanding, rather than conforming to, agendas of big players in cybernetic capitalism, such as the multinational companies shaping the global knowledge infrastructure and state information capitalism. In this context, most classes on globalisation and education tend to paint a neutral picture of recent developments in neoliberal education and cybernetic capitalism, if not an outright positive one. Typically, educators are encouraged to ‘stay neutral’ in teaching such classes. Meanwhile, the orientation of higher education toward neoliberalism and supporting cybernetic capitalism undergirds the rest of the curriculum, hidden and explicit. In this context, to give a critical analysis of these trends can be seen as provocative and deviant, while classes that celebrate neoliberalism and big data in conformance with institutional priorities are expected. Here, there is little hope that students can learn to value philosophical approaches which are simply cast in neoliberal organisations as leisurely and unproductive. Thus, curricula should be reoriented toward providing critical analyses and not just complementary ones in examining the rise of neoliberalism in higher education and state information capitalism. This background should also be reflected upon by educational theorists who hope to understand and act effectively within contemporary higher education institutions, anticipating misunderstanding and misrepresentation of their ideas, and the related possibility that they will be considered as deviant for questioning that which has been systematically not questioned in mainstream curriculum for many years.

Another strategy for introducing students to theory in light of the pressures faced is to direct them toward critiques of educational research framings that exclude or dismiss theoretical approaches. I share with students that assessments of research indicate that philosophical research is certainly capable of ‘rigour’, originality, and significance. This is true within research assessment exercises, although these frameworks should not be regarded as having a monopoly on conceptions of importance and other research values. In relation, they can learn more about how educational research faces challenges as a field, because often in empirical educational studies ‘“what works” doesn’t work’ (Smeyers & Depaepe, 2006). Beyond these observations, one can point further to the works of many educational philosophers who have more fully and compellingly defended the field in the era of datafication, who can be cited and shared with students (for example, Davis, 1999; Smeyers & Burbules, 2011; Smeyers, De Ruyter, Waghid, & Strand, 2014).

And I appeal to students with an observation about educational research more generally: All educational research wishes to deal with a problem or challenge, and usually it is social nature. Each of my students come to the field of education with a sense of wanting to make things better, or to understand processes related to education to enhance things. Sadly, I see this motivation being stamped out of students, due to pressures to conform in the process of becoming academic researchers. Intrinsic motivation dies in the face of extrinsic motivation to pass administrative hurdles, get ethical clearance, and conduct research using model best practices. As a result of the intensified pressures to conform, many students feel alienated from their own work and voice over time. They see their desire to understand minority experiences translated into the modification of psychological instruments to test for anomie, or to generalise about changes in happiness or flourishing. Doing something unique or critically reflective seem more costly and risky than conforming. Here, neoliberal agendas in higher education can be seen to work actively on students, as they must perform apologies for not collecting big data, and compromise what matters to them to conform to environments which handle ethics, significance, and other issues in narrow, often problematic, ways.

Philosophy of education has been described as a dying field in the era of datafication. Anecdotes and worst case scenarios of philosophers and theorists being replaced with big data scholars suggest to some people that it may be unethical even to continue to train philosophical students, when ‘the jobs may not be there’. In such a context, it [is] imperative to train new educational theorists in ways that can provide for their flourishing in this environment: not to hide from ideas of our time by looking backwards longingly, but to engage in the real world in critical, thoughtful ways (Roberts, 2009). This may also include developing intellectual kinship, and supporting communities of inquiry within and outside institutions where ideas are and can be valued and appreciated.

One thing is certain in this context. It is no use for educational researchers to put their heads in the sand. Staying versed in and thoughtful regarding what constitutes good educational research is important for theorists of education. Philosophical thinkers must not only be defensive about the value of what they do, but active in constructing discourses about what is valuable, significant, rigorous, impactful, and relevant scholarship. Without members of faculty taking leadership in this era, cultivating good work in fields which are theoretical or ‘arty’ is bound to face more and more hurdles. Among these hurdles are decreasing capacities for funding, recruiting, and training of future theorists and philosophers. Fortunately, in this context it is often easier to influence students than colleagues. Students are not inherently anti-philosophical, although they can become anti-philosophy over time, in circumstances which systematically devalue work which is seen as threatening to status quo and agendas of multinational corporations and other arsenal of cybernetic capitalism. Educating students that theory really is research may feel like an uphill battle, but it is one worth engaging in if one aspires to see the field, not to mention the world, flourish in the future.

#### Machine Learning DA: Mechanistically weighing the consequences of fiated plans over and over makes debate algorithmically violent at the level of form, which has material significance. If we win framework it creates uniqueness for alt solvency—changing the way you weigh consequences in this debate can intervene in your process of subject formation.

Amoore, 22—Professor of Human Geography in the Department of Geography, Durham University (Louise, “Machine learning political orders,” Review of International Studies, February 15, 2022, dml) [language modifications denoted by brackets]

Yet, what I propose here is that machine learning political orders reverse Deleuze’s dictum so that the political problem is constituted by the posited solution; or, the solution gets the problem it deserves. The retroactive logic of deep learning commonly begins with the identification of the target output from the model, actively using the output signals that diverge or converge on the target as an experimental space of modulation and adjustment. Though there are multiple possible functions or ‘solutions that will match the data’, a machine learning algorithm will use ‘two sources of information to select the best function: one is the dataset, and the other (the inductive bias) is the assumptions that bias the algorithm to prefer some functions over others’. 40 In order to change the output signal, the weights within the hidden layers of the neural network adjust and modify the signal that feeds forward to the next layer. Why does this computational process matter for how the political problem and the solution interact? The retroactive move from target solution to the weights in the model means that the parameters and dimensions of an intractably difficult political question – democracy, pandemic response, border security, stability in the economy – become configured as infinitely adjustable in relation to the solution. Where the concept of problematisation suggests a multiplicity of actions that could take place under the broad unifying conditions of the formulation of the problem – and, indeed a space for normative deliberation of possible actions – this retroactive paradigm forecloses the multiplicity of plural solutions to a single target, and reduces the framing of the political problem to the weighting of inputs. Every adjustment or modification of the parameters in the deep learning model is simultaneously an arrangement of the political problem.

To begin at the ‘end’, with a target output of the model, is thus to transform radically what a political claim can be in the world. For example, machine learning algorithms are increasingly being deployed in immigration and borders decisions. The introduction of machine learning in the sorting and classification of visa applications does not merely automate some aspects of a previously human centred bureaucratic process. More than this, the building of a model of the flows of immigration claims actively constitutes what a border can be and how it is understood as a political question. Moreover, the space to challenge the political formulation, such as for example to question the racialised criteria that are applied to the judgement on a person, is also closed out by the machine learning process. In contrast to the rules-based models that I described as engineering racialised assumptions into association rules (for example, in Rakesh Agrawal’s data mining models), machine learning learns and generates new racial formations from the data examples. With machine learning forms of classification, there are no criteria as such; there are only inputs, outputs, features, and functions. The model will also adjust with the volatilities and geopolitical disruptions of migration, shifting its thresholds so that the derived outputs are decoupled from the input data of a visa application.

There are profound political consequences of this more generative and disruptive approach to data inputs. In 2020, for example, the Joint Council for the Welfare of Immigrants (JCWI) challenged the UK Home Office’s use of a ‘streaming algorithm’ to allocate visa applications to high, medium, and low levels of risk. The JCWI identified the nationality data that were among the inputs to the algorithm that scored some applicants as ‘high risk’, effectively automating the decision to refuse the visa. JCWI and Foxglove Legal successfully argued that the nationality data are proxies for race and, therefore, in breach of the provisions of the Equality Act 2010.41 If the algorithm had been a solely rules-based ‘if … and … then … else’ sequence, then the juridical removal of racist input data would arguably substantially change the outputs of the system. However, with machine learning it would be a mistake to conclude that the removal of a racist input will excise the racialised propositions of the model. The streaming of visa applications into risk-rated clusters, as exhibited in the JCWI case brought by Foxglove, is an example of a solution defining and configuring the political problem, so that immigration targets are the starting point. When the input data are not variables (in the functionalist sense) but features, the UK Home Office can agree to remove a racist input (as they have done) while continuing to weight other features in ways that revitalise racist inferences that were not strictly present in the input data. For example, the weighting and parameters applied to travel, to familial relationships, or to periods of time spent outside the UK can serve to constitute a suspicious population and to generate a red-flagged output. When the model is learning about salient features and clusters from the dataset, its racialised assumptions will exceed the categories of the input data and extend to the groupings and communities created by the machine learning process. It is not only the use of data from which race can be inferred, but more significantly that the immigration algorithm forecloses the potential of a person’s future on the basis of a racism that pervades the model all the way down.42 In short, the question of what kinds of political actions, which political claims, or which policy agendas can be designed and made, is condensed down to the foreclosure of a target output solution.

When the design of a machine learning model becomes a valued political object in itself, the derivative outputs of the model are exchangeable and tradeable beyond any specific defined political problem or ‘domain’. 43 In common with the models built by Cambridge Analytica, everything becomes a function of deep learning to the point that there are no bad outputs – even where this may be illness, racism, death, destitution, social hardship, child poverty – there are only target outputs and the adjustable parameters of a problem. Amid the loss of more than 170,000 lives to COVID-19, the UK launched its national data strategy in 2020, describing the ‘high watermark of data use set during the pandemic’ where businesses, government, and organisations had been ‘freed up’ to ‘innovate and experiment’. 44

A period marked by lack of effective emergency planning and horrifying loss of life is thus articulated as a ‘high watermark of data use’. In his testimony before the UK House of Commons Science and Technology Select Committee, former advisor to the prime minister, Dominic Cummings, explained that conventional civil contingencies ‘did not have the data architecture’, and that ‘companies [DeepMind] had stuff we could use off the shelf, hack it together for the NHS.’ 45 Behind the rhetoric of his testimony, Cummings’s account does express the deep faith placed in deep learning models to address the data gaps in bureaucratic structures. On the day that he appeared before MPs, Cummings released a photograph of a whiteboard used to map early pandemic planning. Among the scrawled notes, a question is posed: ‘who do we not save?’. Viewed from the perspective of the building of machine learning models for the pandemic – or the ‘hacking together’ by private tech companies – the question of who will not be saved is but a mere parameter in a model, to be adjusted in relation to NHS capacity. In the event, this parameter was also a deeply racialised metric – with people of black and South Asian ethnic background four times more likely to die from COVID-19 in the UK.46 In common with the racialised logics of the immigration algorithm, the pandemic models did not need to begin with race as a category or input to nonetheless generate a deeply racialised model of algorithmic violence. The machine learning model itself has extraordinary resilience in the face of complete moral and political failures because a weight can always be adjusted, a threshold modified, a parameter tweaked. The question of ‘who do we not save?’ is translated into the parameter of a model whose target outputs are the starting point. In a situation where there is a total and abject failure of policy and good governance, the innovation in data science and AI is nonetheless fostered by the racialised violence and social turbulence that is generated. Whether this is incorrect or unjust decisions made in an algorithmic benefits system, poor judgements on policing deployment, or the catastrophic pursuit of a modelled ‘herd immunity’, machine learning political orders learn something from the data generated by the volatility.

A similar sense of the productivity of fractured governance is present in the UNHCR’s statements that ‘even in highly volatile and chaotic environments’, digital systems will ‘radically expand the responses that can be crafted for challenges in health care, education, migration, and security’. 47 The organisation envisages machine learning technologies within a process of ‘competitive disruption’ to what it calls ‘obsolete’ institutional structures ‘with legacies dating back to World War II’. The flexibility and agility of a deep learning model – deployed, for example, in UNHCR’s ‘Project Jetson’ predictive models of refugee movements – becomes a condition of possibility for the imagination of adaptive digital humanitarian and pandemic response, so that social and political relations are reconfigured as the parameters of a model.48

In each of the examples I describe above, functionally arranged structures of postwar social and international orders are reimagined along the dimensions of a machine learning universal function. That is to say, a function that is immanently mappable from a target output to the weightings of the layers of the problem. To propose that a policy or an institution must deliver on a function thus also shifts its ground – for something to ‘function’ it no longer needs to work as such.49 As Debbie Lisle has argued, the cultures of science and engineering mobilise a politics within which ‘failure’ itself is rendered an ‘instructive experience’. 50 Within a machine learning logic, the instructive experience of failure permits the model to learn those unknown things that are beyond the distribution of data in a training dataset. Though machine learning orders cannot be said to fail as such – or at least the output of the model is never a failure but only a signal – the retroactive generation of political problem from output solution means that the very idea that a neural net can approximate any function becomes a powerful political idea. In short, though these ideas of failure are ontologically distinct, they become epistemically aligned; there is slippage between failure as learning, and the idea that there can be no ethical failure, nor catastrophic policy failure.

At stake in retroactive design, then, is not merely that deep learning algorithms are deployed to govern society, but rather that society comes to understand itself and its problems through the lens of the deep learning model. The relations among people, objects, and space become rendered as features from which something useful can always be extracted, from which a function can always be found. However, the plurality and multiplicity of those relations, and the potentiality for new or alternative political projects to emerge, is radically foreclosed around the retroactive mapping from target output to the weighting of parameters in a model. It is to the usefulness of exposure to contingency that I now turn, with a discussion of how technological trials became perennial and indefinite.

Trial by design: How the test became an indefinite trial

The concept of alpha and beta testing has its origins in IBM’s 1950s software development, when the ‘A’ test signalled the in-house testing to improve the engineering and the ‘B’ test referred to the verification through user engagement and development. In his account of Cold War America and the culture and politics of computers, Paul Edwards describes the emergence of cybernetic culture and its penetration of state and military thinking. In the context of Edwards’s ‘closed world’ integration of a ‘seamless web’ of human and machine systems, the engineer deploys the testing regime in a form that mirrors the hierarchical logics of computers.51 As an engineering practice of the twentieth century, the test formed an intrinsic part of the rules-based and cybernetic approaches to government and computer science. As Edwards depicts the Cold War collaborations of IBM, RAND, and the aircraft corporations, the process of political planning itself became an ‘if … then’ proposition, ‘constructing a list of tests to perform’, identifying failings as information problems, and creating feedback loops from test to engineer.52 In this sense, the Cold War alliances between computer science, mathematics, and the military state embodied a specific understanding of testing as practice, and of errors as problems of fallible human perception that could be corrected with machine systems.53

This conception of testing and the sequential procedures of the ‘list of tests to perform’ is aligned with the rules-based computation and rules-based social and international political orders I have described. It is a conception of the test that is deeply probabilistic and conceives as testing as a process concerned with the calculation of probabilities. As Orit Halpern describes the cyberneticians’ practices, ‘they focused on the ability to calculate the probability that one set of interactions (the missile hitting the plane) will occur, over other sets less likely but possible’. ‘This is a worldview composed of functionally similar entities – black boxes’, she writes, composed only of ‘their algorithmic actions in constant conversation with each other producing a range of probabilistic scenarios’. 54

Against this historical backdrop of probabilistic alpha and beta testing within functionally similar entities, the rise of deep learning algorithms is most profoundly possibilistic in its orientation to the future.55 As a mode of political ordering, machine learning circumvents modern notions of testing in science and engineering by turning to the trial and trialling as experimental technology. The trial is a more possibilistic approach precisely because it refutes the functionally similar entities and probabilities Halpern denotes in cybernetics, and it embraces instead the generation of multiple possible functions in order to defer a decision on what is politically useful. Understood in this way, the rise of trialling in contemporary machine learning has more in common with the conduct of stress testing to anticipate uncertainty in finance than it does with alpha and beta testing in software engineering.56 The machine learning model dwells indefinitely in its trial phase because it is designed and redesigned through its exposure to people, objects, places, and scenes, perennially modifying itself in response to what it has learned through its encounters. In this way, the ‘demo’ as technological demonstration, has a close relationship with the ‘demos’ as the people, the population and democracy.57 ‘Our forms of technological testing and demoing’, writes Halpern, ‘envision a world where artificial intelligences and computers can replace the democracy that is now imagined to be obsolescent’. 58 As deep learning models penetrate public space, for instance in live facial recognition biometric systems in urban spaces, at borders, and in military spaces, every trial of a deep learning model is also an active reconfiguration of that space as the model adapts in response to the contingencies it yields.59

For example, in the world’s first legal challenge to police use of automated facial recognition algorithms (AFR), the appellant, Bridges, argued that South Wales Police unlawfully extracted his biometric data during two trials of the technology.60 Bridges had been subject to AFR during a protest outside an arms fair in Cardiff in 2018, and during a Christmas shopping trip in 2017, with each trial of the system storing his biometric data, cross-matching with a watchlist, generating match scores, and modifying the sensitivity of the model. The court of appeal found in Bridges favour in 2020, following testimony from an expert computer scientist whose account vividly illustrates how the trial indelibly marks and recalibrates a gendered and racialised system. ‘AFR systems will have a higher error rate for women and people from black and ethnic minority groups’, he testified, and ‘where an end user is adjusting threshold values it may make the AFR system particularly sensitive for some individuals. People from that ethnic group will be wrongly matched more often.’ Thus, the trial of AFR – ongoing for a seemingly indefinite period from 2017 – will continue to generate racialised outputs and clusters of suspicion, even where individual biometric datasets are deleted. As Rocco Bellanova and Marieke de Goede describe architectures of data analysis, ‘the infrastructure aims at defining the “right population” to be algorithmically governed.’ 61 The very communities who are already disproportionately targeted by the state will experience an intensification of scrutiny and control. In this way, the capacity of a person to be present, or to gather with others, in public space is iteratively and intimately related to the exposures of a machine learning model that is indefinitely trialled across multiple spaces. Unlike the feedback loops of Edwards’s Cold War military-computer science collaborations, the error rate of the biometrics are contingent on the shifting infrastructural thresholds and parameters of the algorithm. Whereas the cybernetic mode of testing was concerned with the engineering of human and machinic component parts, the machine learning mode of indefinite trials makes the limit and the threshold the object of the trial, so that setting sensitivities, moving borders and boundaries reconfigures both algorithm and action.

In this way, the orientation of the indefinite trial is closer to an experimental and open-ended process of design than it is to engineering. The very etymology of design is from the Latin designare, to designate, to mark out, and related to disegnare, to contrive or intend. It is precisely this process of designating and marking out that I see at work in the indefinite trials of deep learning technologies in cities, at borders, in public space. Bruno Latour outlines a philosophy of design in which ‘design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes.’ 62 For Latour, the practice of design is counterposed to historical notions of building or engineering, so that ‘things are no longer “made” or “fabricated”, but rather designed.’ ‘This was the old way’, he writes, ‘to build, to construct, to destroy, to radically overhaul’ through engineering.63 By contrast, to design something, for Latour, is never to found something radically new but always to seek perennial iterative modification, so that ‘it is never a process that begins from scratch: to design is always to redesign.’ It is for this reason – the practices of design as open-ended iterative modification, even as ‘anti-revolutionary’ – that I align contemporary machine learning models with design and not strictly with engineering.64

Indeed, many contemporary deep learning practices such as ‘transfer learning’ definitively reject ‘handcrafting representations’, in favour of ‘greedy exploration’. 65 Every action is a modification of the residue that is already lodged within the layers of the model, it is never a complete overhaul or disruption. As Latour suggests, ‘to say everything has to be designed and redesigned, it will never be revolutionary’. 66 This foreclosure of something different, something revolutionary, is a crucial problem in machine learning political epistemes. As I have described, even where the practice of trialling a model is found to be in breach of law, or where racist data inputs are removed, still nothing revolutionary can emerge. For design can always modify and adjust and move the threshold, each adjustment another indelible mark, a marking out and a demarcation line. When Latour concludes that ‘designing is the antidote to founding, colonizing establishing’, I must disagree with him, for it is precisely colonising in ways that incorporate ever-increasing layers, extend to ever more domains of life, and dwell quietly in the violences of the modified weight. What new or alternative politics can possibly emerge when every potential pathway has already been narrowed to a mere parameter? It is to the implications and potentials for alternative political futures that I now turn in conclusion.

Design interruptions: Resisting machine learning worlds

In setting the themes that animate this Special Issue on disruption, Nicole Grove posed the question ‘what kind of worlds are in store for us as algorithms disrupt forms of organisation and advocacy for more equitable futures?’. 67 I have sought to map out how machine learning actively incorporates the data from disrupted and fractured forms of organisation, and why it is that advocacy for alternative political futures becomes foreclosed in the logics of retroactivity and perennial trialling. I have suggested that a machine learning political episteme – one that eschews rulesbased computational and political orders – is profiting from the undoing of postwar international and social institutions, from the deep neural networks powering the Vote Leave campaign to the so-called ‘digital transformation’ of the pandemic NHS. While, of course, I am not nostalgic for cybernetic worlds of rules-based computation and the liberal international order, nevertheless it is the case that notions of democratic life, human rights, and social ethics also grew amid such rules oriented orders. Where machine learning political orders are precisely profiting from the undoing of rights and collective public institutions, there are new challenges for the politics of resistance.

What happens to the space for resistance amid the power of the machine learning algorithm? What are the possibilities for reopening the futures that are condensed and foreclosed in the output of a deep neural network? Where machine learning algorithms are increasingly learning from the features of social scenes and the gathering of people in public space, is collective politics reduced to a being together that is merely the clustering of attributes? As Judith Butler has put the question, ‘what does it mean to act together when the conditions for acting together are devastated or falling away?’. 68 Such questions are more urgent and acute because the threats to the rights to protest and freedoms to assemble are intensified by a machine learning order that absorbs the attributes of collective action. In her treatise on political assembly, Butler imagines that the ‘gathering signifies in excess of what is said’ and that ‘popular assemblies form unexpectedly and dissolve’, exercising a ‘plural and performative right to appear’. 69 Yet, this plural and performative excess of the gathering of vulnerable bodies in public space is precisely under threat from the retroactive and trialling logics of the machine learning polity.

When the machine learning algorithm becomes the mise-en-scène of the public square, the means of arranging the scene and extracting the features, what political claim can be heard that is not already extracted and scored, and who can make it? The task for resistance, I suggest, is to interrupt the ordering of the political scene in order to ask how it might be otherwise. My emphasis on interruption consciously rejects the vocabularies of disruption that animate the force of disruptive technologies and ‘push on the fracture until it breaks’ tech industry cultures. To interrupt the scene is to resist its very condition of appearance, to locate the breaches in algorithmic arrangements and to show how they could be otherwise. As Walter Benjamin notes of Bertolt Brecht’s device of ‘interruption’ in epic theatre, ‘the truly important thing is to discover the conditions of life’, where this discovery ‘takes place through the interruption of happenings’. 70 To interrupt the scene of a machine learning political order would be to confront the plural branching pathways that could have yielded a different output and to amplify those branches as political decisions. In every arrangement of a machine learning model there are the traces of the rejected alternative. Brecht’s device of interruption presents the observer with the traces of what could have been present, with the actor performing ‘in such a way that the alternative emerges as clearly as possible’, allowing ‘other possibilities to be inferred’ even while she [they] ‘represents one out of the possible variants’. 71 In this way, the interruption of the scene works against the grain of the algorithm’s reduction to one visible output, showing the contingency and multiplicity of the one out of many possible variants. Here lies a significant form of resistance; to amplify the branching points as moments where things could have been otherwise, where other possibilities could be inferred; and to refuse the reduction of political difficulty to one that is the output.

To resist being governed by a machine learning political order will necessitate naming the harms – beyond the conventions of privacy, data protection, and existing bodies of rights – of the foreclosure of alternative political futures. Though the machine learning political orders I have described close off political contestation and unheard claims, under the figure of the machine learning model there remains a teeming politics. When the solution precedes the political problem, the adjustment of parameters is also a real and violent modification of people’s lives – as migrants, as benefit claimants, as people gathering in the city square. It is for this reason that the deep learning practice of modifying ‘weights’ in the model must be rendered heavier and more burdensome than the lightness of an adjustment implies. The weight in a machine learning model is not merely a technical weight on a connection in the neural net. It is the full burden and heaviness of a rejected visa application, a past facial biometric captured at a protest, a refused welfare claim, the extracted features of the refugee. In her compelling account of how colonial formations endure, Ann Laura Stoler foregrounds the ‘enduring fissure’ and the ‘durable mark’ of imperial duress.72 Stoler’s affecting thought about ‘duress’ foregrounds the ‘hardened, tenacious qualities of colonial effects’ and ‘endurance’ in the ‘capacity to “hold out” and “last”, to endure as a countermand to “duress” and its damaging qualities’. 73 The weight of the machine learning algorithm could be freighted with the heaviness and endurance of Stoler’s imperial duress. Each adjustment and modification of the model a squeezing and a tightening of the conditions of liveability of a political space, a community. Every indefinite trial a trial in the fullest sense of something that is borne by vulnerable bodies.

### Perm Core—2NC\*\*\*

#### \*\*\*Note while prepping: While I wrote some things out, this is not intended as a catch-all perm block. You could read this block largely as-is against “perm do both,” but if there’s more nuance to the perm or multiple different perms, consider adding in some theory arguments about severance or intrinsicness (which I intentionally did not include in this block, as they are perm-dependent), or splitting up some of the analytics/cards/etc among the different perms. Don’t just group them, read this frontline, and move on!

#### Mutually exclusive: the alt is an ethos that refuses liberal legal solutions like the aff. A politics of corporeal care is intrinsically opposed to attempts to make life into data, so if we win a link then the perm can’t overcome it—that’s Dyer-Witheford.

#### Judge competition based on holistic epistemological commitments, not unique opportunity costs. The alt and the aff are both more than the sum of their parts or individual arguments; the logic of their perm is premised on rational cost-benefit analysis that can only determine that the alt is not an opportunity cost by quantifying it into discrete components and rearranging them in combination with the aff, which is the link.

#### If we win any part of our framework, then the perm fails—inclusion of the aff brings in outdated liberal legal epistemologies that irrevocably misdirect their research agenda. Only the alt alone can overcome the cybernetic episteme.

Jiménez, 22—Melbourne Law School, The University of Melbourne (Aitor, “Law, Code and Exploitation: How Corporations Regulate the Working Conditions of the Digital Proletariat,” Critical Sociology, 2022, Vol. 48(2) 361–373, dml)

The fundamental problem with the liberal mentality is that even the most progressive interpretation of current or future liberal legal developments won’t go to the bone of the exploitative nature of digital capitalism. That is, to the antagonistic relation between workers and capital. In short, the liberal comprehends work and relations of production within the liberal framework, which has as central faiths the belief in: (1) the rule of law, and (2) the causal interrelation between law and relations of production. Under this liberal framework, a good labour law will frame the way work is organised. Yet, this has been proved to be wrong. Digital capitalism runs faster than every possible law or court decision. Besides – and above everything – labour exploitation is not a crime (Snider, 2018) since it is the pillar of the capitalistic regime.

Second, the relation of law and capital is not causal. Law is not neutral but rather determined by the social formation producing it. The legal epicentre of the relations of production in contemporary capitalism is not a net of private contractual agreements, between workers and capitalists. Even changing the nature, the form, even the contents of the contracts (e.g. extending employees benefits to every worker, which would be a great improvement), the overall course of events will not change. This is demonstrated by the way digital capitalists won in 2020 an important political battle in the US. In 2019, California passed the Assembly Bill 5 (2019); it was a major victory for those advocating for the implementation of the ABC test as a way of combating worker’s mislabelling as contractors. It took effect in January 2020, just to be overruled 10 months later by the corporate-backed Proposition 22, which legalised the worker-unfriendly previous status quo (Siddiqui and Tiku, 2020).

The ABC test is one of the declinations of the liberal fallacy that existing law can be adapted or extended (or reinterpreted) to address the problems of the digital proletariat. In order to determine the legal status of the worker as employee or contractor, the test looks at something as ethereal as ‘the employer's control or direction in performing the work’. Digital capitalists have been able to game labour legislation, both using East Coast Code and West Coast Code, ‘the code that code writers “enact”’ (software) (Lessig, 2006: 72). Creativity does not remove the exploiter. A judge in Valencia (Spain) put on paper what is obvious to workers, clients, and the general public: ‘the true means of production in this activity are not the bicycle and the cell phone that the delivery person uses, but the digital platform for matching supply and demand owned by the company, outside of which the provision of the service is not feasible’ (Pitarch and Marco, 2019).

The main issue with the legal liberal mind-set is that, deep, rich and thorough as it is, it is limited by the burdens of the capitalist legal form. And this impedes liberal lawmakers and scholars in their ability to realise that the central aspect of the relations of production is the production process itself. The working class’ material conditions won’t change until power relations in contemporary spaces of production change as well. The only way to deal with the exploitative nature of labour is by thinking from a non-capitalist epistemology.

#### Subsumption DA: The perm subsumes the alt’s radical potential. Means at best the perm can’t solve and at worst it’s a new unique link because they actively re-engineer debate for data extraction.

Hall, 20—Professor of Education and Technology, De Montfort University (Richard, “Platform Discontent against the University,” *The digital age and its discontents: Critical reflections in education*, Chapter 7, 127-130, dml)

However, inside the University, technology is used to re-engineer academic work, in terms of teaching, research, scholarship and administration, through processes that Marx (2004) referred to as formal and real subsumption. These processes enable capital to take control of previously unproductive sectors of the economy, to focus upon value-production. This occurs in two ways: first, as sectors or organizations are re-purposed so that the conditions of work generate value, in absolute terms—for instance, by lengthening the working day; and second, as sectors or organizations are transformed through organizational development or technological deployment, in order to generate value in relative terms. As sectors become more competitive and the terrain for accruing surplus value becomes more difficult, mechanisms like increasing the hours of work cannot generate enough value. As a result, capitalist businesses look for increases in productivity, in order to drive surplus. One issue here is that capitalists are competing for relative amounts of the total social capital realized as profit. If the global economy slows, surpluses stagnate and profitability reduces, the competition becomes more intense. This is one potential mode for analysing the MOOC agenda and the focus of universities in working in joint ventures with educational technology firms, hedge funds, publishers and so on (see Shanley, Swierstra & Wyatt, Chapter 11, in this volume).

Thus, the idea that academic work might be infused with humanism is framed by the recalibration of universities in the sector as a whole, through competition that includes: the generation of knowledge as a commodity for exchange; research outputs as private property; capturing and retaining student numbers, grounded in new forms of student finance; and the deployment of new technologies to drive teaching and administration efficiencies. Technology-driven recalibration enables labour-time to be reduced in principle. In practice, it becomes the most unfailing means for turning the whole lifetime of a worker and [her] family into labour-time’; enforces the metronomic control of the ‘motion of the whole factory’; separates ‘the intellectual faculties of the production process from manual labour’; and, is ‘continually transforming not only the technical basis of production but also the functions of the worker and the social combinations of the labour process’. (Marx 2004: 531–532, 546, 548, 617)

Crucially, even for academics notionally working in a privileged profession, under capitalist social relations, technology totalizes proletarianization as a form of ongoing immiseration. This forces the individual academic onto a treadmill of constantly needing to upgrade their human capital, in order to generate commodity skills that can be valorized inside competing departments or institutions (Newfield 2010). Whether they can generate these skills or not, they are partially developed individuals, precisely because they become subordinated to the production of ‘objective wealth, in the form of capital, an alien power that dominates and exploits’ (Marx 2004: 716). Processes of proletarianization include the routinized nature of teaching and research, the imposition of technology-mediated, menial tasks and the reduction of intellectual work to standardized processes. This creates a field of exploitation, inside which the academic is continually alienated from their labour-power and the conditions under which they work (Hall 2018). On an everyday basis, an expanding global circuit of alienation reproduces exploitation, in order to generate relative surplus value.

Thus, academic labour is subsumed under a global production machine, and is further conditioned by policy-discourses. This machinery disassembles existing flows of labour, finance and technology, and reassembles them for profit (Deleuze & Guattari 1983). In this way, capital enforces humanmachine interaction as a means to parasitize labour (Wendling 2009: 100). The conditioning of this machinery is important for the widening circuit of alienation that reproduces exploitation. As technologies are reconceptualized as platforms, this circuit is widened out beyond institutions and sectors. Platforms enable users or audiences to be exploited in the production of services that can be commodified, such as the production of educational content or the grading of assessments, or from which rents can be taken in the consumption of those services. In these modes of production, there is a clear division of labour and hierarchy of control, rooted in precarious employment and the need to have ready access to commodities. Moreover, the platform enables controlled access to those services through mediations of commodity-exchange and private property.

These approaches are legitimized at the level of society, through the normalization of platforms that drive cost-efficiencies in transport, hospitality and accommodation. Thus, determinist narratives of technological progress elide with liberal ideas of equality of opportunity and freedom of access, underpinned by free markets and performance data (Feenberg 1999). Any political refusal of these economic narratives (for instance, in support of academic freedom) tend to be met by cries to reform the sector, based on discourses of efficiency and productivity. Moreover, these narratives amplify intersectional and intergenerational injustices because they reinforce hegemonic norms of excellence, entrepreneurialism and impact that are white, male, ableist and heterosexual, and which enable specific aggregations of human capital (Boyd 2017).

Technology optimizes this across the terrain of academic labour because it structures governable spaces—for instance, through performance data that enables the comparison of individuals, subjects and institutions against imposed norms that are disciplinary. Technologies and techniques of governance optimize performance management and encourage certain behaviours, and this is given regulatory power over individual agency through institutional governance. Optimization is further amplified through new technological compositions, rooted in the idea of the platform, operating as a controlling, distribution infrastructure that mediates between contracting parties. This has been reified as freeing labour from capitalists, so that they can commission work directly (Pasquale 2016). There is a value-based ecosystem that surrounds the platform, emerging from the commissioning of work and the extraction of data about that work, in terms of the fluidity of activities. Drawing individuals to the platform, in order to monopolize data about suppliers and consumers is pivotal, in particular in generating predictive data about future behaviours.

This is important in the context of the University, because the generation of a controlled ecosystem for collecting rent based on the distribution of commodities and for the concomitant accumulation of data about those commodities, enables innovation in knowledge production, circulation and accumulation. In particular, generating analytics or large datasets enables dominant protocols and algorithms to affect learning and teaching, knowledge production and transfer, research impact and so on through cybernetic control (Lazzarato 2014). This offers the opportunity for HE providers to impose flexploitation through the creation of micro-activities or micro-commodities in relation to the production of curriculum content, research outputs, assessments and so on (Morgan & Wood 2017). This transforms academic work because new relations of production are realized in precarious, flexible and part-time contracts that enforce entrepreneurial work in multiple contexts upon individual academics.

A crucial, spill-over issue is that platforms tend to have an embedded epistemic privilege that is reproduced as data based on a specific political economic model, inside which specific users behaving in particular ways constantly provide optimizing performance data (Huws 2014; Srnicek 2017; see Barry, Chapter 5, in this volume). In this process of optimization, individuals have to enrich their knowledge, skills and capacities, and also their attitude and commitment to enrichment and their job, which becomes an alienating labour of love (Hall 2018). Thus, not only is work proletarianized inside the University, but proletarianization infects the academic’s soul. Thus, as Hall (2016) points out, in HE this tends towards the Uberification of the University, because knowledge becomes a commodity that is privatized rather than being a social good.

### Uniqueness—2NC

#### Total cybernetic takeover is possible within a decade as demand for emerging tech innovation increases.

Grinin, et al, 22—Senior Research Professor at the Laboratory for Monitoring of the Sociopolitical Destabilization Risks at the National Research University Higher School of Economics, Moscow, Russia, as well as the Deputy Director of the Eurasian Center for Big History & System Forecasting and Senior Research Professor at the Institute for Oriental Studies of the Russian Academy of Sciences in Moscow (Leonid, with Anton Grinin, Research Fellow at the Faculty of Global Studies, Moscow State University; Senior Research Fellow of the International Center for Education and Social and Humanitarian Studies, Moscow as well as Leading Researcher of the Volgograd center for Social Research, and Andrey Korotayev, heads the Laboratory for Monitoring of the Sociopolitical Destabilization Risks at the National Research University Higher School of Economics, MoscowSenior Research Professor at the Eurasian Center for Big History and System Forecasting of the Institute of Oriental Studies and Institute for African Studies, Russian Academy of Sciences, “COVID-19 pandemic as a trigger for the acceleration of the cybernetic revolution, transition from e-government to e-state, and change in social relations,” Technological Forecasting and Social Change, Volume 175, February 2022, 121348, dml)

Abstract

Among many influences that the pandemic has and will have on society and the World System as a whole, one of the most important is the acceleration of the start of a new technological wave and a new technological paradigm in the near future. This impact is determined by the growing need for the development of a number of areas in medicine, bio- and nanotechnology, artificial intelligence and others, which we denote as “MANBRIC convergence”. It is shown that the experience of dealing with the COVID-19 pandemic has confirmed that the final phase of the Cybernetic Revolution will begin in the 2030s at the intersection of a number of medical, bio, digital and several other technologies, with medical needs as an integrating link. Among the multitude of self-regulating systems in the economy and life (which, in our opinion, will flourish during the Cybernetic Revolution) socio-technical self-regulating systems (SSSs) will play a special role. Thus, COVID-19 becomes a powerful impetus not only in terms of accelerating technological development and approaching the final phase of the Cybernetic Revolution, but also in changing sociopolitical (and socio-administrative) relations in the forthcoming decades.

1. Introduction

1.1. Multidimensional impact of COVID-19

By now, there have been quite a number of articles about the coronavirus (COVID-19 pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)) and its effect on society (e.g., Atkeson 2020; Baker et al., 2020; L. Grinin 2020; Irshad 2020; Jasiński and Bąkowska 2020; see also further references below). In addition to research on possible strategies for dealing with the pandemic (including its consequences) and various medical aspects, many other issues are being studied, from economic consequences to the impact on the climate (Aslam et al., 2020; Belhadi et al., 2020; Brammer et al., 2020; Chakraborty and Maity 2020; Forster et al., 2020; Yoo and Managi 2020; see also below). So far, with the exception of the book by Klaus Schwab and Thierry Malleret "COVID-19: The Great Reset" (Schwab and Malleret 2020), the study of this new phenomenon still seems mostly unsystematic. However, one may argue that the COVID-19 pandemic can become an important driver of even greater changes (e.g., Brammer et al., 2020; Brem et al., 2020; Hofbauer and Komlosy 2020), whose nature and consequences, however, are still mostly unclear. We believe that the COVID-19 pandemic will significantly accelerate the processes that we have already discussed in our other works (Grinin, L., Grinin, A., 2015; 2016; Grinin et al., 2017a; 2017b; 2020; Grinin, Korotayev 2015, Tausch 2016). It will also speed up some other processes that deserve close attention.

The COVID-19 pandemic has significantly changed the public's focus; these changes are likely to persist for a long time. Ultimately, this may lead to significant technological transformations, which, in our opinion, are rather underestimated.

In the present article we would like to show that the COVID-19 pandemic has become a powerful trigger which will both accelerate technological development in medicine and other areas – especially in the ones forming the MANBRIC-system1 – and, at the same time, catalyze the convergence of these areas. This is greatly supported by the sharply increased demand for the development of a number of fields of medicine, bio and nanotechnology, artificial intelligence and others. In a series of papers, including ones on the pages of this journal (Grinin et al., 2017; 2020) we made some forecasts concerning a new technological wave making the final phase of the Cybernetic Revolution, which is likely to start in the 2030s to 2040s. In the present article, we refine our forecast, arguing with greater confidence that due to the COVID-19 pandemic, the final phase of the Cybernetic Revolution will begin in the 2030s, that is, in the next 10-15 years. The COVID-19 pandemic has not only confirmed our forecasts, but also allowed us to significantly refine and enrich them.

We also argue that among numerous self-regulating systems in production, economy and everyday life that will thrive during the final phase, the socio-technical self-regulating systems (SSS) will play a special role. With the help of AI, they will regulate a variety of administrative and social relations. During the pandemic, there appeared an urgent need for regulation of public life, which served as an impetus for the development of such systems. Meanwhile, the employment of socio-technical self-regulating systems will almost inevitably lead to a noticeable change in social and even political relations in society, shifting them towards e-government and e-state. The present article also devotes considerable attention to the analysis of the latter, while addressing such an issue as the rapidly growing threat to privacy and personal data.

Combining technological and social forecasts in a single study appears all the more important, since a systematic research of the relationships and interactions between the rapid development of various technologies, especially AI technologies, medicine and biotechnology, on the one hand, and social and political relations, on the other, unfortunately, remains insufficient. The COVID-19 pandemic has shown some mechanisms of such system connections, thus helping improve forecasts.

1.2. Research questions

In this article, we would like to focus on the problems of a possible acceleration of the final phase of the Cybernetic Revolution in connection with the COVID-19 pandemic. The beginning of the Cybernetic Revolution marks changes in technologies and the coming of a new technological wave when medicine, bio and nanotechnologies, AI and other technologies will play an important role. It also means an increasing influence of technology on social, political and other relations. In particular, the unfolding Cybernetic Revolution will be associated with the widespread introduction of self-regulating systems in production and a wide variety of services, as well as in everyday life. Self-regulating systems are systems that can function with minimal human involvement or without it (Grinin, L., Grinin, A., 2015; 2016; Grinin et al., 2017a; 2017b; 2020; Grinin, Korotayev 2015, Tausch 2016). Among the existing and future self-regulating systems, we pay special attention to what we designate as socio-technical self-regulating systems (SSS). These are technologies designed to regulate administrative and social relations in society through combining the AI with other technologies; in some respects, they are able to perform functions of administrative/ law enforcement bodies.

### Unsustainability—2NC

#### The continued expansion of the technosphere guarantees planetary immiseration and extinction. It’s try or die—any defense of the current system cannot account for the computational takeover of every sphere of life.

Mbembe, 21—research professor in history and politics at the Wits Institute for Social and Economic Research, University of the Witwatersrand (Achille, “Futures of Life and Futures of Reason,” Public Culture (2021) 33 (1 (93)): 11–33, dml)

Whatever the case, capital and markets must now be understood as magnetic fields as well as key determinants of the climate system on earth. Furthermore, whether the old distinction between the economic power of corporations and the political sovereignty of states still holds is more and more open to debate (Barkan 2013). Most global corporations aspire to secede from everybody else while exercising surveillance on everybody else. Their big dream is to be exempt from taxes and to be free from accountability; in short, to enjoy the kind of immunity and state of exceptionality we used to recognize only in truly sovereign powers. In a book about what she terms surveillance capitalism, Shoshana Zuboff (2019) argues that a global architecture of behavior modification is underway. Driven by powerful states, high-tech corporations, and military apparatuses, surveillance capitalism threatens what she calls “human nature” in the twenty-first century, just as industrial capitalism disfigured the natural world in the twentieth. She shows the extent to which vast wealth is accumulated in what she terms new “behavioral futures markets,” that is, markets where predictions about our behavior are bought and sold, and the production of goods and services is subordinated to new technologies of behavioral modification. Indeed, capital, especially finance capital, has become our shared infrastructure, our nervous system, the transcendental maw that nowadays maps out our world and its psycho-physical limits (Zuboff 2019). To the millennial properties Jean and John Comaroff highlighted at the start of this century (Comaroff and Comaroff 2000), capital has now blended the magnetic attributes I have referred to above.

Around us, it looks as if nothing escapes its control. Affects, emotions, and feelings, manifestations of desire, dreams, or thoughts—no sphere of contemporary life has been left untouched by the spread of capital. No sphere is shielded against its atmospheres, its radiation, and its charged particles. Capital now extends its grasp deep into the underbelly of the world (Konings 2018; Edwards, Becker, and Colwell 2012). Soon, mining companies will unleash their collection of vehicles on the seabed beneath international waters. They will

creep across the bottom in systematic rows, scraping through the top five inches of the ocean floor. Ships above will draw thousands of pounds of sediment through a hose to the surface, remove the metallic objects, known as polymathic nodules, and then flush the rest back into the water. Some of that slurry will contain toxins such as mercury and lead, which could poison the surrounding ocean for hundreds of miles. The rest will drift in the current until it settles in nearby ecosystems. (Hylton 2020)

Capital itself is now a magnetic field. In its wake, it leaves countless uninhabitable zones, vast fields of debris and toxins, waste heaps of humans ravaged by sores and boils (Jarrige and Le Roux 2017; Marder 2019). Now that everything is a potential source of capitalization, capital has made a world of itself: a hallucinatory phenomenon of planetary dimensions. Early twenty-first-century corporate sovereignty is therefore an unprecedented form of power, whose main aspiration is to free itself from democratic oversight. As a result, we might no longer live in an epoch when sovereignty was exercised by the demos (Brown 2015). Finance capital in the guise of a ubiquitous digital, extractive, and digestive architecture might have definitively become the new Leviathan (Bélanger 2018).

Techno-Molecular Colonialism

Meanwhile, unprecedented numbers of human beings are today embedded in increasingly complex technostructures, most of which are intervening in the dynamics of the earth system on a planetary scale. This has led to the transgression of planetary boundaries such as those related to anthropogenic climate change, degenerative land-use change, accelerated biodiversity loss, perturbation of the global biogeochemical cycles of nitrogen and phosphorus, and the creation and release of novel entities such as nanoparticles and genetically engineered organisms (Donges et al. 2017). It has also resulted in the acceleration of processes of metamorphosis, decay, and extinction. Take, for instance, the metabolic life of whey powder, a pollutant in waterways and a multiplicitous substance used over the past two decades as a protein supplement in a multibillion-dollar industry. As demonstrated by Samantha King and Gavin Weedon (2019), whey pollution has long been the effect of the systematic overproduction endemic to agrofood industries. Whey's toxicity is known to persist through processes of metabolism and consumption. This not only highlights the co-constitutive relations between bodily matter and ecological life, and their entanglement with processes of commodification (King and Weedon 2019); it also shows the extent to which the technosphere is a part, or an extension, of the biosphere. Flows of matter, energy, and information are combined into complex networks and intricate webs of interactions. As a result, the body and flesh of the world is expanding. In the process, the earth is being redefined in a way that binds all species together: humans, technology, animals, fungi, plants, viruses, bacteria—the same life in disparate bodies (Laubichler 2019).

Over the last decade, numerous algorithmic forms of intelligence have been developed (Amoore and Piotukh 2020). Many are inspired by the natural world and by ideas of natural selection and evolution. Such is the case of genetic algorithms—a subset of evolutionary algorithms that “mimic actions inspired in biological operators, such as cells.” They “seek to optimize the responses to the problems of their environments by self-generating, and encompassing processes of mutation and natural selection” (Pasquinelli 2015). As Margarida Mendes (2017) powerfully argues, a shifting redistribution of powers between the human and the technological is unfolding. Technologies, in turn, are increasingly tied both metabolically and reproductively into complex networks of extraction and predation. Mendes shows the extent to which the genetic codes of humans, plants, and animals are being cracked and disseminated. This, in turn, is giving way to an exponential rise of biological patents. The human genome is in the process of being privately owned.

Life itself is more and more perceived as a commodity to be replicated under the volatility of market consumption. Mendes goes on to show how thousands of new molecules whose behavior cannot be predicted are produced and released into the ecosystem. Seeds, chemical herbicides, GMOs, and pesticides are patented by a handful of multinationals, she adds. Through widespread genetic modification of key elements in the food chain, corporations are intervening directly in the natural cycles of life and ecosystems. Patented GMO genes are absorbed into human bodies and the bodies of various other species, turning the latter into infrastructures and inscribing them into a proprietary relationship of biological subjugation, she concludes.

As algorithmic forms of intelligence grow in parallel to (and often in alliance with) genetic research, the integration of algorithms and big-data analysis in the biological sphere brings with it a greater belief in techno-positivism. More and more, statistical thought, regimes of assessment of the natural world, modes of prediction, and analysis treat matter and life itself as finite and computable objects. The idea that life might be an open, nonlinear, and exponentially chaotic system is increasingly behind us. We seem to have reached a point where the market is reimagined as the primary mechanism for the validation of truth. Since markets themselves are increasingly turning into algorithmic structures, the only useful knowledge today is supposed to be algorithmic. Instead of actual human beings with body, history, and flesh, big data and statistical inferences are all that count, and both are mostly derived from computation.

Through big data in particular, surveillance is expanded into the emotional registers of domestic and embodied experience. As Kirstie Ball and William Webster (2020) have argued, a nexus of the potential of analysts, the data practices themselves, and the newly configured intimate spheres is increasingly drawn into the commercial value chain (Ball and Webster 2020). Data extraction is itself a political economic regime driven by the perpetual cycle of capital accumulation (Sadowski 2020).

For Matteo Pasquinelli (2015), algorithmic reason is a form of rationality whose end is the understanding of vast amounts of data according to a specific vector, the recording of emerging properties, and the forecasting of tendencies. To some extent, the metadata society is characterized by the “accumulation of information about information.” Algorithms also mine metadata for the purpose of establishing patterns of behavior, detecting anomalies, and recognizing an enemy. The enemy is constructed as a reality via statistics, modeling, and mathematics. Power, thus, is increasingly about identifying patterns or connections in random data, in a context in which the opposition between information and knowledge, knowledge and data, data and image, and thinking and seeing appears to collapse.

Power, detection, and surveillance are nevertheless not all. Algorithms are interwoven with a multiplicity of relations and heterogeneous things, be they data, bodies, or objects (Amoore 2020). In this sense, they are in themselves a negotiated process. Their power derives from their capacity to dynamically combine and recombine them and in so doing to reconfigure different social and material heterogeneities (Burke 2019; Lee and Björklund Larsen 2017). How they fold and unfold these relations, and with what effects, is an open-ended matter.

Computational and algorithmic logic is now found at the very source of general perception. As a result of the conflation of knowledge, computation, and markets, contempt has been extended to anyone who has nothing to sell and nothing to buy, or anything that cannot be bought and sold. It is therefore correct to argue that there is a shifting distribution of powers between the human and the technological, in the sense that technologies are moving toward “general intelligence” and self-replication. They are being granted the powers of reproduction and independent teleonomic purpose rather than having them taken away.

Key to life futures is therefore the extent to which technological escalation has redefined the nature of speed, unshackled markets, and the economy. Important, too, are the ways in which various technological devices constantly monitor our behavior in attempts to reveal how it could be modified and optimized. As a matter of fact, some of the fastest-expanding markets in the world today are “markets for future behavior.” They rely on better understanding incipient future intent. This could be future voting intentions. It could also be the intent to commit fraud, the intent to buy life insurance, or the intent to stream a specific video (Amoore 2019). These markets also rely on the extraction and mining of new forms of raw material. Such raw material mostly consists of information and details about individuals’ behavior taken, as Zuboff (2019) writes, from the distant corners of our unconscious. It is raw material plumbed from intimate patterns of the self—our personality, our moods, our emotions, our lies, our vulnerabilities, every level of our intimacy (Zuboff 2019; Illouz 2007). The purpose is not only to heighten the predictability of our behavior. It is also to make life itself amenable to datafication.

A key feature of our times is therefore the extent to which all societies are organized according to the same principle—the computational. We are surrounded by ubiquitous computing, technologies that weave themselves into the fabric of our everyday lives; these devices, sensors, and other things we interact with have become part of our presence in the world all the time. How the boundary between us and these devices is enacted is a matter of open debate (Matzner 2019).

But what is the computational? The computational is generally understood as a technical system whose function is to capture, extract, and automatically process data that must be identified, selected, sorted, classified, recombined, codified, and activated. Yet we shouldn't forget that the computational is also a force and energy of a special kind, a speed regime with its own qualities and infrastructures. It produces and serializes subjects, objects, and phenomena; splits reason from consciousness and memory; and codes and stores data that can be used to manufacture new types of services and devices sold for profit.

Whether operating on bodies, nerves, material, blood, cellular tissues, the brain, or energy, the aim is the same: the conversion of all substances into quantities; the conversion of organic and vital ends into technical means; the capture of forces and possibilities, and their annexation by the language of a machine-brain transformed into an autonomous and automated system (Friederich 2020; Perény 2013). The computational is also the institution through which a common world, a new common sense, and new configurations of power, perception, and reality are nowadays brought into being. The globalization of corporate sovereignty, the extension of capital into every sphere of life, and technological escalation in the form of the computational are all part of one and the same process.

The Dialectics of Entanglement and Separation

The third megaprocess is what we should call the dialectics of entanglement and separation. All over the world, the combination of fossil capital, soft-power warfare, and the saturation of the everyday by digital and computational technologies has led to the acceleration of speed and the intensification of connections, creating a new redistribution of the earth and of population movements. To be alive, or to remain alive, is increasingly tantamount to being able to move speedily.

In the process, the human race has come up against terrestrial limits. Such limits are not only the consequence of the sphericality of the planet. They are also limitations on the expansion of life as such. As the planet increasingly seems bound to burn, it is not only individuated bodies that are imperiled. It is earthly existence, the fate of everything on earth, the fluidity of life that is at stake (Pyne 1995; Parisi and Terranova 2000).

## Backshelf

### Link—AI—Competition/Leadership/Primacy

#### AI dominance is neo-Darwinian digital colonialism.

Adams, 21—Information Law and Policy Centre, Institute of Advanced Legal Studies, University of London (Rachel, “Can artificial intelligence be decolonized?,” Interdisciplinary Science Reviews, 46:1-2, 176-197, dml)

In the totality of its machinic, computational, and imaginary manifestations, Artificial Intelligence is structurally, systematically, and psychologically altering not only local and global society, but what it means to be human, or, to be counted as such. Accounts such as James Williams’ on the attention economy that detail how digital technologies function at a neurological level to capture and coax human impulses (2018); Brett Frischmann and Evan Selinger’s analysis of how AI will not replace humanity but rather re-engineer us as computable (2018); and Shoshana Zuboff’s work on surveillance capitalism that explicates a new world order where human behaviour has become the commodity of capitalist extraction (2018), all provide examples of how advanced technologies associated with AI are working at deep and complex levels in ways that are radically redefining what it means to be human.

Yet none of these texts, which constitute some of the leading work in the field, take into account the complex genealogy of intelligence: whose conception of intelligence is modelled within technology or how the idea has been put to work in dividing people between the desired and the undesirable. Nor the history of the human body as machine and commodity borne from slavery and colonialism, such that Achille Mbembe names blackness as the prototype for the assemblage of the human–object of modernity (2017, 2019). Nor the ways in which the knowledges upon which AI is built – statistical enumeration of people and land – were advanced by imperial powers to control and contain colonial populations (Appadurai 1993; Breckenridge 2014; Kalpagam 2000, 2014; Said 1978), and led to the development of cybernetics and eugenics, as well as the idea that, through feedback mechanisms, both human and machine can be corrected and improved.

Indeed, for Mbembe we are encountering a third shift in the arrangement of race and blackness in global society: the first being slavery and colonization; the second being the development of writing and text, culminating in the formal processes of decolonization; and the third being the advent, proliferation, and ubiquity of digital technologies which represent the latest phase of highmodernity (2017). Similarly, for Aníbal Quijano, we are reaching a watershed moment in the global coloniality of power, with ‘the manipulation and control of technological resources of communication and of transportation in order to impose the technocratization/instrumentalization of Coloniality/modernity’ (2017, 364), together with ‘the mercantilization of subjectivity and life experiences of individuals’ (2017, 365).

AI, too, is in the midst of reconciling three forms of discontent,1 whose relation to the forms of coloniality and the historical construction of race at work in the world today has yet to be fully understood. First, manifest racial and gender bias within AI technologies (Benjamin 2019; Buolamwini and Gebru 2018; Keyes 2018; Noble 2018). In June 2020, E. Tendayi Achiume, United Nations Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia, and related intolerance, issued a report to the United Nations Human Rights Council that found ‘emerging digital technologies exacerbate and compound existing inequalities, many of which exist along racial, ethnic and national origin grounds’ (paragraph 4). The second discontent, echoing Quijano’s description of the mercantilization of life, regards the way AI and digital technologies are globally commoditizing human experience (Zuboff 2018). Within this data paradigm, the human is substituted as an assemblage of their data points which are, in turn, taken as a sign of the real (Baudrillard 1994). The third discontent is geopolitical, pertaining to the emergence of an arms race characterized by the ambitions of transatlantic nation states to be ‘global leaders’ (Vladimir Putin, cited in Vincent 2017) in AI innovation (Garvey 2019).2 This, together with the second discontent, is central to the ideas of ‘data colonialism’ and ‘digital colonialism’ naming, within current AI discourse, the brazen flurry to extract and exploit personal data and data systems (Birhane 2019; Couldry and Mejias 2019; Crawford et al. 2019; Ricaurte 2019; Mhlambi 2020). It relates as well to Ian Hogarth’s critique of ‘AI nationalism’ where new dependencies are being tacitly enforced between low-tech and advanced-tech states and are set to follow the historical divide of Global North/South (2018). Perhaps more critically, the drive to dominate in the production and use of AI is revealing of the project’s hegemonic impulses, and the neo-Darwinian linearity of the evolution of science which will ‘leave behind’ those who do not conform to catching up. In light of these concerns, Mbembe’s provocation to critique the apparatuses of race and blackness in digital technologies, and Quijano’s warning against the hegemony of technocratization which encompasses, at once, the consolidation of modes of commodification of the human-object, becomes ever more urgent.

### Link—AI—Ethics/Governance/Norms

#### Their appeal to new ethical norms for AI governance epistemologically figures the West as the colonial master of the planet.

Adams, 21—Information Law and Policy Centre, Institute of Advanced Legal Studies, University of London (Rachel, “Can artificial intelligence be decolonized?,” Interdisciplinary Science Reviews, 46:1-2, 176-197, dml)

In 2019, a study was published in Nature identifying over 84 ethical standards for the use and development of AI developed globally in the last five years (Jobin, Ienca, and Vayena 2019; Ulnicane et al., this issue). Despite being titled ‘The Global Landscape of AI Ethics Guidelines,’ amongst these 84 AI ethics standards, none listed are from the African continent or even the Global South. Most were developed in the United States, UK or by international institutions. Mohamed, Png, and Isaac (2020) similarly note how national AI policies or strategies are almost exclusively found in the Global North, and where efforts to develop a national policy around AI are arising in countries within the Global South, this is being driven by supra-state bodies such as the World Economic Forum. As ethical benchmarks, these standards are paternalistically positioned as universal: applicable for all, everywhere. In addition, the scientific practice of promoting ethical AI through strengthening or testing the ‘fairness’ of AI systems (the extent to which they exhibit social biases, in particular) performs a similar conceit in presuming the scene of the Global South – or more specifically in this case, the African region – to be a place where ‘ethics,’ as such, is yet to be fully established. Now a well-documented case (Ballim and Breckenridge 2018; Arun 2020; Arun 2020), in 2018, when the issue of racial bias and the non-recognition of Black faces by AI-driven facial recognition technologies was peaking following the work of Buolamwini and Gebru (2018),13 a Chinese facial recognition company signed a deal with the Zimbabwean government for access the records of the national population registry, which contained facial imagery of millions of Zimbabweans, to train the company’s algorithmic technologies to better recognize Black faces. By reducing the potential for bias, the system would ultimately be more ethical. While Ballim and Breckenridge (2018) condemn this incident for exploiting the inadequate data protection provisions in Zimbabwean law, it is not all that different from the practice of beta-testing newly developed AI systems in African countries (Mohamed, Png, and Isaac 2020). Calling it ‘ethics-dumping,’ Mohamed, Png, and Isaac point to the notorious company Cambridge Analytica as exemplar, in that it developed algorithmic systems for use in the US and UK by beta-testing them in Nigeria and Kenya (2020, 11). This follows the now centuries-old colonial conceit of what Jan Smuts euphemistically called the ‘laboratory of Africa’ (1930), where the collateral damage of scientific advancement could be safely externalized to places and people considered expendable (see Bonneuil 2000; Tilley 2011; Taylor 2019). Moreover, the epistemological foundations of AI cannot be extricated from Francis Galton’s work in the development of statistics – particularly on inference, regression, correlation, and the normal distribution curve – which arose out of his explorations in Southern Africa, where he applied his statistical science to native populations in order to measure human differences and intelligence (Breckenridge 2014, Chapter 1).

In these instances, the idea of ‘ethics’ is situated as the supreme value of the Occident, to be proselytized on the Africa region, which is, in turn, and in relation to the ‘ethical West,’ positioned as ‘pre-ethical’ (Mbembe 2017, 49) – as a world apart. Indeed, that Europe believed itself to be ‘helping’ and ‘protecting’ its African colonies constituted the central creed of the civilizing mission of colonialism (Césaire 2001); as Spivak reminds us, ethics ‘served and serves as [its] energetic and successful defense’ (1988, 5). Yet as ethics was put to work to justify both the civilizing mission of colonialism and the utilization of Africa as a laboratory for Western scientific progress, it enacted another conceit of the colonial order of things: that Western reason is neutral, universal, and objective; that it could be dislocated from the context in which it arose and applied elsewhere. Positioned as a ‘point zero’ (Santiago Castro-Gomez unpublished work, cited in Grosfugal 2011, 6) from which to survey the world, Western knowledge and rationality claimed ascendency as the only real way of knowing and understanding the world. This is a critical problematic within decolonial thought (Grosfoguel 2007; Ndlovu-Gatsheni 2013), and a central assumption within AI: that intelligence and the production of knowledge can be outsourced to a machine presupposes such knowledge to be both separable from the context in which it was produced and applicable to other contexts and realities.

### Link—AI—Generic

#### The aff removes the final barrier to the cybernetic takeover of warfare.

Ford and Gould, 21—Senior Lecturer in International Relations at the University of Sussex; Lecturer in the Future of Conflict in the Defence Studies Department at King’s College London (Matthew and Alexander, “From warrior geek to prototype warrior: entrepreneurialism, future war, and the emergence of twenty-first century civil-military relations,” Digital War, Volume 2, 35–50 (2021), dml)

Armed forces across the world are now engaged in a race to exploit the technologies emerging from the fourth industrial revolution.1 The application of AI in military affairs is one example; the use of Artificial Intelligence (AI) to sift and analyse data patterns raises the possibility that strategic level military decision making might be sped up, and if AI can be repurposed for battlefield equipment, it might become possible to remove humans from targeting loops and create fully autonomous weapon systems. Both of these applications could have the potential to ‘becom[e] critical force multipliers in future military capabilities’.2

Despite their ambition, defence establishments have nonetheless struggled to develop and implement these technologies on their own. Innovation in AI is primarily being developed by private sector companies like Google, Amazon, Apple, IBM, Microsoft and Facebook (Webb 2019). Unfortunately for the US military, several of these Silicon Valley businesses, including Google, have balked at the possibility of working on defence contracts.3 However, as Eric Schmidt observes, the AI systems that might help make sense of the vast amounts of data that organisations like the US Department of Defense (DoD) collect cannot be made to work without accessing commercial enterprise-wide cloud computing in complex information stacks.4 Problematically, the skills necessary to develop state-of-the-art information stacks have not been readily available within American or NATO governments.5 As a result, a number of niche entrepreneurs backed by venture capital or recently floated businesses have sought to fill the gap and work through the challenge of applying AI to defence data.

In trying to develop solutions to these challenges it has become apparent to Silicon Valley businesses like Anduril that traditional models of government bureaucracy must be redesigned to account for activities focused on software rather than hardware.6 At its simplest, this might start with changing procurement practices away from buying platforms and the associated technical support to instead acquiring subscription services from defence innovators wedded to constant cycles of software upgrades and deeper levels of systems integration. As these changes become more sophisticated government business models can be redesigned to use ‘data analytics specialists [to] help [government] more rigorously evaluate policy successes and delivery failures’.7 This presents opportunities for those Silicon Valley businesses who are prepared to work with defence and help redesign government around the collection, analysis and exploitation of data (Christiansson 2018). The shareholder benefits that might be realised by these changes has led Palantir, one of the largest mainstream companies willing to work with defence, to state in their 2020 Initial Public Offering that a key goal was for their software to ‘become the default operating system…across the U.S. government’.8

Leveraging innovations in AI for military purposes does therefore imply the remodelling of government bureaucracy. On the face of it, this appears to reflect longstanding trends in organisational change and the adoption of new technology. It is our contention, however, that these changes demand a more detailed reflection on the complex, opaque and poorly understood information infrastructures that underpin military culture and civil-military relations (CMR). Benjamin H. Bratton, for example, argues that relations between systems, service providers, technologists and the underlying hardware constitute ‘alternative geometr[ies] of political geography’. These, he contends must be mapped if the power relations of these new ‘information infrastructures’ are to be rendered transparent (Bratton 2016; Bowker et al 2010). Taking our cue from Bratton, this article looks to map these alternate geometries of power as framed by CMR and the emerging sets of practice that have come to knit together defence establishments and high-technology industries in military innovation. In doing so, we point towards a new potential ‘gap’ (Rahbek-Clemmensen et al. 2012) in CMR, one where military innovation is forging a new martial culture that has the potential to place strains on the legitimate use of armed force (McDonald 2021).

### Link—Biotech—Environment/Resources

#### Narrativizing biotechnology as humanity’s savior legitimizes a global biopolitics that understands life through the prism of technical control.

Tamminen and Deibel, 19—Adjunct Professor of Science and Technology Studies (Anthropology of Science and Technology) at the University of Helsinki; lectures STS to engineering students at Bilkent University (Sakari and Eric, “Recoding life: information and the biopolitical,” *Recoding Life: Information and the Biopolitical*, Chapter 1, 3-7, dml)

The recent developments in genetic engineering tools, knowledge, and their use in improving species of life are only the logical continuation of the historical trajectory of biology and biosciences. Gradually the question about finding the ‘truth’ about life has shifted toward a question about the utility of such techniques in making life forms perform a particular task in a more efficient, optimised way. This is a result of ‘the century of the gene’ ( Fox Keller 2000 ), brought to us via new innovations for the manipulation of life both intra-cellular and extra-cellular and through particular biopolitics reframed around the optimisation of not only the individual and the species but the way in which individuals and species develop, perform, and regulate themselves (or not). Such biopolitics targeting life not as it is but how it should be is a question of interests, or, rather, it is a politics of interests that fundamentally defines how the ‘code of life’ will be compiled and executed at intra- and extra-cellular levels across species and taxa (see Foucault 2002 ).

This book examines how genetic engineering, synthetic biology, and different life forms being generated constitute the emerging forms of life of the early twenty-first century’s global culture ( Fischer 2003 ). Here, ‘life’, and truth about life, is increasingly verified within a field of competing interests where their value and utility is premised on the fading of species bodies and their borders. Accordingly, bodies of knowing, their techniques, their governance, and the very ways of speaking about life and its representation are reshaping the capacity for optimisation and their exchange value, many times called the sphere of the neoliberal ‘bio-economy’ or, occasionally, biocapitalism (see Sunder Rajan 2006 ; Cooper 2008 ; Helmreich 2008 ). Life in the form of informational media ( Thacker 2003 ) should be understood as a newly framed matter of concern ( Latour 2004 ) that arises from how bio-objects are being assigned vital functions and powers holding utility value and, therefore, potential value in exchange ( Vermeulen et al. 2012 ).

All this is true, yet the framing and regulation of such emergent forms of life is always already a subject of a global politics of interest, wherein power is negotiated through particular configurations entrenched in the deep will to explore the limits of life’s value. This signals a regenesis not only of life but of a global biopolitics co-constituted through the metacodes of life: revealed through its discourses, techniques, circuits, and their intersections alongside the interactions that support particular types of forms of research, exchange, and governance.

Exploring metacodes

The idiom of exploration is omnipresent throughout the life sciences, and there is always a multiplicity of objectives to accomplish and at stake. Crucially, the question of life – molecular, genetic, synthetic, and beyond – is fundamentally unstable. An example of this is how these objectives are imagined by the authors of the breakthrough report on the completion of the map of the human genome. In their celebratory article announcing the complete map, the International Human Genome Sequencing Consortium on Initial Sequencing and Analysis of the Human Genome quoted T.S. Eliot’s Four Quartets (15 February 2001, Nature 409). Looking beyond their publication on the human genome, they concluded:

Finally, it has not escaped our notice that the more we learn about the human genome, the more there is to explore: We shall not cease from exploration and the end of all our exploring will be to arrive where we started. And know the place for the first time.

As expected, the initial completion of the map did not end the exploration. Instead, the decade and a half that has passed since has shown an exponential growth in mappings: numerous species of mammal, plant, bacterium, and so forth or microbial genomes containing billions of base pairs have been charted and mapped into databases. Moreover, the practise of mapping as a means of generating ‘basic knowledge’ has turned into a practise of modelling the increasingly complex behaviour of genes, proteins, and cells. Laboratories and infrastructures around the world are expanding, facilitating the exchange of information, instantaneously, for diverse purposes, in what is best characterised as an industry informed by biological science and seeking to re-materialise the information through genetic engineering.

Therefore, it was certainly appropriate that the authors of the report claimed that there is always more to explore, but what they suggest is that the end is ‘to arrive where we started’. This refers to the subject of the exploration as life itself: its inner workings mapped and revealed by science imagined as a domain with a beginning that always already was an end in itself. In this sense, the advance of the life sciences moves from an ahistorical past towards a horizon that is constantly being reached, moving towards the realisation of the promise of a future in which technique subdues life and nature. Such an exploration goes onwards (there is always more to explore) as if it is only a matter of time before the furthest extent of knowledge arrives where it started: it is premised on a transhistorical understanding that is a crucial feature of what we call the metacode of life . In a sentence, the metacode of life refers to the centrality of DNA in informatic formats as the condition of the contemporary politics of how the biological informs the digital and vice versa .

Maps are powerful techniques for representing worlds or spatiotemporal configurations of specific relationships between human and other beings that are not created out of nothing or only life itself. Maps are exemplary, as already observed by Donna Haraway when she stated that ‘maps are models of worlds crafted through and for specific practices of intervening and ways of life’ ( Haraway 1997 , 135). In this sense, the exploration imagined by the authors of the report on the human genome project – whose aim ‘to arrive where we started’ – suggests that once ‘life’s inner workings are mapped and revealed by science’, biology as the logos of bio will have been transformed, questioned, re-articulated once again. We will mark such transhistorical understandings as metacodes of life , as a starting point and structure from which to rethink DNA as information and embodied forms as they are explored and mapped in ways that mediate spaces, relationships, and actors through time.

The citation that marked the completion of the map of the human genome is particularly telling, as its lines taken from T.S. Eliot’s Four Quartets refer to Dante and his story about the emissary of the living who was guided by Virgil and Beatrice among the dead. The passage cited underscores the continuous nature of exploration and refers to a mystical interconnection of the past, present, and future. Such a perspective on the first completed map of the human genome implies an exploration that similarly breaks free from the boundaries of previous journeys. In this case, it is an exploration of ‘the human’ and its ‘limited-edition formats’ such as the ‘body’. The analogy changes the kind of exploration and what is at stake. It includes Inferno, Purgatory, and Paradise rather than an easy choice between heaven and hell or between salvation through the inventions of the life sciences and damnation through genetic engineering becoming like Frankenstein: ‘a thing such as even Dante could not have conceived’ (Shelley [1818] 2006 , 61).

We are told, again and again, about how new technologies will deliver us more food, health, and wealth and improve the soil, even the weather. Soon everyone will win, when the life sciences realise their promise as drivers of knowledge economies – as a global bio-economy; a knowledge-based bio-economy; a biobased economy; or similar arrangements wherein ecology, economy, and biology find each other. Following these guides means that we are presented with a journey that is about genetic exploration that has as its end a sustainable future that is reached by realising the long list of innovations in every imaginable area that will guarantee employment and sustainability without compromising our agricultural productivity, global food security, focus on renewable energy, and potential solutions to climate change (see Chapter 7 ).

Sometimes this type of ‘end’ to the exploration is presented as a myth of origins: a return to the mists of time when everything was always already ‘bio-based’ rather than the fossil resources that power today’s industrialised civilisation. This is a painting of a lost Arcadia wherein only biological resources were used for food, shelter, transportation, and so on (see Veraart et al. 2011 ). Mostly, however, historical continuity needs to be re-established in the present, which invariably means that the commercialisation of the biological sciences is a premise for the extensive wish list attached to the usage of sustainable and renewable biological resources. On one hand, the ‘end’ of the exploration is taking on the shape of a comprehensive alternative, with the life sciences as the driver of a systemic transition to a world wherein societies are revitalised after suffering economic crises, along with their citizens, who are in harmony with themselves, each other, and natural environments.

On the other hand, the counter-narratives mirror the increasing magnitude of the story, as found in many of the policy documents on the life sciences and the knowledge economy. Instead of harmony and the unity of science, society, and nature, this is a discourse of conflict and competition looming in the near future, when resources (such as water and land) will be at stake, new sectors will displace others (as with fuel and food), and the fortune of nations might need to be guaranteed by various means as entire continents surge ahead or fall behind (discussed in Chapter 7 ). Underneath the heavenly vision of new biological, economic, and ecological harmony we find a hell that is populated with the same characters that are held responsible for the loss of nature’s integrity: new monocrops, big pharma, big data, and the plundering of biological wealth.

While two diametrically opposed conclusions are being drawn in looking at the biological future, both are narrated as a sweeping and dramatic epic with geopolitical consequences. In this sense, they are perfectly symmetrical in their focus on the need to overcome planetary constraints and in their agreement about how humans will have to act as a species, and at a scale that matches that of the numerous global crises of the present. At the centre of both stories we find a reverence for the desire and drive to overcome whatever limits there are to life as a technological creation and to redesign species bodies at will. After all, each appeals to a ‘return to nature’, which assumes that the journey has an end that, whether good or bad, is premised on a logical coherency that is simply not there, neither in the knowledge about DNA nor in the political philosophies about the natural world and human nature (see Hayles 1999 ; Žižek 1999 ; cf. Fukuyama 2002 ; Habermas 2003 ).

What could be more appropriate for the contemporary life sciences than how an emissary of the living is guided through the rings of hell, purgatory, and heaven? Certainly, the guides are different, but even without Dante and his guides, the end to the exploration is still a cosmological order wherein everything is assigned the right place – this time being reconfigured biologically, genetically, or by informatic patterns encompassing all living beings. Once again we get to bear witness to a renewal of practises of identifying, observing, classifying, ordering, representing, analysing, redoing, and rerouting life and death, the living and the non-living. This time we follow guides who suggest that there is a new era of techniques of life, thereby establishing a type of continuity that spans from Dante’s vision to today, passing by Diderot’s Encyclopédie and more recently Wikipedia and the human genome as a repository of knowledge of what humans are. Each in its own way has been an effort to incorporate all of the knowledge scattered over the surface of the earth, showing a continuity in technique, skill, tools, and techné – each pointing to technology as an enduring part of what it means to be Homo sapiens , as individuals and as a species.

### Link—Biotech—Generic

#### The aff facilitates the global transformation of bodies into biomedia.

Tamminen and Deibel, 19—Adjunct Professor of Science and Technology Studies (Anthropology of Science and Technology) at the University of Helsinki; lectures STS to engineering students at Bilkent University (Sakari and Eric, “Read, write, standardise,” *Recoding Life: Information and the Biopolitical*, Chapter 3, 34-36, dml)

In the late 1960s, Marshall McLuhan proclaimed that in a near future – in a future that resembles to a terrible degree our global contemporary present – the narcissist tendency of humankind to continuously seek the most perfect image of itself would drive the species toward existential discontent. According to McLuhan, this narcissist appetite would drive a desire to seek a constant ‘upgrade of the self’, which, in turn, would lead to an anthropological narcosis manifested through a numbness of the primary senses. This numbness, then, would be a consequence of the different technologies developed to extend our senses beyond what the body normally would be capable of doing, experiencing, and expressing. His underlying suggestion was that technologies create and operate within a space of the new media that is a reaction to a deep existential discomfort, experienced through the pains and sicknesses of the body – an anthropological experience of deep-running dissatisfaction. For him, diverse technologies developed to enhance our senses and the functions of the body would equate to technological prostheses and amputation of the primary bodily functions – and, more generally, our intentions as embodied beings.

The flickering face on the water, as the story goes, was so captivating that all else in life seemed meaningless for Narcissus. A similar tendency of autoeroticism can be witnessed in the bioscience research pursuing the ultimate truth about various species via their genetic makeup, in the technoscientific enterprises driving the development of the bodily and informatic capacities of our species body. And the face is not just reflected but also subjected, such that for the first time we become aware how we, as individuals and species, are equipped with a large number of technological extensions of the body. At the same time, and beyond extensions, we also have developed externalised intentions placing our identities outside our embodied being – our mind is being increasingly redistributed in its material and informatics senses ( Hutchins 1995 ), while our bodies are extended with numerous technologies of life.

This dual recognition stems from the fact that biological bodies themselves are both a medium of coded functions that run inside cells, guided by instruction sets (in DNA), AND a source of numerous unknown bits of information to be decoded for new biotechnological pursuits

[b]y putting our physical bodies inside our extended nervous systems, by means of electric media, we set up a dynamic by which all previous technologies that are mere extensions of hands and feet and teeth and bodily heat-controls – all such extensions of our bodies, including cities – will be translated into information systems. Electromagnetic technology requires utter human docility and quiescence of meditation such as befits an organism that now wears its brain outside its skull and its nerves outside its hide. ( McLuhan 1995 , 57) 2

The anthropocentric figure of Narcissus, and Homo sapiens as its own species body, thus became quiet reflections of an extended organism, an extended sense of being in which we all wear humankind as our skin . Skin – as the outer physical boundary of our bodies and embodied individuality – still marks the difference between individuals. New technologies are generative in relation to the media they are embedded in, but this generative vitality is an outcome of our embodied human experience that has a profound capacity to reach out, extend, and redistribute our sensing capacities through information systems, even though the body itself might be physically delimited by the skin ( Bateson 1972 ). At the same time, skin serves as the boundary site for inscribing in our bodies new attributes, capacities, and dreams of the whole of mankind, mediated through global information networks. Skin works as the physical human–world interface between the individual and mankind, body and information, function and intention, now newly articulated in relation to an ‘extended nervous system’ at global scale, as McLuhan saw it – the Internet.

McLuhan’s proposition as to how media and their constant transformation beyond known formats and circuits – text to film to electric lighting – concentrated on rethinking what we should consider to be ‘information’ and how bodies will be capable of carrying, communicating, or transmitting any of that. With the biomolecular revolution ( Kay 2000 ), the cybernetic movement of ‘in-formation’ during the important decades of the mid-twentieth century ( Hayles 1999 ), and the idea that DNA is information contained in the medium of bodies – code of life to be not only decoded but also encoded and now recoded ( Thacker 2010 ) – our bodies have become transformed into several distinct media formats that together Eugene Thacker calls ‘biomedia’. For him,

biomedia is a constant, consistent, and methodical inquiry into the technicalphilosophical question of ‘what a body can do’ [. . .] particular mediations of the body, optimizations of the biological in which ‘technology’ appears to disappear altogether [. . .]. The apparent paradox of biomedia is that it proceeds via a dual investment in biological materiality, as well as the informatic capacity to enhance biological materiality . (ibid., 52–53; italics in original)

The enhancement of biological materiality is, on one hand, driven by primary and practical goals of healing that are rooted deeply in the core of the anthropos itself. This also renders new information about the body valuable, both as direct interventions with the body and indirectly in the practises by which the body can be healed, re-balanced, or enhanced. At the same time, the question of the ‘body’ and what it can do becomes newly articulated and pertinent to a vast array of industries, institutions related to the generation, processing, and application of the new biomedia. Here, the question is at once pragmatic and philosophical, and value becomes recast in terms of economic and experiment-oriented idioms.

### Link—Cyber—Generic

#### Cybersecurity policy is a testing ground for the instantiation of a new regime of cybernetic control. You should understand the 1AC not simply as a discrete speech act but “as an active sociotechnical construction site of an emerging digital society.”

Haddad and Binder, 19—Institut für Wissenschafts- und Technikforschung, Universität Wien; Österreichisches Institut für Internationale Politik (Christian and Clemens, “Governing through cybersecurity: national policy strategies, globalized (in‑)security and sociotechnical visions of the digital society,” Österreichische Zeitschrift für Soziologie 44, 115–134 (2019), dml) [Weltinnenpolitik=world-focused politics, cosmopolitian multilateral initiatives, etc]

Once imagined as a “virtual commons”, through the rise of Big Data (Cukier and Mayer-Schönberger 2013), cyberspace has increasingly grown into a medium of control (Cheney-Lippold 2011) and a site of expropriation and accumulation though dispossession (Thacker et al. 2016), as well as a space of potential instability, disorder, and disobedience. Its paramount importance for growth and competitiveness in an ever-growing innovation economy based on digital platform technologies has further propelled the perceived need for “securitizing” cyberspace, i.e., rendering the digital sphere “safe and secure” to bring about a desirable future. How can we make sense of the emerging regimes of DS&S for a broader critical understanding of contemporary societies?

Cybersecurity as “globalizing” form of security

Around the time when the OECD (2012) observed a new generation of cybersecurity policies emerging worldwide, NATO reflected on the topicality of cybersecurity ten years after the 9/11 attacks.

Together with the Twin Towers, our traditional perceptions of threats collapsed. […] Before 9/11, cyberspace risks and security challenges were only discussed within small groups of technical experts. But, from that day it became evident that the cyber world entails serious vulnerabilities for increasingly interdependent societies (Theiler 2011, n.p.).

As this quote illustrates, cybersecurity has become closely articulated within a broader shift in security in a new constellation of globalized threats in the aftermath of the 9/11 terrorist attacks. In this narrative, sources of insecurity have virtually globalized. This articulation of cyberspace within an emerging landscape of generalized (in-)security and terrorism not only frames cyberspace as a new field of security interventions but also calls for a novel rationality of security and, correspondingly, a novel epistemology of threat, a revised toolbox of countermeasures, and adaption of bureaucratic institutions (Hansen and Nissenbaum 2009, Simon and de Goede 2015).

In the wake of 9/11, political philosopher Giorgio Agamben has pointed to the virtual end of a state of security understood in the framework of national sovereignty and suggested that now “security finds its end in globalization”. Security, he argues, has gradually become the basic principle of state activity: “What used to be one among several definitive measures of public administration until the first half of the twentieth century, now becomes the sole criterium of political legitimation” (Agamben 2001, n.p.). This state of security operates on a permanent expectation of emergency: of risks to be controlled and threats to be preempted (Cooper 2006). This predicament further implies, as critical security scholars have shown (Buzan et al. 1998; C.A.S.E. Collective 2006), not only a drastic de-politicization and a de-democratization but, furthermore, a collapse of politics altogether—both in the sense of international geopolitics and in the sense of democratic public policy. In this new security logic, politics collapses into management, and inter-national military conflicts collapse into police actions rationalized in terms of a looming Weltinnenpolitik (Dauderstädt 2003).

Tying into these reshaped security discourses, cybersecurity hence presents a seemingly all-encompassing concern, as it articulates issues of national security and sovereignty with concerns for personal safety and the social and economic welfare of contemporary society (Cheyney-Lippold 2011; Thacker et al. 2016).

The Austrian experience with the (re-)imagination and conceptualization of digital safety and security regimes exemplifies how cybersecurity does not merely present a discrete agenda within security policy but rather amounts to a “globalizing” form of security animating, and animated by, an emerging sociotechnical regime of control. To secure present societies against digital threats and to achieve a prosperous digital future, huge efforts are taken that articulate through almost all domains and levels of society. As such, cybersecurity presents a testing ground where the relationships between an ever-emerging digitalizing society and their corresponding conceptions of security are problematized and reordered. From this, the following propositions follow:

The digital society is co-produced with cybersecurity

Cybersecurity must be understood as an active sociotechnical construction site of an emerging digital society. From this perspective, problematizations of cybersecurity do not merely emerge in reaction to progressing digital society but rather constitutes a medium in which the latter is collectively (re-)imagined, publicly pursued, and institutionally configured. The aspiration to create a culture of cybersecurity, hence, further indicates this generative and productive dimension of DS&S: The aspiration to train and educate individuals as circumspect users of digital technologies does not only seek to protect citizens against harm but simultaneously to forge prudent digital subjects—citizens with the necessary set of skills and capacities to capture and innovate a digital society imagined to be caught in constant “in-formation” processes.

Furthermore, as an active site of societal transformation, the seemingly technical nature of producing DS&S (in terms of innovating new cyber tech devices, governance instruments, and digital subjects) appears as a highly political endeavor. To (re-)produce sovereignty in the cyberspace domain, a plethora of control mechanisms have to be put in place and kept in operation: data sets are analyzed, algorithms redefined, incidents mapped and reported, and devices redesigned and developed. On the other hand, these control mechanisms operating at the level of protocol (Galloway 2004) are complemented by technologies of subjectification (Foucault 2004): digitally prudent and responsible subjects are forged, ones that acquire and embody appropriate behaviors, coping strategies, and practices of self-formation as digital citizens and/or digital experts.

### Link—Cyber—Regulation

#### The aff is a pipe dream that provides a cover for cybernetic militarism and makes nuclear annihilation more likely. Only the alt has a hope of preventing cyberwar.

Dyer-Witheford and Matviyenko, 19—associate professor of information and media studies at the University of Western Ontario; assistant professor of communication at Simon Fraser University (Nick and Svitlana, “What Is to Be Done?,” *Cyberwar and Revolution: Digital Subterfuge in Global Capitalism*, Chapter 3, 151-156, dml)

As we have argued, from 1945 on, the hegemonic status of the United States, as the world’s chief capitalist power, was intrinsically related to the development of computers and networks. The role of digital systems in its military–industrial complex, initially tightly coupled with nuclear weapons, spread through other aspects of its war-making system as well as through the general economy. In both aspects, it contributed to the United States’s eventual Cold War victory. In the aftermath of that victory, the United States continued to develop its digital military capacities into the ever more direct weaponization of network, creating the technological human assemblages of what is today referred to as cyberwar. The scope of NSA global surveillance and sabotage programs and the sophistication of the Stuxnet nuclear centrifuge-destroying malware are only the most manifest instances of this process, which is today an integral part of a wider upgrade of U.S. military capacities that ties together a nuclear primacy with the militarization of space and drone warfare. Accompanying and spurring on this process is the additional dynamic of cyberwar adoption by the forces antagonistic to the global dominance of the United States and its allies. These antagonists include the defeated socialist powers, Russia and China, now paradoxically resurrected as capitalist competitors in the world market, or, in the case of North Korea, surviving in a macabre afterlife of state socialism. They also include the forces of militant Islamic jihadism, beckoned into existence by the West as an anticommunist ally, only to become its opponent in the long war on terror. All these actors converge on the militarization of digital networks. Many observers today see a moment that recapitulates the decline of previous imperial hegemons within the global capitalist system—Spain, Holland, Britain—and parallels the moments of extreme instability as old powers and new contenders confront each other.7 The rise of cyberwar is part of this tumult and quite possibly a precursor and preparation for widening and intensifying conflict. Schematically, we can envisage three potentially intertwining trajectories such a process might take:

1. Network degradation. Alexander Klimburg (2017) outlines the possibility of a “darkening web” characterized by persistent and gradually intensifying cyberwar between states and between states and terrorist movements conducted in a variety of registers. Security breaches, aggressive malware, and botnet attacks proliferate. Digital industrial sabotage and critical infrastructure attacks begin to multiply, as do the accidental runaway effects of cyberweapons. Networks are deeply and chronically infected with computational propaganda, fake news, and viral mis- and disinformation. In response to adversarial incursions, states intensify algorithmic surveillance, censorship, and preemptive virtual policing. Cybersecurity provisions become increasingly mandatory and elaborate. Attribution problems, falsification of evidence, and the overlap between military and intelligence forces and criminal networks create a chaotic digital twilight of hacking and trolling, botnets and viruses, malware, surveillance, and bugs, shutdowns, blocking, and filtering, in which uncertainties exacerbate suspicions and hostilities, altogether making the internet increasingly impossible to use. In short, the “darkening web” is what already exists now, only more so. One of the cofounders of Twitter, Evan Williams, offered his diagnosis, suggesting that “the Internet is broken” (Streitfeld 2017). But maybe it’s not. Maybe the internet is finally what it was always meant to be. Maybe it is perfect, but not for us, the excommunicated user-subjects. For cyberwar.

2. Hybrid escalations. Similarly rooted in the present is the likelihood that the simultaneous virtual and kinetic conflicts, such as the Syrian civil war, the fighting in Donbas, and the many branches of the war on terror, continue and break out in new regions, bringing ever higher levels and varieties of cyberweapons, deployed for purposes ranging from intelligence gathering, battlefield surveillance, and munitions delivery to sabotage of enemies’ domestic and military resources. The use of drones and other semi- or fully automated weapons systems expands and takes new directions, such as the development of swarms of small autonomous vehicles—“slaughterbots” (Economist 2017a)—for house-to-house fighting in ruined cities. The biometric and networked tracking of refugees created by such conflicts, and the control and interdiction of their entry to affluent fortressed homelands, becomes a major activity of the nation-state security apparatus. Because present hybrid wars are also in large part proxy wars, where local battlefield actors are directly or indirectly supported by major powers, they are charged with the possibility of abrupt collisions between the most powerful militaries on the planet.

3. “Thermonuclear cyberwar.” We borrow this phrase from Erik Gartzke and Jon Lindsay (2017), who are among several authors currently pointing to a renewed and dangerous rendezvous between cyber- and nuclear weaponry. The last decade of debates between defense intellectuals about cyberwar has split those who see digital attacks a new equivalent of nuclear weapons, capable of disabling whole societies through critical infrastructure attacks, and skeptics who deride such anxieties as hyperbolic and implausible. But “cyber” and “nuke” are not separate. As we have seen, they were twinned at the moment of conception, with the development of each dependent on the other. And the connection is not just historical; it is current. Now cyberwar weaponry is part of a new approach to nuclear war fighting, the left-of-launch approach. Early ventures in antiballistic missile defense, such as Reagan’s “Star Wars” strategic defense initiative, depended on shooting down swarms of missiles as they plunged through the atmosphere toward their target. Left of launch, in contrast, aims to “strike an enemy missile before liftoff or during the first seconds of flight,” using “cyber strikes, electronic warfare and other exotic forms of sabotage” (Broad and Sanger 2017). This doctrine was incubated during the Obama administration and inherited by the Trump presidency. Advocates of the left-of-launch nuclear strategy present it as a defensive measure. However, the doctrine destabilizes basic premises of deterrence that have, since 1945, restrained nuclear weapon use (Cimbala 2017). Deterrence depends on a dread faith by all parties that both their own and their enemies’ nuclear weapons will work. The possibility that nuclear weapons systems might be secretly disabled raises prospects both of overconfidence (trusting one can sabotage an opponent’s system) or panicked preemption (fearing left-of-launch attacks on one’s own nukes and falling into a “use ’em or lose ’em” mind-set). More generally, control and command of nuclear weapons depend on communication systems whose collapse in a crisis situation could have catastrophic results.8 The origin of the internet lay in the U.S. attempt to ensure continuance of such systems in the event of nuclear war; now the weaponization of the internet itself constitutes a possible cause of nuclear war.

Facing such prospects, liberal commentators propose diplomatic measures to control and mitigate cyberhostilities. Klimburg (2017), for example, suggests a series of initiatives to be undertaken primarily by the United Nations and the Internet Corporation for Assigned Names and Numbers (ICANN), the long-standing (and controversy-ridden) forum for internet governance. In these venues, he suggests, it should be possible to work out a series of agreements—“digital arms” limitation treaties, comparable to those on nuclear weapons; an “attribution and adjudication” council to assess and arbitrate responsibility for cyberattacks; international cooperation against cybercrime; the promotion within ICANN of “civil society” perspectives to counter those of states and corporations. He suggests that “standing bodies” regulating cyberwar would be comparable to the Intergovernmental Panel on Climate Change and emphasizes the importance of “scientific and authoritative advice from experts to political decision makers on how to avoid disaster” (344).

Such proposals, seemingly eminently sensible, ignore the reality that the tensions driving the rise of cyberwar are also incapacitating the fragile apparatuses and institutions of international cooperation that have existed since 1945. As Jon Lindsay (2012) observes, while proposals for cyberwarfare treaties are “well meaning,” they would, within the current state of international great power relations, be “hacked to bits,” because “cyberoperations, like other types of intelligence and covert operations, take place in the shadows. An international treaty on cyberweapons would be . . . totally unenforceable, since such activity is designed to evade detection and attribution.” The conjuncture in which cyberwar rises, and part of the reason for its ascent, is the breakdown of nuclear arms limitation and nonproliferation treaties. Klimburg’s comparison of the regulation of cyberwar and climate change is unfortunately all too telling, given the failure of global capitalism to generate any binding interstate agreements on carbon emissions and the recent withdrawal of the United States from even the nonbinding Paris accord on global warming. And like slowing climate change, reducing the risk of cyberwar requires deep, systemic social change.

The argument of this book is that cyberwar is a manifestation of the competitive nature of capitalism, which, beneath the surface of globalization, fosters a war of all against all, conducted in the accelerated, automated, and abstracted forms on which this entire mode of production now depends. It follows from this that the prospects for reducing the dangers of cyberwar, and of the other types of war of which it is now part, depend strongly on movements and struggles to constrain and, ultimately, abolish this internally antagonistic order. A recognition of the extreme difficulty of this project is inherent in the point on which we opened this chapter, namely, Noys’s observation that the military high-technology “endocolonization” of society has been a factor in decomposing the traditional industrial working-class movements that were historically the main agencies of socialist and communist projects. However, there is also a possible reversal of this logic, if averting war, including cyberwar, becomes entwined with other issues, such as struggles for social equality and ecological sustainability, a focal point for recomposition of movements looking beyond capital, drawing on new and diverse constituencies. We have indicated some of the issues that we think might be drawn together around resistance to the rise of cyberwar: antisurveillance sentiment, rejection of the secrecy of the security state and its new digital complexes, concern over the corruption of the general intellect by mis- and disinformation, objection to corporate and military criminality, and, of course, revulsion at the exterminatory horrors of war, from the terror of dirty wars to global thermonuclear catastrophe.

### Link—Environment/Warming

#### Mobilizing NATO against environmental catastrophe datafies the planet in an effort to immunize humanity against the consequences of the cybernetic episteme.

Caygill, 19—professor of modern European philosophy at Kingston University (Daniel, “Anthropokenosis and the Emerging World of War,” *War and Algorithm*, Chapter 3, 57-59, dml)

Maybe there is too much innocence attending the idea of catastrophe—this term we use for organizing historical and geological time and our subjective experience of it. Walter Benjamin would surely savor the irony of the term he proposed as an alternative to the principle of “progress” that dominated the late nineteenth and early twentieth centuries becoming its substitute in the late twentieth and early twenty-first centuries. Its emergence is inseparable from the historic capture of immense energy in nuclear research and technology—military and civil—that for Jean-Luc Nancy provides a standard for the equivalence of catastrophe: “The ‘equivalence’ of catastrophes here means to assert that the spread or proliferation of repercussions from every kind of disaster hereafter will bear the mark of the paradigm represented by nuclear risk.”12 The human access to immense sources of energy lends catastrophe a planetary dimension from which not even the future is immune; the effects of a nuclear catastrophe “spread through generations, through the layers of the earth: these effects have an impact on all living things and on the large-scale organization of energy production, hence on consumption as well.”13 However, Jean-Luc Nancy’s use of the term “nuclear risk” situates his thought within a paradigm of risk and accident that orients catastrophe according to the modality of possibility—it might happen; it might not—with the corollary that it is in principle survivable. The notion that a sudden global nuclear energy surge—civil or military, inadvertent or intended—might unleash a planetary catastrophe remains for Nancy at worst a risk or an avoidable possibility rather than an event already irreversibly engaged.

The political uses of catastrophe or “climate terror” have been explored by Sanjay Chaturvedi and Timothy Doyle in their Climate Terror: A Critical Geography of Climate Change. 14 Their two main claims provide an interesting complement to Steuer’s prolegomena. The first is that climate change, “far from being a moment of rupture or radical departure, is a continuum marked by an ever-shifting triad of statecraft and its political economies, nature and power,”15 and the second is that “climate change geopolitical discourse” is “about controlling the contestation arising out of longstanding resistance against environmental degradation in many parts of the global south.”16 In spite of making fascinating observations on the use of catastrophist military concepts such as WMD and MAD, Chaturvedi and Doyle nevertheless offer a largely civil account of domination and resistance, not explicitly articulating “statecraft” and “power” with military violence. Steuer’s focus on new modes of military violence offers a valuable supplement to Chaturvedi and Doyle but one that continues to subscribe to a theoretical commitment to catastrophe avoidance or survival through risk management and ideology critique.

Perhaps more attention needs to be paid to the historic matrix for our current thinking of catastrophe, along with its limits and effects, in the Cold War strategic planning that contemplated initiating and surviving military and environmental catastrophe. In the conception of catastrophe that emerged in U.S. strategic discussions of the 1950s and early 1960s, the risk or possibility of nuclear catastrophe was secondary to the importance of surviving it. A major element in the proposition that catastrophe was survivable was the immunizing of civil populations against its threat; the strategic assumption that catastrophe was in principle survivable became a cultural and political fact that both encouraged the dissemination of the idea of catastrophe while immunizing us against its horror through the conviction that it was survivable. The dangerous legacy of this paradigm is evident in the sluggish response of state and international actors to the threat posed by systemic planetary instability to the survival of human life on this planet.

Most genealogies of geological catastrophe begin in eighteenth- and earlynineteenth-century debates between catastrophic and continuist approaches to the fossil and stratigraphic records—such as Charles Lyell’s arguments against Georges Cuvier in the early nineteenth century. However, it is important not to underestimate the importance of the more recent and uncanny mobilization of the idea of survivable catastrophe as an organizing principle of the strategic doctrine of total war during the Cold War. What Eisenhower criticized as the “military-industrial complex,” or the immense investment in military research and development central to U.S. strategy in the Cold War, was organized not only around the concept of catastrophe—especially how to inflict it upon adversaries—but also around how to survive catastrophe. It was not just confined to the closed doors and secret meetings of strategic debate but became a cultural fact whose legacy continues, even in ways that seem remote from its military sources.

Jacob Hamblin has traced some aspects of this genealogy in his challenging Arming Mother Nature: The Birth of Catastrophic Environmentalism. Hamblin makes a powerful contribution to an emergent counter-history of the environmentalist movement by tracing the notion of environmental catastrophe to the strategic planning for environmental war. He shows that the discourses of world war and environmental catastrophe are closely related: “The language of the Cold War’s global crisis and that of environmental crisis are strikingly similar. That left room for alternative views that postwar affluence, dissatisfaction with pollution and a new understanding of environmental hazards were the most important factors.”17 In the emergent counter-history of environmentalism, the global theater of the Cold War and the destructive effects of nuclear weapons, along with civil/military initiatives dedicated to survival, led to the elaboration of a planetary consciousness but one firmly rooted in a strategy of survivable catastrophe.

Hamblin examines a wide range of military discussions dedicated to combining atomic bombs with natural forces, to extending the possibilities of biological warfare, to gathering information and data about the coming planetary battlefield, and to achieving the satellite mapping of the planet. With respect to the last initiative, his analysis of the drive to gather planetary data during the International Geophysical Year in 1957 offers invaluable background to the circumstances that subsequently led not only to the measurement of global carbon dioxide levels but also to NATO’s discussions of environmental/ecological warfare in the early 1960s Von Kármán Committee. He shows how catastrophe, both how to inflict and how to survive it, is at the center of all these discussions: “Environmental cataclysms could become part of the alliance’s arsenal, with the help of a well-placed nuclear explosion.”18 Hamblin shows how this strategic attention to environmental war passed over—often through the same scientists—into a civil environmental critique of planetary degradation and became part of the intellectual legacy of strategic environmental warfare. The measurements and data collected under the aegis of a willed global conflict between human adversaries using the weapon of artificially stimulated environmental catastrophe19 came to serve the emergent idea of an unintended global environmental catastrophe—induced by human actions, suffered by the planet, but also in principle survivable. The data collection, the programs for processing it, and the interpretative protocols for making sense of it all emerged from this matrix of survivable catastrophe.

Hamblin’s account of the role of survivable catastrophe in environmental discourse may be supplemented with two further examples, one from the RAND Corporation20—the research and development think tank associated with the U.S. Air Force and dedicated, at the height of the Cold War, to theorizing nuclear deterrence and first-strike capability—and the other from NASA’s earth systems theory, which became the condition of possibility for conceptualizing the Anthropocene. Both cases offer examples of survivable catastrophist discourses at work and give a sense of how deeply they inform contemporary attitudes toward the future, especially the blithe inaction in the face of acknowledged catastrophe.

### Link—EU

#### Intervening in EU governance mechanisms to secure future technology furthers the cybernetic takeover of Europe.

Calcara, et al, 20—Postdoctoral researcher at the LUISS Guido Carli University and Adjunct Professor at the Vesalius College in Brussels (Antonio, with Raluca Csernatoni and Chantal Lavallée, “Emerging security technologies – an uncharted field for the EU,” *Emerging Security Technologies and EU Governance: Actors, Practices and Processes*, Introduction, 12-15, dml)

The concept of governance has been extensively used to shed light on EU policy formulation and implementation. In the late 1980s, the ‘governance turn’ in European Studies coincided with and was stimulated by a significant increase in European competencies in the wake of the Single European Act and the single market programme (Kohler-Koch and Rittberger 2006: 32). Studies focus on the simultaneous centralisation of authority in a continental polity and decentralisation to subnational regions. They have been shaped by the EU’s hybrid features, which are hard to categorise with the standard toolkit of Political Science. Specifically, the EU appears to break the mould of state-like features, being not a state in itself. Overall, EU governance studies (Piattoni 2010) argue to move beyond European mainstream approaches that understood EU integration either as a natural spillover process (Haas 1958) or as driven by member states’ national interests and actions (Moravcsik 1998), in order to analyse how the EU works as a decision-making system. In this regard, a plethora of analyses have come to see the EU as a multilevel governance (MLG) system, characterised by ‘the simultaneous activation of governmental and non-governmental actors at various jurisdiction levels’ (Piattoni 2010). MLG studies posit that decision-making authority is not monopolised by national governments but is diffused to different levels of decision-making – the sub-national, national and supranational levels (Hooghe and Marks 2001: 4). A lively debate has also emerged on new modes of governance, roughly defined as non-hierarchical means of political steering, a central characteristic of EU constrained authority vis-à-vis the member states (Sabel and Zeitlin 2010).

The literature on EU governance has predominantly dealt with former firstpillar issues (policy areas in which the EU has exclusive competence). However, with the adoption of the Treaty of Lisbon, which abolished the pillar structure, some scholars have explored the governance of the EU Common Foreign, Security and Defence policy (Webber et al. 2004; Kirchner 2006). The security governance research has been especially interested in the EU peculiar role as a security actor. In this regard, some scholars have argued that the EU can be defined as a civilian, normative, structural and global power (Manners 2002; Del Sarto 2016). Scholars have also analysed the social conditions of the EU’s international identity as defined through practices, discourses, struggles of the actors enacting the EU external relations (Rogers 2009; Mérand and Rayroux 2016). Moreover, a strand of research has highlighted more complex governance structures in the EU security and defence field than that implied by the traditional intergovernmental cooperation among national governments. Some identified the governance in the European security and defence field as characterised by ‘intensive transgovernmentalism’ to indicate that the intensity of interactions and the density of structured and productive collaboration create transgovernmental relations that differ from the typical rational bargaining of intergovernmentalism (Howorth 2001; Wallace and Wallace 2007; Mérand 2008).

According to Cross (2011), transnational interactions in Europe have been conductive to the establishment of influential knowledge-based networks of state and non-state actors that, by sharing technical and specific professional behavioural rules, have the capacity to shape the mission of their organisations beyond the original formal mandate. Other scholars have examined the development of the EU’s security architecture and capacity building, underlying the role of EU institutions (agencies and expert groups), bureaucracies at national and European levels, and non-state actors as part of ‘epistemic communities’ (Trondal 2008; Cross 2011; Gornitzka and Holst 2015). Nevertheless, emphasis has been given to expert knowledge production and its epistemic influence in policy-making. These ‘epistemic communities’ are often considered as homogenous and consensual sidelining technical, economic and political diverging interests in debates surrounding the governance of emerging technologies.

The academic literature on European security has not provided, so far, a systematic assessment of the main actors involved in the governance of emerging security technologies. First, European governments maintain a primary role in the development of these strategic technologies. To make only a striking example, the French government has developed its own AI strategy and has affirmed the strategic nature of these technologies for state security (Villani 2018). Second, European civil and military industries have an obvious economic interest especially as dual-use technologies are a simultaneously source of opportunity. However, if the equipment is unrestricted from military arms control or procurement policies it is subjected to EU dual-use control (see Vila Seoane, Chapter 5 in this book). Moreover, in contrast with other regional contexts, most European military companies have also a predominantly civilian component (Airbus is a case in point). The development of dual-use security technologies, therefore, questions the main features of both the European civil and military markets. This is actually a long-running debate in the European security field. Already in 1989, Walker and Gummett noted that:

European defence industries are caught up in the powerful dynamics surrounding the Single European Act, not least because most defence contractors are substantial players in civil high-technology markets and because boundaries between civil and military technology are becoming harder to draw. Although different that regulatory structures of the two sectors cannot therefore be kept completely separate – which means that there is a potential serious clash of interests between the authorities concerned with civil and with military industrial activities. (Walker and Gummett 1989: 420)

The governance of emerging security technologies is further complicated by the distinctive policy-making at the European level. EU institutions have increasingly promoted the development and employment of ‘new’, ‘dual-use’, ‘advanced’, ‘next generation’ or ‘emerging’ technologies for countering their internal and external security threats. This is quite evident with regard to the policies and measures that have been adopted to foster the security domain of the EU Area of Freedom, Security and Justice. For instance, the pursuit of ‘new technologies’ for security purposes took on new dynamics following the adoption of ‘The Hague Programme: Strengthening Freedom, Security and Justice in the European Union’ (Council 2005). Moreover, security technologies, as indicated in the EU official documents, need to be developed through a close collaboration between the public and private sector, meaning EU public bodies and authorities, academia, research centres and industries (Bonfanti 2017: 39; Martins and Ahmad, Chapter 3 in this book). Significant budgetary resources have been allocated for the purpose of researching new security technologies. The EU has also promoted the involvement of representatives from the military sector in the definition of R&D, in particular the European Defence Agency (EDA). This involvement stemmed from the need to synchronise research initiatives carried out in the civil and military security domains with a view to avoiding duplications and to promote synergies.

The EU’s institutions such as the European Commission and the European Parliament, as well as agencies like the EDA, and the member states have been actively involved in promoting the development of these technologies (drones and AI, for instance). Their common goals have been to bridge the technological-innovation gap, especially towards the United States and China, to transform the European technological and industrial base into a competitive advantage while also considering the need of the public acceptance. Hence, emerging security technologies are challenging the EU’s representatives to find the balance between their promotion by creating markets and stimulating cutting-edge research and innovation, and the need to address their normative and ethical implications with legal controls regarding their use and the risks of misuse.

In this regard, the analysis of the European governance towards these technologies is also questioning the nature and scope of the European integration. Such technical advancements are transforming civil–military practices and might have unforeseen long-term effects on the EU imaginaries (what the EU is) and its global role. Concerning these changes, in the last few years, we have seen growing concerns in the critical literature and civil society about the militarisation of the EU. Some scholars engaged in the debate on armed drones within the EU (Csernatoni 2018; Paulussen and Dorsey 2016; Martins 2015), in line with the important academic debate on the legal, political and ethical issues regarding the extra-judicial ‘drone killings’ used by the American administration under the then President Obama as counter-terrorism measures in Afghanistan, Somalia, Yemen and Pakistan (Schulzke 2017; Barrinha and da Mota 2016; Hajjar, Levine and Naqvi 2014).

The apprehensions concerning the risks that the European contribution to the development of emerging technologies might transform the EU’s scope and nature have further intensified with the 2016 ‘European Defence Action Plan’ and the launch of the European Defence Fund by the European Commission. For instance, such fears have been openly expressed through demonstrations at the 2018 EDA’s annual conference on ‘From Unmanned to Autonomous Systems: Trends, Challenges and Opportunities’. In the international context where the ‘Campaign to Stop Killer Robots’ gains momentum, some critical voices expressed clear concerns about the possibility that European companies developing lethal autonomous weapons might have access to EU funds or criticised the military interest at national level to possess such weapons, raising the probability of a global arms race (Teffer 2018a, 2018b). With a new European discourse on civil drones, some scholars rather criticised the demilitarisation of dual-use technologies such as drones as a means to manage public acceptability by reducing the scope of debate in Europe (Boucher 2015).

### Link—Hybrid War

#### The 1AC’s reading of hybrid warfare misses the informatic transformation of war into a data-gathering exercise. Legal regulations of warfare are never epistemically neutral in the cybernetic era.

Steuer, 19—research fellow at the Centre for Applied Philosophy, Politics, and Ethics (CAPPE) at the University of Brighton (Daniel, “Prolegomena to Any Future Attempt at Understanding Our Emerging World of War,” *War and Algorithm*, Chapter 2, 14-16, dml)

According to Kaldor, the term “hybrid wars,” or “hybrid threats,” “nicely captures the blurring of public and private, state and non-state, formal and informal,” but if it is used exclusively to refer to “a mixture of different types of war (conventional warfare, counter-insurgency, civil war, for example),” we risk failing to notice “the specific logic of new wars.”34 The hybridity of the New Wars is not just a matter of there being such an admixture of old types of war and fighting; it results from a blending of categories in all of its elements.35

From the perspective of military and security experts, hybridity marks the shift from the paradigm of war to that of policing and security operations, but it does not challenge the friend–enemy distinction.36 A hybrid threat is “any adversary that simultaneously and adaptively employs a fused mix of conventional weapons, irregular tactics, terrorism, and criminal behaviour.”37 Thus, hybridity is not the medium of all action but a trait of identifiable moves carried out by identifiable opponents (“challengers” or “competitors”38). The distinction between legality (or legitimacy) and illegality (or illegitimacy) is retained. But, as we shall see, hybrid threats require, and breed, hybrid responses.

In Rupert Smith’s analysis, war among the people “is the reality in which the people in the streets and houses and fields—all the people, anywhere—are the battlefield. . . . Civilians are the targets, objectives to be won, as much as an opposing force.”39 The true aim in using military force is to “win the clash of wills” and to that end to “change or form the intentions of the civilian population.”40 “Individual guerrillas” or “alternative political leaders” move and fight among “the specific people of [their] interest, whilst the audience of these conflicts has become, courtesy of the media, the people of the world.” This audience influences political decisions at least as much as do “events on the ground,” and thus the guerrillas or alternative leaders “use the media to influence decisions, and above all the will of those people they seek to lead and co-opt. This is not so much the global village as the global theatre of war, with audience participation.”41

War among the people is a competitive exercise in social transformation and control, a hybrid form of hegemony, with the aim of determining the narration of events.42 The use of force may help you to become the master narrator, but it cannot achieve that goal by itself.43 The “confrontational battlefield” includes “economic, diplomatic, political, humanitarian,” and other organs of power,44 and a commander therefore needs military and civilian staff that are multidisciplinary as well as multinational, in order to gather the required information in ethnographically foreign contexts.45 The necessity of joint political and military analysis means that “there are no longer purely military or political situations,” especially as “information, not firepower, is the currency upon which it [war among the people] is run.” And just as “information is neither purely political nor purely military,”46 so it is “no longer possible to simply divide activities between military and other services.”47 Thus, “the question will be who is providing security and from what, whose laws and regulations prevail, and who are the judges.”48 What kind of expert is required in this situation?

In 2010, David Kilcullen, a former member of the Australian Army and advisor to the U.S. military, founded the “research and analysis firm” Caerus Associates, which “helps clients understand, adapt, and operate in complex and conflict-affected areas around the globe.” Apart from the United States and allied governments, clients include “financial institutions, media companies, non-profit and philanthropic organizations, legal institutions, and technology companies.” Big data analysis is used “to find meaning in complexity:” “By working with clients to translate meaningful behaviors into data—and back again—we support actionable insight by identifying ‘honest signals’ in complex, local environments.”49 This description contains all the components of the emerging form of war: any part of the world may be translated into data, and action is taken on the basis of the analysis of these data. Differences between military and nonmilitary operations—whether the object is a “conflict ecosystem” or a complex (business) environment—are at best a matter of degree. The parameters provided by the “client” determine the desirable outcome.

In his earlier research papers and books, Kilcullen describes a global theater of war in which “[f]orces contributing to effects, but not physically within theatre” are included as parts “of a Virtual Theatre.”50 As they are for Smith, so for Kilcullen “the people remain the prize,”51 and by “the people” he means “a global audience rather than a local citizenry.”52 Modern counterinsurgency has to navigate “a cultural and demographic jungle of population groups,” and this navigation requires data collection combining “open-source research and ‘denied area ethnography.’”53 The aim, according to his “theory of competitive control,” is to be “the local armed actor that a given population perceives as best able to establish a predictable, consistent, wide spectrum normative system of control,” as such an actor is “most likely to dominate that population and its residential area.”54

A government is no more than “a political organization that has successfully outcompeted its rivals across the full coercion-persuasion spectrum, allowing it to establish an uncontested normative system over a given population or territory.”55 It follows that any normativity is secondary to the competition over the capacity to establish it in the first place.56 The “coercive end of the spectrum is critical” because, following Max Weber, all other parts “rest on the ultimate sanction of force.”57 All differences between types of force disappear, leaving a crisscrossing landscape of rivaling entities who aim to become the source of normativity and the security provider. At that point, warfare and the battlefield take the form of a market in which hybrid competitors fight over the control of populations, offering security as their product. The people are the prize, the extraction of value the aim. This situation is the permanent state of exception: the temporary sovereign is who or whatever is able to forge the common predicament, the shared objective, the shared perception of a threat or problem, and so forth, and provide protection and solutions. The master paradigm is no longer war and peace but risk and security.58 The sovereign is he who wins the will or obedience of the people by whatever means.59

### Link—LAWS/LOAC/IHL\*\*\*

#### \*\*\*Note while prepping: LAWS=lethal autonomous weapons, LOAC=law of armed combat, IHL=international humanitarian law. The last two are largely regarded as synonymous.

#### IHL is a sham form of governance that will miserably fail at regulating autonomous weapons at best and will hasten algorithmic violence at worst.

Kendall, 19—senior lecturer and codirector of the Centre for Critical International Law at Kent Law School, University of Kent (Sara, “Law’s Ends: On Algorithmic Warfare and Humanitarian Violence,” *War and Algorithm*, Chapter 5, 106-109, dml)

This chapter begins from Noll’s philosophical claims about the underlying thinking that shapes AI, such as the self-learning algorithms that comprise it, as well as their consequences for closing the space of human judgment presumed by law. Building upon these concerns, I turn to the substance of the law of armed conflict or international humanitarian law, situating it historically to illustrate that even if it could grasp the phenomenon, this law would replicate and perpetuate the asymmetries that have accompanied its historical development. The humanitarian dimension of this body of law is applied biopolitically, securing particular populations to the detriment of others, as seen in practice through the allegedly “distinctive” and “proportionate” use of drones.7 Building upon critical accounts of international humanitarian law’s origins and practices, I address the distinct temporality of these emerging weapons systems. The logic that shapes algorithmic forms aims to condense time into intervals beyond the capacity of human response, and the objective of LAWS to supplement human cognition threatens to exceed the laws of their own creators.

As a means of condensing time in response to perceived threats, algorithmic warfare reveals a preemptive rationality. I conclude with a possible alternative: to recast preemption as an ethico-political exercise of human judgment. In their autonomous lethality, LAWS would foreclose human judgment on the battlefield. As with the U.S. military’s “Project Maven,” considered here, resisting this foreclosure calls for a collective political response to interrogate and unsettle the processes that contribute to the emergence of autonomous weapons. At the time of writing, war by algorithm appears as an imagined future, but one whose prospect becomes increasingly likely through incremental technological developments in intelligence gathering and analysis that may not treat autonomy as their objective. Enhancing warfare through algorithms and machine learning in the name of humanitarian ends—such as more precise targeting, leading to more proportionate numbers of casualties— may in fact hasten the advent of a violence that law is unable to contain.

LAW’S ENDS

Considering “the end of law” as Noll does invites two questions: what do we mean by “end,” and what do we mean by “law”? We might think of law’s end as a kind of closure or termination, when law is incapable of diminishing or regulating forms of violence. But law’s end might also refer to its telos or objective. Here law’s telos may in fact be the production of a world where its enforcement is no longer necessary. In the political dream of perfect compliance, law’s subjects could police themselves. Does it then matter whether its subjects are humans or machines or indistinguishable within a shared cybernetic relation? What would legal subjectivity look like beyond the human? When subjects inaugurate their own laws, are they more likely to comply with them? If autonomy signifies the unity between the law-giving and the law-abiding subject, then at an extreme of this logic, LAWS may no longer appear as a threat but rather as a perfect state of self-regulation, as auto nomos. 8 Questions pile upon questions as we contemplate an imagined future that can only be addressed speculatively and from the limited horizon of the present.

The first understanding of law’s end foregrounds the limits or failure of law, whereas the second suggests its ambitions. The scholarly literature on LAWS reveals a deep anxiety concerning law’s capacity to respond to these weapons: they are harbingers of a dystopian future that law must adapt to if it is to remain relevant; more specifically, they must be brought under international humanitarian law; they should be banned or controlled by treaties; accountability mechanisms for LAWS must be established; they are ethically unacceptable; they must always be governed by “meaningful human control.” Shared principles emerge across these different accounts. For example, one recent publication argues for adopting preventive security governance frameworks through international law,9 another for developing ethical guidelines to ensure the presence of “meaningful human control.”10 Autonomous weapons must not operate as “LAWS unto themselves” but must instead be subsumed under a law not of their own making.11 Such approaches illustrate the paradox that Noll points out: “An autonomous weapons system subjected to the heteronomos of the law would no longer be an autonomous weapons system at all.”12 The ancient Greek heteros refers to the other of two, and here a difference is drawn: the nomos of autonomous weapons systems is not the nomos of law, and in this sense law’s end is its failure to subsume algorithmic warfare under its own categories. Put another way, law offers no Grundnorm that governs beyond human cognition, as law and AI “appear to belong to different normative orders,” if AI can indeed be brought under any normative order.13 We seem to have arrived at law’s limits.

The second understanding of “law’s end,” as its telos, is more open-ended and multiple. To remain with the examples above, where law appears as something of a deus ex machina brought in to resolve a dystopian narrative drifting beyond human mastery, its end is to constrain or contain or to regulate violence. A particularly provocative illustration is found in the short film Slaughterbots, widely disseminated on social media, which ends with a call for a ban treaty.14 This commonly shared presumption concerning law’s objective or telos undergirds the law of armed conflict, often tellingly referred to as international humanitarian law. The dystopian narrative of LAWS is futural and speculative, but in this imagined future law’s end would be to bring LAWS under its authority or, put another way, within its (humanitarian) jurisdiction.

Noll’s reading of law’s end in this second sense, as objective or telos, builds upon the distinction between the incarnate and excarnate. In the monotheistic normative frame supporting the legal order, he contends, the objective of law is to “incarnate” the external, a-corporeal, written command, code, or statute—“excarnate” law—through study and compliance. Incarnating law in this way takes place through human consciousness, as has been the case from the emergence of monotheism through secular codified law, including the laws of armed conflict. In this sense, the end of law as its ambition or objective—incarnation—also reveals its limits: law cannot be extended beyond human consciousness. Law’s two ends described above—as either ambition here or as limit above—seem to meet within this reading, where its imbrication with human consciousness through study and compliance reveals the outer borders of its jurisdiction. We arrive at the end of a law unable to achieve its end-as-telos.

The meaning of law at stake in Noll’s account excludes what cannot be subsumed under this structure of incarnation. Law is understood as guiding (human) behavior; for example, in the context of armed conflict, it is “a kind of call . . . to use weapons responsibly.”15 Responsibility is tied to human cognition (as with state of mind, knowledge, and intent), which is complicated by the shared agency of algorithmic human-machine assemblages. If law is a call, it operates rhetorically as a mode of address, directed to particular subjects who must be capable of responding to it and, in turn, of being held responsible. This mode of address is severed by the logic of code, where excarnate commands are directed outward “and made to act on the world.”16 Yet even as law’s call is embodied by the human subject, there is no rule for the application of rules: what is required is the even more thoroughly human capacity for judgment and the response to this call by way of interpretation. The space of human cognition is arguably a space of judgment, where humans may respond to law’s call of proportionality by affixing ratios of civilian to combatant deaths and deeming them proportionate.17 There is a lingering question of whether the law at stake here—the law of armed conflict or international humanitarian law—can be properly humanitarian in the first place, protecting the bare human irrespective of politics, history, and membership within a particular population. Noll illustrates how LAWS cannot be brought under law, but even if they could be, what law is this, and what are its ends?

### Link—NATO

#### NATO security cooperation over emerging tech is inextricable from a history of violent cybernetic colonialism. The aff is a PSYOPS campaign designed to transform the world into data.

Archer, 20—Ph.D. candidate, University of Brighton (Megan, “Logistics as rationality: Excavating the coloniality of contemporary logistical formations,” <https://cris.brighton.ac.uk/ws/portalfiles/portal/22372242/Archer_Thesis_2020.pdf>, dml)

Here, the idea of an ‘information environment’ has come to be central to strategic military concerns. Indeed, for NATO, ‘information flow is now so prevalent, potent and unavoidable … it forms as much a part of the operations environment as the terrain or weather.’102 This NATO doctrine document elaborates the informational environment as consisting of information, technology and the minds that receive and process it – both echoing the cybernetic understanding of the human-machine system and combining it with what appears to be insights from behavioural economics:

Events in the world are transmitted as information through networks before getting into people’s minds; once there, the information is subject to pre-conception, interpretation, bias, agenda, adjustment and possibly retransmission. This is the information environment which is defined as: the information itself, organizations that receive, process and convey the information, and the cognitive processes that people employ, including the virtual and physical space in which this occurs. The environment encompasses the full range of traditional, new and emerging media technologies, all of which provide new possibilities for dialogue including delivery of PSYOPS messages and persuasive content.103

The mind is viewed here as part of the information environment; or, rather, the environment in which military operations are devised and enacted is extended into ‘people’s minds’ and their ‘cognitive processes’. This literal world-as-data is laid out as the new battleground, the mind consonant with and merely a terrain to be opened up for military operations, political messaging and consumer advertising alike.104

TARGET AUDIENCE ANALYSIS

This 2014 Allied Joint Doctrine for NATO utilises the concept and method of Target Audience Analysis as developed by the BDi, and used by SCL and Cambridge Analytica in most, if not all of their campaigns.105 Steve Tatham defines TAA as

the ability to empirically diagnose the exact groupings that exist within target populations. Knowing these groupings allow them to be ranked and the ranking depends upon the degree of influence they may have in either promoting or mitigating constructive behaviour. The methodology involves a comprehensive study of a social group of people. It examines this group of people across a host of psycho-social research parameters, and it does so in order to determine how best to change that group’s behaviour. … TAA is a decision-maker’s tool, which will explain and forecast behaviour – and make scientifically justifiable recommendations to implement programmes to change problematic behaviours. 106

Over the past decade the BDi(and SCL Group) delivered a number of training programs for NATO, and in Britain, for the Home Office, Ministry of Defence and the Foreign Office. TAA and their patented ‘Measure Of Effectiveness’ methods are now ‘best practice’ in NATO and UK Defence and info/PSYOPS departments and are widely used across different domains of counterinsurgency. 107 In the 2014 doctrine TAA is seen as a vital method in the tailoring of strategic communications and PSYOPS. The doctrine states that

[u]nderstanding and empathy are key to PSYOPS; target audience analysis is the tool by which this is achieved. Effective analysis should provide a rich contextual understanding of the cultural, historic and social composition of the target audience, along with a deep awareness of emotive and credible themes and symbols, all of which can be used to effect short-term behavioural and long-term attitudinal change.108

One example of the method in practice is Project DUCO; a sensitive UK Ministry of Defence trial in a ‘hybrid’ TAA approach in 2013 that was run by SCL Group.109 The stated aim of the pilot was ‘to assess the utility of this approach to identify emerging groups, the motivations behind their formation and their likely behaviours in a given context’.110 The report states that ‘SCL deployed their BDi Country Sweep methodology to identify key factors affecting instability in [redacted] and the Target Audiences (TA) associated with them. This approach isolated 25 key TAs as being critical to stability. The TAA methodology was then deployed to home in on understanding and intervening on ‘Young Unmarried Males’ (YUMS), seen as one of the most critical TAs [redacted]’.111 In using this methodology, the authors of the report cite the behavioural economic theory of “locus of control”. In an exposition of Project Duco in a report for the US Army War College, Tatham explains that a

[t]arget audience’s locus of control represents that audience’s view of what determines the course of future events. … A number of revelations flow from the finding that a given audience is characterized by, for example, an external locus of control. … An audience with an external locus of control is less inclined to take action, because in their worldview, doing so will have little influence on how matters will play out.112

He goes on to state that it is essential to determine the locus of control in a target population, as it shapes the target messaging and likelihood of revisions of behaviour. Further, he alludes to ‘[a] research project of the [Nigerian] electorate to establish under what conditions the public might rise up against the government if fraudulent practices were observed’, which ‘actually revealed that there were almost none – because their locus of control was particularly low.’113 Here, we should recall that SCL ran the election campaign in Nigeria 2015.114

In chapter 3 we saw the development of numerous social science projects funded by the US military across Latin America in the 1960’s with the most controversial being Project Camelot. This project and others like it attempted to create workable models of societies that would predict and pre-empt civil unrest by incorporating insights from sociology, anthropology, psychology and systems analysis. I have argued that these projects are another form of extractive ‘scientific colonialism’, where information about a nation (or in this case, a population or ‘target audience’) is extracted from it from the outside and manufactured into workable knowledge, and either exported back or used against it. Again, these were counterinsurgency tactics – the aim being to predict and prevent insurgent thought and practice. As a doctrine seeking to model population behaviour, TAA thus resembles the kind of cybernetic thinking I explored in the first half of the thesis, and is in many ways its spiritual (and genealogical) successor. TAA reflects this logistical turn in the modelling, prediction of and attempts to intervene in and change behaviour. In the first half of this thesis, we saw cybernetic modelling as an attempt to create a standard, unified language and hence model of everything that would describe, explain and thus help predict and modulate futures. I show that though by name, cybernetics dropped out of fashion, its methodologies and fundamental model of the world became subsumed into various disciplines as an aspect of logistical rationality. In TAA and across the persuasive architectures of the internet more broadly, the turn toward personalisation appears at first glance to be a move away from the more explicit claim to universal modelling. As Tatham writes,

There exists no universal communication model applicable to all groups and cultures. All communication efforts must be tailored to the local dynamics, and with respect to the behaviours one is seeking to change. Because audiences are multi-faceted and cannot be grouped as a population, influencing the different component groups of a society requires precisely targeted methods and approaches: One message – no matter how culturally relevant – does not fit all. Working out who to influence, why, how, when, and whether it is possible, constitutes the first steps of the TAA. Often, it will be necessary to influence one group in order to influence another.115

That TAA is deemed to be an empirical and ‘scientifically verifiable’ method to determine ‘exact groupings’ within a population, claiming to be able to both definitively induce and measure behaviour change within a particular audience or population seems to run counter to this claim. Though there is an increasing focus on difference, personalisation and precise targeting, within TAA, StratCom, info/PSYOPS and most widespread, throughout the commercial marketing sector, the overarching ‘model’ is the same. This is to extract knowledge and experience, translate it into (inherently impoverished and exclusionary) machine-readable data, and to use said data to create predictions and modulate behaviour as outcomes in line with organizational goals. That TAA is said to be applicable and is deployed across diverse situations and toward a multitude of goals – political, economic, commercial and military – is indicative of the scope and reach of this particular iteration of logistical rationality. In fact, TAA can be understood an updated and more comprehensive iteration of this dream of finding universal rules of communication and modelling: it works to enfold culture and identity into this project of universality. Here, differences can universally be mapped, and the world can still universally be rendered as data because the science, the models and the algorithms are complex enough to capture the complexity of the world itself.

DATA EXTRACTION FOR EXTRACTIVE INDUSTRY

Finally, I want to look to a project of Steve Tatham that is demonstrably a culmination of the logics outlined throughout. Tatham was listed as a senior advisor in Mackay’s company ‘Complexas’, a company deploying TAA and the various behavioural science and influence methodologies developed in the BDi and following the principles of behavioural economics, Public Relations (PR) and strategic communications, for the explicit purpose of helping to negate resistance to extractive industries projects in ‘frontier markets’ in Africa specifically.116 Tatham’s name has since been taken off the website and his involvement in this company scrubbed from the internet, save for the Internet Archive. In a supporting co-authored paper by Mackay and Tatham, they argue for the use of TAA in helping multinational corporations conduct extractive operations in ‘complex and unstable regions of the world’.117 They begin the paper by recognising that 1.5 billion people live in areas affected by conflict or other forms of instability; however, that ‘these areas are often also rich in resources’, and therefore ways to ameliorate conflict for the purposes of smoother extractive industries is vital.118 The correlation between a wealth of natural resources and the causes and legacies of conflict remains unexplored.119 Here as well we should think back to those programmes of modernisation and development that favoured infrastructure heavy, extractive, and export-led development, and the necessarily violent and extractive architecture of debt they produced as outlined in chapters two and three.

The paper laments lost profits due to MNCs collective failure to recognise, mitigate for and assuage local populations before resistance to projects occur – using the infamous example of Shell’s operations in the Niger Delta. In a sparse and underdeveloped account of the case, the authors argue that yes, there were some environmental damages, but overall, Shell spent too much on security and not enough on the development of the community, and that this led to unhappiness, hence resistance, hence a massive profit loss. No mention is made of the documented fact of Shell’s misreporting of the causes of leaks (accusing the community of sabotage when they have been identified as corrosion), the massive ecological consequences of the annual 240,000 barrels spilt in the area, the mounting evidence of neonatal deaths and other health complications, and not to mention the history of military and security repression and murders associated with the government and Shell themselves.120 Instead, the failure of Shell to generate maximal profits is seen as a lack of understanding of the ‘operational environment’ – assuming that security and development (in a very narrow sense of the word) will equal stability. Here again we see the need to go beyond Zuboff’s analysis of these processes as essentially nonviolent. Erasing these complex histories of violence, expropriation and the well-documented crimes of Shell in the Niger Delta, Tatham and Mackay create a blueprint for counterinsurgency focusing on how to influence opinion and quell legitimate dissent to damaging projects. The erasure of forms of domination enacted on communities and lands afflicted by large scale extractive projects forms the foundation for further domination and extraction. This epistemic violence, apparent in the circumscription of what is deemed worthy of inclusion in the models upon which the world is organised, actively shapes the organisation of violence in future projects, and further, people’s futures.

### Link—Securitization

#### Responding to security threats with predictive imaginaries of technology as humanity’s savior invests in a fantasy of cybernetic resolution that pumps fuel into the engine of global datafication. Only the alt can solve.

Robles-Anderson, 21—associate professor of media, culture, and communication at New York University (Erica, ““Wave Fronts of Calculation”: A Response to Achille Mbembe,” Public Culture (2021) 33 (1 (93)): 35–40, dml)

We are twenty years into the twenty-first century. The world is flush with moneys sans fiat. Corporations intimately connect to everyone yet answer to no one. Life itself can be engineered and patented. Artificial intelligence will solve everything. We live on a swiftly tilting planet heading toward ecological collapse.

In “Futures of Life and Futures of Reason” Achille Mbembe traces a constellation of megaprocesses brutally depleting the planet's resources while pushing life into ever more extreme conditions for survival. Now is a nasty, brutish place. How can we live within this crisis of our making? When finance capitalism turns out to be the shared global infrastructure, perhaps the best recourse is to forge a new Leviathan to try and stay the reach of the invisible hand.

But Mbembe's essay goes another way. It is an attempt to mobilize critical imagination. It reckons with the logics of interlocking systems in order to reanimate our sense of contingency. In a “society of security” every attempt will be made to foreclose ungoverned possibilities under the auspices of containing risk. Social order will be “dominated by the irrepressible need for adhesion to a collection of certainties” (24–25). This irrepressible need is operationalized through borderization and computing, processes which constitute two sides of the same coin.

When borderization and computing meet in the conditions of surveillance capitalism and ethnonationalism, then voilà! Only Palantir can “Save the Shire.”1 For those not fluent in Middle Earth, a palantir is a seeing stone, a magical artifact for viewing at a distance. The Tolkienism is an aptly chosen name for a data-analytics company that supplies technology for the US Department of Defense and the US Department of Homeland Security. The Shire, it turns out, is conveniently located near Stanford University. Palantir is currently the single-largest occupant of commercial real estate in Palo Alto, California. With a vantage from Silicon Valley's ivory tower, the backing of venture capitalist and PayPal cofounder Peter Thiel, and a recent IPO, a society of security has a global market to conquer and a world to win.

Mbembe's essay places the interlocking capacities of borderization and computing within a speed regime. Speed has long been analyzed as the logic and mechanism for bringing economy, technology, war, and psychic life into common formation. As Paul Virilio (2012: 41) wrote, “Speed now illuminates reality whereas light once gave objects of the world their shapes.” But here I pause. I am not convinced that a corporate actor such as Palantir is possible in a speed regime. Indeed, there is something else, something latent in Mbembe's essay, something other than speed.

Consider the following passage:

Current myths claim that technology constitutes the best tool for governing these arrivals, that technology alone allows for the resolution of this problem—a problem of order, but also of awareness, of identifiers, of anticipation and predictions. It is feared that the dream of a humanity transparent to herself, stripped of mystery, might prove to be a catastrophic illusion. For the time being, migrants and refugees are bearing the brunt of it. In the long run, it is by no means certain that they will be the only ones. (25)

“The resolution of this problem” is a telling double entendre. Resolution can mean the resolving of a conflict. Resolution can also refer to the sharpness of an image. To improve resolution is to see in greater detail, to bring something more sharply into view. Data technologies promise both of these things. If only every problem were technical rather than political then more data could indeed resolve every conflict. It is the fantasy of resolution that drives investments—financial, political, psychic—in data-extraction techniques and surveillance systems. It is also the liberal rationale for deferring moral reasoning and ethical action. We shall wait and we shall see and then we shall decide. But later never comes and thus decisions are not made.

Governing how the future arrives is beyond the capacities of a speed regime. Speed regimes exploit differential relationships to space-time. Power is action at a distance, aimed at expansion and growth. Resolution is more akin to saturation, concentration, or finer-grain detail. Resolution does not necessarily require speed. Resolution reveals layers upon layers of presence and absence, signal and noise, order and disorder. Even as I write these words a surveillance plane flies above a police helicopter, which hovers above a drone, which flies above street-level surveillance cameras, which watch over mobile phones. It is faith in resolution that powers politics by the state, politics in the streets, and politics in online discourse. It is faith in resolution that powers global visions of a computable Earth. We are moving from a speed regime toward a smart regime.

In the age of the smart regime, borderization operates at any scale. From the intimate to the planetary, the proximate to the distant, investments are made in the capacities for modulating mobilities. Borderization, as Mbembe argues, exceeds the category of borders precisely because it dynamically operates irrespective of movement, territory, or event. Bodies, whether mobile or immobile; spaces, whether under the auspices of the state or not; life, whether microscopic or megafaunal; events, whether in the past or future, are reservoirs for computational possibilities. They are standing reserves for data extraction. But they are also liability sinks for uncertainty.

Information theory is the mathematics concerned with resolving uncertainty. Uncertainty is entropy, disorder of the system. A society of security can promise to eliminate uncertainty. A smart regime can embrace the opportunities it presents. Donald Rumsfeld (2002), that emblematic architect of post-9/11 brutalism, perhaps put it best: “Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know.”

But of course, knowing produces a surfeit of unknowns. Every attempt to resolve uncertainty will find it comes back multiplied like the many-headed hydra. A society of security promises to do more than eliminate the unknown. It promises to gather the certainties not only now, but always. It is the governing of every possible mode of arrival. The telos of such an ambition is a familiar one. We've seen this political theology before. Today, however, it is revived through the dominion of a smart regime. Someday, all-knowing shall come to pass and everything shall be gathered up in all its certainties into one great ethnonationalist hard drive in the sky. So say we all.

Critical imagination is ever watchful against that “irrepressible need for adhesion to a collection of certainties” (24–25). It maintains its vigilant defense against both Big Brother and Mammon. In truth, however, totalizing systems never need appear. The mere prospect of their arrival is enough to fuel speculations. Those speculations are enough to generate markets and secondary markets. They are just real enough to mobilize the writing of legal frameworks and regulations ready to embrace the future fait accompli. We invest in behavioral futures. We have faith in the foreclosure of possibilities. Ours is a religion of nothing beyond our own expectations. No butterfly shall flap its wings without every possible outcome being always already algorithmically known.

In reality, we live in a world that flickers between the calculable and the incalculable. Calculability is a substitution for the known. Artificial intelligence is just another bill of goods sold under the auspices of the smart regime. It is the proposal that computers are superior because of their speed and objectivity. It is the claim that algorithmic governance is a matter of cognition. Computers are eminently rational. They must come to govern precisely because they lack passions, drives, vested interests, and interiority. All that is left to determine is whether or not the moment has arrived when machines think better than we do. All conflicts will be resolved when everyone, everything, and every place is watched over and administered to by the machines of loving grace.

Mbembe moves through an analysis of the political stakes in a computational age by marking out the trials of reason. But here I wonder if it might be productive to further consider how the distinction between reason and unreason differs from the distinction between reason and rationale. The former pair mark the distance between human and animal, thought and passion, vested interests and general will. The capacity for reason is the ground condition for liberal subjects. The latter pair, however, entails a procedural matter. Rationale is a bureaucratic form of domination; it is that which traps reason inside a Weberian iron cage.

To return again to information theory, the difference between these trials for reason matter quite a lot. The realpolitik of artificial intelligence is machine learning. Machine learning is not an exercise in reason but an exercise in algorithmic decision making. Moral reasoning was never the goal. The entire question of intelligence is a red herring. This is agency without reason, a complete deferral of our moral responsibility. We shall not aspire under any terms to be, as President George W. Bush put it, “the Decider.”2

We shall cede even our authority to interpret that which has already been decided. We do not say, “the algorithm decides x but instead we do y.” We say, “we shall do x because the algorithm says x. If we do y, we shall rebuild the algorithm until it predicts that we would do y.” Artificial intelligence is unmeaningful. Machine learning is tautology. There is an evacuation of theory, critique, or meaning in favor of manufacturing correlations by insisting that maps and territories simply must align.

Perhaps the futures of life and the futures of reason are being played out through a political economy of rationales. We destroy ourselves even as we feel powerless to stop destroying ourselves. We must take care, however, to notice that even algorithmic governance has variety and contingency. Decisions produce a surfeit of indecisions. There is never only “the computational.” Perhaps we would do well to take a cue from political philosopher Hanna Pitkin's critique of Hannah Arendt's analytic interest in “the social.” Beware those categories that tempt us to see “an absence of politics where politics belongs” (Pitkin 1998: 252).

Mbembe coins a phrase, one he has used before, and one this particular reader can only hope forms the basis for his future work. That phrase is “wave fronts of calculation” (27). It is a delightful play on wave-front calculations, which are the mathematics for describing a dynamic surface and its temporality by taking into account the contribution of every single point. In that translation from mathematics to social theory something emerges, a way forward for critical imagination within a smart regime.

Wave fronts of calculation might provide a way for cultural analysts to detect reformulations and emergences in an always-shifting field of couplings between life and machine. We might explore wave fronts of noncalculability, or follow the shape-shifting surfaces of unknowns. We might even come to recognize a diaspora of noncertainties that might form the basis of political struggle that is in but not of the smart regime. Data politics will require new levels of comfort with ambiguity, with ways of living and acting and reasoning before everything is resolved. The task ahead requires thinking financialization, calculability, mobilization, governmentality, and border politics all at once. Critical imagination requires camaraderie. Thus, we look forward to what we are sure will be a robust and generative debate about “Futures of Life and Futures of Reason.” After all, fields don't transform when debates are settled; they transform when conversations begin.

### Link—Security Cooperation

#### European security cooperation is wedded to a biopolitical regime of algorithmic violence by data. The aff’s outdated speculations miss how cybernetics have reshaped security governance.

Bellanova and Fuster, 19—Postdoctoral Researcher at the University of Amsterdam; Research Professor at the Vrije Universiteit Brussel’s Faculty of Law and Criminology (Rocco and Gloria, “Composting and computing: On digital security compositions,” European Journal of International Security (2019), 4, 345–365, dml)

Well before the so-called Snowden revelations,23 CSS scholars had already engaged with security technologies. In particular, critical researchers were among the first to look at how data-driven systems (re)shape the security governance of the international. They cast a light on the growing deployment of biometric controls, and the multiplication of databases as security mechanisms.24 Focusing on data analytics, their work now unpacks the forms of knowledge that underpin data-led security practices,25 and investigates the institutional relations that organise sociotechnical assemblages.26 Often in conversation with Surveillance Studies,27 critical security scholars have built a solid literature on the many ways in which governmental and private actors use digital data to govern populations. However, what is often missing in these accounts is proper attention to the diverse roles of (digital) data. Data are implicitly understood as if they were just ‘out there’, naturally available in great quantity, as an obvious by-product of our digital age. Even when critical scholars think of data as the data-doubles of individuals,28 the tendency is to present them in rather immaterial terms. For instance, the digital format of data is considered as a mere facilitator for the spread of algorithmic governance. It is only seldom thought of as a crucial site of bio- and disciplinary politics, that is, where a ‘whole range of decisions that affect the look, feel, experience, and workings of a medium’ happen, and where ‘a set of rules according to which a technology can operate’ are decided and tentatively imposed upon others.29 In other words, in most CSS literature, data are not something to be problematised and accounted for. They are assumed as a given, an instrumental entity that just makes the work of those who govern easier, and that facilitates exchange and cooperation among security actors.

Increasingly, however, this view about data and security practice is evolving. For instance, Evelyn Ruppert et al. state ‘that data has a performative power that is resignifying political life’. 30 Their perspective opens up a more historical and sociological approach of datafication processes. Their main focus is on the social dynamics that give meaning to data practices. As they note, ‘data is not an already given artefact that exists … but an object of investment … that is produced by the competitive struggles of professionals who claim stakes in its meaning and functioning’. 31 There is great value in this kind of approach. For instance, Didier Bigo’s study of data analysts working in security agencies shows how the very accumulation of data becomes a powerful justification to shape any further vision of European security cooperation.32 Moreover, research carried out in the same vein casts a light on how diverse security agencies rely on data as valuable capital to establish transnational and public-private relations,33 and to govern at a distance.34

Researchers focusing on pre-emptive security unpack an important facet of data politics. Their studies show how the present and the past become data sources for visualising a ‘speculative’ future, which becomes the informational ground on which security decisions about action can be taken today.35 These works highlight the crisis of the representational model through which we generally understand data. What security actors work with, according to Louise Amoore, is mainly a ‘data derivative [that] is not centred on who we are, nor even on what our data says about us, but on what can be imagined and inferred about who we might be – on our very proclivities and potentialities’. 36 In other words, the power of data does not lie in their conveying information about us or about a given state of existing affairs. Data – and in particular digital data – have value for security actors because they are composable into what Amoore calls a ‘mosaic’, that is, the backdrop justification of a security decision that aims to prevent a future state of affairs from coming into being.37 Her work highlights how this post-representational use of data in security practice is highly problematic. First of all, it is difficult for those who are governed to challenge a mosaic whose tiles are often shrouded by secrecy, and whose selection criteria are not disclosed by security actors.38 But it is also problematic for some security practitioners. As Amoore notes, ‘[t]he “real time decision” … is simply read off from the derivative – replacing the agonism and radical uncertainty of decision and placing responsibility in the realm of response.’ 39 This form of automation – or ‘decision support’ system, in the official discourse of some institutions40 – redefines the role and power of some security actors. For instance, it disempowers those that have no say in what is left to ‘real decision[s]’, that is, the seemingly mundane adjustments of a security composition’s parameters.41 In sum, this literature foregrounds the necessity to take seriously the diverse ways in which data become part of a security composition, and how they affect the other elements of the same composition.

### Impact—Algorithmic Violence

#### Algorithmic violence permeates every level of digitalized data infrastructures from the moment of their creation. Err neg—you should overcorrect in your decision process to prioritize cybernetic violence against the global periphery that their Western authors never account for.

Jacobsen, 21—Senior Researcher, Center for Military Studies, University of Copenhagen (Katja, “Toward a Critique of Algorithmic Violence,” International Political Sociology (2021) 15, 121–150, dml)

Put differently, algorithmic violence begins much before the biased and discriminatory processing of data, with all its tacit injustices and violence. Moreover, the type of violence implied at the level of the very making of machine-readable data infrastructures looks different if we shift attention to the global periphery. Accordingly, exploring the force needed to make computation possible must include attention to force and violence at different points and different contexts of data “collection” and infrastructuring. Introducing contemporary security and intervention technologies as a lens onto the making of digital infrastructures and increasingly pervasive forms of data collection, as key elements when discussing algorithmic violence, enables much-needed attention to global power relations, beyond racial biases in algorithms.

Various contemporary intervention technologies—be they military or humanitarian—entail the transformation of fingerprints, iris patterns or other “unique physical characteristics” into digitalized, machine-readable data. Biometric fingerprint or iris scan technologies are used not only by the US military to register Afghan citizens encountered in Afghanistan, but also by numerous other intervention actors, including humanitarian and development agencies (Johns 2017; The Engine Room and Oxfam 2018; Lindskov Jacobsen 2019). Sometimes the setting in which such non-military agencies collect biometric data from individuals is a setting where the US military is also conducting counterterror operations, as in Afghanistan or Somalia.

Looking at the widespread use of intervention technologies like biometrics offers illustrative examples of practices in the global periphery that entail the making of enormous amounts of machine-readable data, including sensitive data from vulnerable populations seeking aid and protection from humanitarian agencies. Beyond the US military, a wide range of agencies use intervention technologies that more or less explicitly partake in the production of a data infrastructure that then enables subsequent algorithmic processing aimed, for example, at identifying targets or suspects.

Besides extending the analysis “before” algorithmic processing, it is also important to extend our critique to one that engages with, and makes visible how, the making of machine-readable data plays out in the global periphery, including critical differences in “data generating” conditions and how such differences translate into specific expressions of violence. While for some the cost of declining to give up your biometric data could simply be the convenience of accessing your phone only by the touch of your finger(print), even this is misleading as machine-readable data may be collected even if you do not access your phone using fingerprint biometrics. Yet, the point to stress here is the importance of recognizing that analyses that look at “Western” contexts are not representative of the multiple forms of violence related to data gathering, data retention, etc. (see also Jacobsen 2012; Frowd 2017). Empirical evidence from two types of intervention contexts illustrates this point.

In some intervention contexts, declining to give up biometric data entails much more than foregoing convenience. In most intervention contexts, the cost of declining to give up personal data like biometrics is far more consequential than for “Western citizens.” Imagine being a refugee in need of assistance, with nowhere else to turn than to UNHCR. Yet, UNHCR has decided to make biometric registration a standard procedure when assisting refugees (Lindskov Jacobsen 2017; Madianou 2019). Thus, declining to give up biometric data (which algorithms may later process) might in such cases entail far more than giving up convenience. It could potentially have fatal implications, if it results in individuals being denied assistance or in individuals deciding not to register because of data sharing concerns. The point to stress here is the different circumstances under which machine-readable data are being generated in various intervention contexts in the global periphery. Besides differences in meaningful opt out possibilities, another issue is the difference in age limit. The example that most vividly illustrates this is the recent trialing of fingerprint biometrics for infants in various intervention contexts in the global periphery, sometimes involving humanitarian agencies (Parker 2019). In the EU, as another example, the age at which fingerprints are required for visa applications is currently twelve years.

Further illustrative of differences—differences with potentially violent implications—between the making of machine-readable data in “Western” contexts, is the fact that once collected by UNHCR, the policy is to keep biometric data indefinitely, even once an individual ceases to be a refugee. Not only does this policy differ significantly from restrictions on biometric data retention in, for example, the EU, these examples also illustrate crucial differences at the level of the very making of machine-readable data infrastructures. These are differences that a critique of algorithmic violence must help make visible, with attention to how they translate into a differential distribution of security/insecurity.

Moreover, even in cases where an individual agrees to give up biometric data, this too risks bringing added insecurity, for example, in the form of risks of retaliation from Al Shabaab in Somalia. If Al Shabaab gains access to biometric data showing exactly which individuals have received aid from Western organizations (that Al Shabaab sees as an enemy), this could have fatal repercussions for individuals, who cannot readily deny their iris pattern or fingerprint. Data collection may also entail violence in other ways, as when implicitly encouraging illegal border crossings as part of the very journey required for persons to have their data collected: “Almost a year after submitting his application for family reunification, Abdul was informed by the Immigration Service that his wife and children had to be DNA tested at a Danish embassy in order to validate relations of kinship in the family. His family therefore paid an ‘agent’ to help them undertake an illegal cross-border journey to an embassy in a different country” (Olwig et al. 2019, 194).

In short, there are important forms of violence at the very point of data collection that need to be included, made visible, and understood as part of our critique of algorithmic violence. Indeed, even if these forms of violence happen before the algorithmic processing, they are crucial given that the making of machine-readable data (e.g., the iris patterns of millions of refugees) is a precondition for subsequent algorithmic processing. These data, generated in the context of various contemporary intervention settings (military and humanitarian), form part of a broader data infrastructure. That infrastructure itself entails violence even before adding the algorithmic processing of data, simply at the very point of insisting on its massive collection, sometimes justified in the name of humanitarian protection. Put differently, there is violence in the form of immediate disqualification and resulting insecurity as well as in the form of future uncertainty (for what purposes may these data be accessed and algorithmically processed) that we need to attend to when thinking about questions of algorithmic violence. Appreciating that the generation of accessible, digitalized data is a precondition for algorithmic processing, these examples should make clear why, when thinking about algorithmic violence, we need to attend to questions about the differential conditions under which such data are generated, collected, stored, and shared. What violence goes into the making of the digitalized data infrastructures that computer-implementable instructions can then tacitly process—sometimes with fatal consequences—as for the individual whose fingerprint was allegedly lifted off an improvised explosive device in Somalia, and recognized at a border-crossing point as he was trying to enter the United States from Mexico (Kimery 2018)?

### Impact—Circumvention

#### Technology has outpaced international law—zeroes aff solvency.

Maas, 19—PhD Fellow, Centre for International Law, Conflict and Crisis, University of Copenhagen (Maathijs, “International Law Does Not Compute: Artificial Intelligence and the Development, Displacement or Destruction of the Global Legal Order,” Melbourne Journal of International Law 20, no. 1 (July 2019): 29-57, dml)

The 'soft' argument holds that AI systems combine a number of features that ensure they (and the changes they create) will not be easily handled, and that there may be insufficient international political agreement or leeway to carry out at least some of the important international legal developments or 'patches' specified above, 118 functionally making it an intractable challenge or puzzle to international law. This is not to suggest that AI systems would be the only or first technology to threaten such non-incorporation. For instance, Michael Glennon has argued that both the laws of war and international regulation of weapons are premised on the notion of attributability of attacks, and that in so far as cyber weapons render it easy to sidestep easy, reliable or timely identification, it is not surprising that there has been relatively little meaningful international law regulation of this technology. 119

Likewise, Picker has identified a number of common issues that arise at the interface of technological change and international law. 120 One problem is timing: international law can be very slow to accrete and react to challenges. Under the best of circumstances, customary international law may be created in as little as 10 to 15 years. 121 While treaty processes are somewhat faster, 122 both are still extremely slow compared to technologies that can rapidly bypass the status quo, forcing a re-evaluation of treaties.

However, while failure to be proactive is problematic, the problem of stepping into a regime before it is clear how a technology works also creates problems. 123 Examples are found in the early legal scholarship during the 1950s and '60s on regulating what was expected to be the imminent technological capabilities of weather control, 124 or the deep seabed mining provisions of the United Nations Convention on the Law of the Sea, which ultimately may have jumped the gun on the imminence and maturity of such seafloor mineral exploitation technologies. 125 The problem with AI is that, rather than a single technology, its performance in diverse applications can depend on parallel developments in computer hardware, data availability and (various schools of) software, rendering reliable, trusted predictions difficult. Indeed, fast-moving emerging technologies such as AI, nanotechnology and synthetic biology create their own, unique sets of challenges, which potentially render them politically contentious to international law regimes (and perhaps to many other governance strategies in general). For one, many of these technologies, far from being narrow and domain-specific, offer breadth and potential power. Their very versatility introduces pervasive uncertainty as to the future course of their development and use. This makes it hard for different states to accurately project and anticipate the social impacts of the technology.

Indeed, this is exacerbated by the fact that rather than a single 'technological trajectory', these technologies often comprise a host of diverse clusters in schools of development and application, which can advance at different rates (creating uneven, stop-start advancement in different applications), or suddenly 'unlock' new capabilities in and for each other.126 The convergence of multiple technologies (that may speed up one another's development, or affect one another's modes of application), or even simply their simultaneous development and introduction, render regulatory oversight difficult at a national level, 127 and treaty negotiation perilous at an international one.

### Impact—Endocolonization

#### The cybernetic episteme causes planetary endocolonization, where the automation of the planet forces colonialism inwards in a spiral of self-devouring violence that causes extinction.

Gandesha, 22—Institute for the Humanities, Simon Fraser University (Samir, “The Market Lives on Death: The Endocolonizing Logic of the Fascist Moment,” *Technology, Urban Space and the Networked Community*, Chapter 2, 29-49, SpringerLink, dml)

Present-day fascism, in contrast, takes refuge in the past as such: in a supposedly “great” America before the Civil Rights Act (if not before the Civil War); in an authentic homeland of the Magyars in Hungary; and in a purified India for Hindus (Hindustan). In other words, contemporary fascism makes little or no claim on the future in an era of its ecologically planned obsolescence. In this, it is, as Aimé Céasire had already pointed out in Discourse on Colonialism, a form of European colonialism applied to Europe itself—endocolonialism, as it were. Today, as we have seen in the Greek case, its weapons are German banks rather than tanks. As I have written about elsewhere, we see this, as well, in the willingness of that model of kumbaya “liberal multiculturalism”—the Canadian state—to deploy the logic of the exception to permit on-going large energy infrastructure projects (hydro, LNG, and bitumen) under conditions of a COVID-19 lockdown. Recalling the weaponization of disease in the earliest days of contact between Indigene and Colonizer, this puts already vulnerable Indigenous communities at serious risk of a health catastrophe. As the meme goes “Genocide is not an essential service!” The same logic can be discerned in the Modi Government’s resource extraction agenda driving the war on India’s tribal peoples (Adivasis) in Chhattisgarh, not to mention in Jair Bolsonaro’s iron-fisted developmental programme in the Amazon basin.

Spectres of fascism loom, then, as a response to the chronic financial and ecological crisis of capitalism. Fascism in the twentieth century offered, in part, a solution to the economic slump via an acceleration of the extraction of absolute and relative surplus value from living labour by smashing the revolutionary Left, independent trade unions, and other working-class institutions. This was, indeed, the original meaning of Mussolini’s (and Gentile’s) idea of fascism based on the image of what was called, in Latin, fasces, a bundle of rods and protruding axe blade symbolizing the penal powers of the Roman state wielded by the magistrate. Fascism entailed, then, the binding together of the rods of the state, capital, and labour. It is, perhaps, telling that both the US and French Republics adopted and maintained this proto-fascistic Roman symbolism through the eighteenth and nineteenth centuries.

In contrast to its anti-human twentieth-century form, contemporary “post-human” fascism centres on a deepening of resource extraction on the very precipice of massive deskilling of labour, and widespread automation and employment of robotics, machine learning, and artificial intelligence to wit—the prospective obsolescence of humanity itself. Such a logic entails what, in Critique of Black Reason, Achille Mbembe calls the “becoming Black of the world,” the creation of “abandoned subjects”:

There are no more workers as such. There are only laboring nomads. If yesterday’s drama of the subject was exploitation by capital, the tragedy of the multitude today is that they are unable to be exploited at all. They are abandoned subjects, relegated to the role of a “superfluous humanity.”

This superfluousness now becomes clear as governments, by omission or commission amidst the pandemic, put members of society deemed surplus as well as workers, particularly people of colour, at grave risk of contracting or even dying from the virus (a recent UCSF study conducted in San Francisco’s Mission District showed that 95% of positive cases were Latinx). Of course, it could be argued that human labour has never appeared more “essential” than in this historical moment. Yet, states are also showing themselves quite willing to put essential workers at such an extreme risk as to even die en masse for want of PPE, for example. MTA conductor and writer, Sujatha Gidla, reports her co-workers as saying “we are not essential, we are sacrificial” (New York Times, 6 May).

In his depiction of the aftermath of catastrophe, possibly nuclear war, in Endgame, Samuel Beckett presents the destruction of nature as taking a specific spatial configuration in which the dialectic of time, itself, has seemingly come to a standstill. He shows, in coldly unsentimental though often humorously ribald terms, the obsolescence of human beings, reduced as they are to pure existence, and subordinated to the inscrutable machinations of geopolitical forces beyond their understanding and control. The necessary supplement to Endgame, according to Stanley Cavell, is Kubric’s Cold War masterpiece Dr. Strangelove.

Beckett depicts the parents of his anti-hero, Hamm, as literally reduced to a form of societal refuse, having been confined to garbage bins—perhaps signifying for us today, all-too painfully, the perilous state of nursing homes—warehouse-coffins for human beings poised somewhere between life and death, waiting for an end to the excruciating game of waiting. They wax nostalgic (“Ah, the good old days,” sighs Nell) about the days when they were provided with sand, rather than sawdust, in their metallic cloisters, a signifier of happier times spent on the beach rather than of a nature that is now “corpsed.” The catastrophe of the present and its relation to the recent past forms a continuum of the same unfolding disaster Walter Benjamin writes about in his final text “On the Concept of History” before his desperate flight from the Nazis and consequent suicide in Port Bou. Today, governments seem prepared to sacrifice the elderly, the infirm, poor, indigent, Black, and brown to the iron laws of the market. Republican Lieutenant Governor of Texas, Dan Patrick, recently suggested that grandparents might consider sacrificing their health and lives for their grandchildren, which is to say, for the health of the economy. But this logic is nothing new. It was previously discernible in each press release from myriad corporate head offices of massive downsizings producing an immediate, dramatic uptick in their share prices. The market lives on death (Fig. 2.2).

If we take as our definition the classic account of fascism as that revolutionary mass movement comprising an alliance between industrial capital and the petite bourgeoisie ranged against the working class and its political organizations, in the context of imperialist rivalries and discrete capitalist crises of overproduction, then it is far from clear that what we face today can be described as “fascism.” After the defeat of organized labour, there is precious little resistance to dead labour’s machinic extraction of surplus value from living. Such a defeat clears the way for redoubled colonization and endocolonization, racism, militarism, and, ultimately, war.

### Impact—Ethics

#### The automation of the planet will literally unravel the societal foundations of ethics and emotional interaction.

Grove, 20—Associate Professor of International Relations at The University of Hawai’i at Mānoa (Jairus, “From geopolitics to geotechnics: global futures in the shadow of automation, cunning machines, and human speciation,” International Relations, 2020, Vol. 34(3) 432–455, dml) [expanded 100,000 to “a hundred thousand,” denoted by brackets]

In Cavell’s account the general economy of violence that characterized the sadism of slavery could return again but differently. Rather than a great chain of being or the superiority of some races over others, the very concept of violence as a category distinct from force or change could be lost. Although extreme, can we not already see this transformation underway in the extreme forms of instrumentality that characterize decisions regarding collateral damage, counter-value targeting, or economized discourse on immigration and refugees?56

More than a transformation of moral economies, the automation of humans and the augmentation of humans, represents the possibility of making physical and habitual what is now normative and discursive. Resembling Cavell, David Roden proposes what he calls the disconnection thesis, in which Cavell’s nightmare scenario unfolds only among some humans for whom the sentimentality of bodies, reproduction, and human connection impede further evolution of the species.57 Whether it is those who dream of a singularity in which human consciousness becomes digital or one of the U.S. veterans who have had mood altering computer chips implanted into their brains, some humans will increasingly alter or altered their brain-body networks to alter their cognitive and perceptive capacities.58

During the summer of 2018 researchers at the University of Washington and Carnegie Mellon successfully networked three humans via EEGs and transcranial magnetic stimulation. The three individuals were able to collaborate to play a simple video game resembling Tetris.59 The participants were able to communicate and sense each others’ thoughts without the use of language or even being in the same room. Similar experiments have successfully sent text message from one side of the country to the other making at least a limited version of brain to brain communication a reality.

In the dark light of geopolitics one can imagine what today takes the form of geographic and class divides in connectivity and medicine taking the form of different classes and territories of consciousness and communication. Given the already gossamer fragility of international solidarity and trans-border empathy one can further imagine cyborg cultures quite literally tuning out of the world left behind. Roden’s disconnection thesis argues that as these new forms of networks and augmentation develop so too will cultures and moral awareness diverge.60 For those without the need or desire to use oral language accelerating the pace of technological change within new kinds of communities it is not difficult to follow Cavell to the precipice of his posthuman horror. While the biological racial fictions of colonialism, apartheid, and settler-colonialism still hold on in the face of overwhelming scientific evidence to the contrary how much more would real material differences in forms of life accelerate existing geopolitical violence?61 Even the beginnings of disconnection could intensify the already renewed fights between extractive industrial modernity and those indigenous communities fighting for their ancestral lands and ways of life. And what of the swelling numbers of multi-generationally unemployed masses who will lack the capital to upgrade? One can imagine class no longer being marked by linguistic markers or knowledge of wine but the physical ability to interface with white color working spaces. More and more companies have already begun microchipping their employees for security and tracking crossing the threshold of the skin in the process of making labor.62 The digital divide in labor of who can and cannot telecommute is already determining the patterns of employment and unemployment in the first 6months of COVID-19 shutdowns.

The speciation of interfaces and sensory capabilities could amplify the already growing trend.63 The point of Roden and Cavell’s thought experiments are to show that such a separation would be more than just a return to or intensification of racial or class divisions. Instead the very embodied character of moral appreciation, the shared languages and cultures, the perceptive capacities to experience beauty or tragedy could be altered to the point that the diffracted species of once human beings would live in a state more closely resembling that of Homo sapiens 100,000 [a hundred thousand] years ago in which there were multiple species of upright anthropoids and none of them could live without the fear of predation by other non-human animals or each other. The medium of encounter fundamentally altered. However, in this speculative history of the future the divergence would not have been by happenstance but to lock in interests and geopolitical advantage. Difference by design.

This may all seem too far-fetched. How could humans lose their most basic capacity for socio-emotional intercourse? I want to argue that things need not change that dramatically to see the beginnings of such a divergence. One can look around a crowded bus filled with people each glued to their smart phone, tables of families at restaurants each separated by their individuated devices or an office filled with screens each telecommuting the pilot to a drone in the field thousands of miles away to see the beginnings of such a speciation. Or we could return to the beginnings of international thought, the first moments of European geopolitics and remember its multispecies beginnings when just 50 years after the arrival of Christopher Columbus Bartolomé de las Casas pleaded with the Castille thrown to recognize the soul and therefore humanity of the ‘Indios’. Instead, of course, the extermination continued which treated the people of the Americas as ‘piles of dung in the middle of the road’.64 Geopolitics was in some sense founded on the premise of many human species rather than one human species.65 The inability for so many to see their human counterpoint at a moment of encounter in the new world speaks to the precedent of a truly dark enlightenment. That is, technological and martial advance without any corresponding moral awareness. A new such speciation that included the inability to even speak to one another much less recognize some common heritage or shared community of value would make the efforts of Las Casas and those who continue to fight against the finishing of the settler-colonial project entirely potentially invisible.

### Impact—Exchange Abstraction

#### Extinction?

Steuer, 19—research fellow at the Centre for Applied Philosophy, Politics, and Ethics (CAPPE) at the University of Brighton (Daniel, “Prolegomena to Any Future Attempt at Understanding Our Emerging World of War,” *War and Algorithm*, Chapter 2, 33-36, dml)

The danger of theoretical mimesis follows from the spell cast by the universal monoculture and the impoverishment of the imagination that accompanies it. Exchange abstraction is a real abstraction; it informs our thinking and our practices—that is, how we turn the world into the “world”—to the point of disallowing deviating practices and ways of acting and experiencing. The system of interconnected mechanisms for the exchange of money, energy, and information constitutes a medium that can no longer be analyzed according to conventional political, social, economic, or military categories. The escalating nature of this system is driven by the expansion of capital and by the fact that it cannot be controlled by any normative regulations: it is a postnormative medium in which techno-economic partisans—as (in-)dividuals— replace traditional subjects as agents.

Critical discourses often mimetically reproduce the system’s properties and therefore end up by posing Manichean alternatives. One of the most perfect cases of the mimesis of universal monoculture is Bruce Sterling’s vision of a world built on what he calls “SPIMES,” manufactured objects that

begin and end as data. They are designed on screens, fabricated by digital means, and precisely tracked through space and time throughout their earthly sojourn. SPIMES are sustainable, enhanceable, uniquely identifiable, and made of substances that can and will be folded back into the production stream of future SPIMES. Eminently data-mineable, SPIMES are the protagonists of an historical process.178

This vision turns the nightmare of an all-pervasive IoT world (a world in which everything is tagged and tracked) into the paradise of an endless creative transformation, running as a frictionless machine, a perpetuum mobile populated by “Wranglers,” as he calls the “people within an infrastructure of SPIMES.”179

The disturbing aspect of Sterling’s optimistic book is that, in the name of sustainable creativity, it calls for a techno-logistical world that would also perfectly fit the needs of the military planner, security expert, and Caerus analyst. The nightmarish aspect of this vision quickly becomes clear if we substitute Foucault’s neoliberal homo oeconomicus for the “Wrangler.” As “an entrepreneur of himself,”180 he represents the commodification not only of human labor but also of the human body, the human being as such. He is “an arbitrary bundle of ‘investments,’ skill sets, temporary alliances (family, sex, race), and fungible body parts.”181 This individual is lodged “within the framework of a multiplicity of diverse enterprises. . . . And finally, the individual’s life itself—with his relationships to his private property, for example, with his family, household, insurance and retirement—must make him into a sort of permanent and multiple enterprise.”182

It is not at all inconceivable that it will soon be possible to mortgage your body (to promise your organs or tissue for donation, for instance, in order to raise capital or service your debts), in particular if—in line with the fundamental contradiction of universal monoculture—the very body of the neoliberal (in)dividual will be seen as nothing but data. The Visible Human Project, the translation of an entire human corpse into data sets, which began in the early 1990s, rests on “an equation of digital code with vitality” and on the “desire for bodies to behave as closed mechanical systems with reversible temporalities, rather than as non-reversible, chaotic systems which necessarily move towards death.”183 Whether or not the project is medically useful, it bears all the hallmarks of our universal monoculture. In particular, the changes that the body undergoes in the process of being translated into data are considered a technical problem that can be solved. The categorical difference between life and death is slowly erased by technological improvements until flesh-and-blood bodies and digital revenants become indistinguishable.184

Foucault’s lectures from 1977/78 and 1978/79 have been read as “a coherent argument for the positive force of globalization.”185 And, in fact, one might go further and suggest that, in his notions of power and the dispositif, one can observe a mimetic approval of neoliberalism (and universal monoculture). Then there are Jean-Luc Nancy’s reflections on “struction,” on a world in which Being has been replaced by “being with” and in which it is “truly not a question of order or organization that is implied by con- and instruction.” Aimed against extraction and hierarchy, they end with “the heap, the non-assembled ensemble. Surely it is contiguity and co-presence, but without a principle of coordination.”186 Again there arises the question of how to distinguish between the Manichean alternatives, between the liberated (and liberating?) nonassembled ensemble and an all-pervasive, invisible coordination that favors partial interests.

Another example is Gilles Deleuze and Félix Guattari’s nomadic war machine.187 Its form corresponds to global partisan warfare; it turns the planet into a “smooth space” onto which “striated spaces” are projected (see the discussion of flow markets, the global frontierland, and drone targeting above). Nomadism is not the opposite of hierarchical or state power; rather, state power contains nomadism and vice versa.

In the field of sociology, we find Neil Fligstein and Doug McAdam’s strategic action fields (SAFs), “the basic structural building block of modern political/organizational life in the economy, civil society, and the state.”188 SAFs form a fleeting world of metastable “socially constructed arenas” in which “actors with varying resource endowments vie for advantage:”189 “All the meanings in a field can break down including what the purpose of the field is. . . . [T]he process of contention is ongoing and the threats to an order always present to some degree.”190

But perhaps the most perfect example of theoretical mimesis is Jean Baudrillard’s “ultimate reality of impossible exchange,” the “Impossible Exchange Barrier.”191 Here, universal exchange is turned on its head. Setting out from the observation that “there is no equivalent to the world,”192 Baudrillard argues that there are no equivalences in the world, that a “continuity of the Nothing . . . grounds the possibility of the Great Game of Exchange,”193 and he concludes that the “whole problem is one of abandoning critical thought” as it is now anachronistic.194 Instead, the “task of thought” is to make the world “even more enigmatic and unintelligible.”195 This, despite the perceptive qualities of the text, is the ultimate confirmation of universal monoculture through its seeming reversal.196

CONCLUSION

The dystopian endpoint is not a world that has been taken over by machines and programs that develop and follow their own agenda—the singularity nightmare. The real dystopian endpoint is a world in which the process of mutual formation between humanity and its technological inventions has produced a state in which both the human and the nonhuman worlds are modeled on just one, in its foundational principles very limited, invention—the information processor—and there is no longer any imaginative space in which alternatives might be created. The danger is neither technology destroying the world—this is also a danger but a different one—nor the reduction of the social to the technological but the social becoming locked into the technological to the point of indistinction. If this happens within a capitalist economic framework, then the result will be a kind of dysfunctional stasis, a lingering apocalypse, life as continual warfare, with techno-economic partisans permanently being engaged in instantaneous value extraction.197 The indistinctions that today make themselves felt empirically and in attempts at theoretical explanation will have become a complete homogeneity that may no longer even deserve the adjective “social.”

### Impact—Necropolitics

#### The cybernetic episteme necessitates global necropolitical violence, where death becomes more profitable than life to genocidal dictatorships, and makes nuclear war more likely.

Grove, 20—Associate Professor of International Relations at The University of Hawai’i at Mānoa (Jairus, “From geopolitics to geotechnics: global futures in the shadow of automation, cunning machines, and human speciation,” International Relations, 2020, Vol. 34(3) 432–455, dml) [Wiener Filter equation omitted]

The automation of war and the reduction of human troop sizes has a similar effect. Wars aided by drones and as a result significantly smaller numbers of soldier casualties continue on for decades in a kind of sustainable warfare.28 The political and material cost of casualties like the material cost of striking are being removed from the political equation making states less and less accountable in the case of social justice and the pursuit of violence outside their borders.

The feedback between these two trends is potentially catastrophic. At the same time that war becomes easier, governments become less accountable to their people, and people are deprived of the means to support themselves, it is also the case that people will matter less to their governments as they will not possess the labor power to cause pain to the economic productivity of the country by means of striking nor the capacity to refuse to fight. Zygmunt Bauman has spoken of disposable populations, a kind of human waste or surplus where the value of one’s existence is meaningless for the state.29 However, we ought to go further down this path by way of Achille Mbembe’s creeping necropolitics.30 It is not merely that chronically or even intergenerational unemployed people have no value; it is that the marginalization and even murder of people can now generate value. In what Mbembe refers to as the ‘enclave economies’ of war machines:

The concentration of activities connected with the extraction of valuable resource around these enclaves has, in return, turned the enclaves into privileged spaces of war and death. War itself is fed by the increased sales of the products extracted.31

In these enclave economies fueled by petroleum, diamonds, but increasingly things like lithium or even sand or water, the outright murder of people, clearing space, generates value even in the supposedly post-resource digital economy.32 However, beyond the instrumental value of security there is also the explosion of security services as its own economic sector rather than as a merely means to secure other economic sectors. International security corporations such as Wackenhut industries, once a private prison service provider in the U.S., now generate profits from refugee management in Australia and Europe.33 The nearly 200billion dollar private security industry and $1917billion dollar defense sector suggest that the economy of making death and deprivation is more than merely a means. What few normative and legal limitations exist on the lethality of these corporations and institutions could disappear. This is already taking place in the global South and amongst African-Americans and indigenous people around the planet.

However, one can foresee, with little imagination, the extreme injustices of the contemporary era as a general condition of global life. What requires imagination on our part is reaching a turning point where these crimes become themselves normative, that is, the ‘good’ the state pursues. Contrary to our sensibilities such ideologies already exist and are even gaining attention outside the obscure chat rooms where they began.

Under the heading of ‘negative messianism’, Mbembe reviews the growing movement of the ‘Dark Enlightenment’, ‘a political religion. . . [that] calls for the exit from democratic society and total corporate and absolute dictatorship’.34 The movement calls for a global, racial, culling of the population in the name of ‘human biodiversity’ and expounds the value of using racially inferior populations for radical experimentation to jumpstart technological breakthrough. If this sounds too implausible even for speculation it is worth considering the spate of recent terrorist attacks in the U.S. by the vanguard of the Dark Enlightenment. The mass shooter who killed 20 people in El Paso Texas in August of 2019 posted his Dark Enlightenment manifesto before beginning his rampage.35 In 2020, there have been multiple attacks by the so-called Boogaloos who have infiltrated the U.S. military and police forces and seek to spark the Dark Enlightenment by escalating the Black Lives Matter protests into a full scale civil war.36 And then there is the most famous and vocal theorist of the Dark Enlightenment, Steve Bannon, who in addition to being a key architect of the Donald Trump administration, works tirelessly to build the Dark Enlightenment movement amongst the burgeoning far right of Europe.37 Whether this world view succeeds or actually becomes normative globally is not really the point. Instead, as is the mode in the speculation here I propose that in the burgeoning Dark Enlightenment movement we can see a political community built around necropolitics as a value rather than a necessary evil.

It would be too much to draw a direct line from the Dark Enlightenment to all of the neo-nationalist, neo-authoritarian, and neo-fascist movements around the planet. However, the accelerating global right wing has been institutionalized at the highest levels of power in liberal democratic nation-states such as the United States, U.K. and India, suggesting that liberal institutions cannot subsist on autopilot. Neo-authoritarian politics have also moved from shaping domestic polities to the shaping of the international order.38

In such an order, what would liberal democratic states look like? The constraints on the genocidal dictatorships of the twentieth century was of course that they needed a substantial portion of their populations. Genocide could only be pursued against minority populations. State behavior even in the extremes of the Nazi state among others still required full mobilization and therefore at some level the necessity of willing obedience even if not quite legitimacy that could be supplemented through terror.39

What of the behavior of future states for whom their people are in some sense an afterthought? At a minimum the basic conceits of survival that underwrite practices like deterrence or coercion would change dramatically. The very logic and mechanics of biopolitics would have to change. Without a necessary or strict relationship to the nation, would states differ significantly from some kind of corporate entity? Would the state more closely resemble the ancien regime? What would become of territoriality? These are the grammatical questions raised by the dark imagination of an automated future sufficiently comprehensive to create the material condition whereby a state could survive without the majority of their population’s cooperation.

Can we not already see the outlines of such a future in the decisions of Bolsanaro, Trump, Xi, Modi, and Duterte, who blithely write off millions of their own citizens in the face of COVID-19 and the nearly 50per cent unemployment rate it has created where the virus has been allowed total freedom of movement?40 One need not be conspiratorial to see how quick authoritarian leaders have been to give up on disease containment once the data came back regarding the overwhelming racial disparity in COVID fatalities.41

If we consider the ways in which the shift from coal to oil changed the character of economic and labor relations with states in the twentieth century, the nearly 50per cent loss of jobs due to computerization in the twenty-first century,42 combined with a corresponding decline in the necessity of humans for military power, then these new conditions could change the very nature of what a state is. The biopolitical raison d’être of the nation-state which emerges in the nineteenth century and becomes truly geopolitical in the twentieth century is premised on the mobilization and securing of a national population.43 The revolutionary states emerge from and rationalize the hyphen of the nationstate as essential both in terms of democratic values and military-economic necessity. What will emerge in the aftermath of such necessities and values is the horizon of alternative futures we must consider.

Section 3: from Bergsonian machines to cunning machines

“Hello,” whispered Montag, fascinated as always with the dead beast, the living beast. . .

Montag touched the muzzle. The Hound growled. . .

“It doesn’t like me,” said Montag.

“What the Hound?” The Captain studied his cards. “Come off it. It doesn’t like or dislike. It just ‘functions.’ It’s like a lesson in ballistics. It has a trajectory we decide on for it. It follows through. It targets itself, homes itself, and cuts off. It’s only copper wire, storage batteries, and electricity. . . –Fahrenheit 451

A Wiener Filter or The Yellow Peril

The equation above is called a Wiener Filter. In mathematical terms, Norbert Wiener used it with a number of other steps to calculate the future. Despite the claims in the first section that the future does not exist, the territory or probable limits of the future do, at least most of the time. What Wiener was representing mathematically was that even with little data on which one would normally make a prediction you can define the space of possibility or in Wiener’s terms the distribution of probabilities even for non-linear or non-existent causal systems. In practical terms it meant that artillery could be automated to shoot where planes were going to be rather than where they were when the radar signal returned. The mathematicians did this by considering and then modeling the limits of the system being predicted.

It is impossible to predict what an individual pilot will choose to do but it is possible to describe in mathematical terms what a pilot is capable of doing and similarly what a plane with a particular maximum velocity was capable of doing. The predictions made by the Wiener Filter allowed the artillery guns to fire in a significantly more restricted area with minimal radar information rather than just blasting away at the sky in hopes of hitting something. According to Steve Heims, more predictable systems like the V2 rocket could be successfully targeted and shot down 99 out 100 times by the Wiener Filter.44 The seemingly ‘dumb’ artillery could adjust or read their environment and work in concert adjusting further as information from rudimentary radar systems or the assemblage of radar, operators, and canons. The artillery was in the most basic sense becoming aware.

Wiener’s ‘solution’ which made unpredictable systems targetable was another version of what Claude Shannon very soon after solved for communication with his theory of information. Shannon developed the techniques which allow the efficient transmission of information through imperfect media such as telephone lines by similarly modeling the range of noise and compensating or repeating signal to exceed it. Rather than predicting the noise which is impossible because of its chaotic nature Shannon was able to treat all noise as a system rather than individual events of noise such that the range of noise could stand in place of the individual incidents. In both cases, the breakthroughs of Wiener and Shannon created the world of computers, the internet, automation, and machine learning we now inhabit. All systems after Wiener and Shannon could be treated in some sense as information and communication problems to be solved.45

After his experience in the war and further experiments after, Wiener began to describe a more general principle of informatics and machine technology. What he would later call the last science or the science of everything saw every system, whether physical, chemical, mechanical, biological, as computable and alterable. Following this insight Wiener believed humanity was at the cusp of something unprecedented. In 1948, he declared that a new kind of machine had emerged in the history of human evolution. Although still rudimentary, cybernetic machines of the 1940s were capable for the first time of simple self-regulation based on interactions with their external environment. Unlike thermodynamic machines that sought equilibrium, cybernetic machines could pursue a goal or objective in the world. Wiener referred to these new machines as Bergsonian machines, after the French Philosopher Henri Bergson and his idea of elan vital. 46 For Wiener, machines possessed for the first time the spark of a vital impulse. While these Bergsonian machines have so far disappointed the expectation of those hoping for and others fearing human-like artificial intelligence, machinic intelligence, whether learning algorithms or self-steering and targeting weapons systems, have exploded into a variable rainforest ecology of new species.

What is important for the purposes of this article is that Wiener was able to demonstrate that very simple feedback mechanisms could produce complex emergent results or what ‘appeared’ like intelligence even if the machines were not conscious of that intelligence. What I explore throughout the rest of the section is how even small advances in machine intelligence could produce dramatic changes in what we think of now as human dependent drones. Already AI platforms have the capacity to strategize and win complex games like Go, AI via drones have the capability to target or execute operations on their own, robots can 3D print and construct other robots, that is, a simple form of reproduction. The only thing missing is what in philosophical terms we call will or desire. However, the insight from Wiener is that the difference between rudimentary will and a command code is insignificant in effect if a feedback exists between the machine and the external environment which can shape or direct the now desiring machine. To put it somewhat simply, we do not need human general intelligence for robots to change the world and geopolitics; the world could change overnight if mechanical life emerged or was released into the wild and was as sophisticated, resilient and procreative as the cockroach.

We are already experiencing the burgeoning capability of cunning machine. If one considers to the underlying political and economic pressure to move away from human combatants not unlike the globalization of the labor market more broadly, the incentives for innovations continuing are difficult to deny.47 Even before 9/11 combat was becoming too costly in both economic and political terms and therefore required an alternative in order for empires and smaller states to stay afloat in lean times. The globally modeled War on Terrorism brought the crises of military expenditure still lingering after the Cold War to a head. However, the drive to cut costs and political liability has not stopped at the battlefield. Attempts to remove humans further and further from the battlefield follows this inhuman trajectory into the arena of decision-making and contestation.48 The reliance on algorithmic warfare creates the opportunity for increasingly unilateral warmaking. Cunning machines, not machines of reason but machines capable of hunting and trapping, represent the possibility of the command and control developed for nuclear arsenals with the micro-scale to pursue and kill of assassins or special forces.49

This process of automating politics as well as war creates further incentive for the development of increasingly autonomous machines and actually undermines security as it makes the capacity to wage war cheaper and more accessible around the planet. The drive for more autonomous machines is heading toward ‘sustainable warfare’, a kind of weird parallel to sustainable development. Like sustainable development, sustainable warfare really makes warfare endemic rather than providing a real alternative to war making. So war as we know it may be coming to an end but a permeating martial transformation is just getting started.

### Impact—Partisan Warfare\*\*\*

#### \*\*\*Note while prepping: Steuer uses the term “partisan” in its military context, to refer to “a member of an irregular military force formed to oppose control of an area by a foreign power or by an army of occupation by some kind of insurgent activity” as per Wikipedia, rather than in its more common context as someone with a political bias.

#### The impact is a constant apocalypse of global partisan warfare in which humanity becomes permanently potentially embroiled in a war against itself.

Steuer, 19—research fellow at the Centre for Applied Philosophy, Politics, and Ethics (CAPPE) at the University of Brighton (Daniel, “Prolegomena to Any Future Attempt at Understanding Our Emerging World of War,” *War and Algorithm*, Chapter 2, 11-13, dml)

According to General Sir Rupert Smith, industrial interstate war no longer exists, and “we are now engaged, constantly and in many permutations, in war amongst the people.”11 Whether written by practitioners or scholars, literature in this area almost without exception observes that we are witnessing an ever-increasing blurring and blending of phenomena, producing interconnected and overlapping indistinctions. Yet, at the same time, most authors hold on to some moral or normative distinction. For military and security practitioners, these distinctions become framework conditions within a global security paradigm and thus strategic factors. The binaries in these writings— order (hierarchy) and chaos (swarms, “leaderless resistance”), rulers and ruled, decision makers/actors and populations, narrators and listeners, thugs and nonthugs—are ultimately construed in a Manichean fashion.

Let us first try to imagine the extreme endpoint of this increasingly blurred post-Westphalian landscape. Following on from the principle ascribed to Napoleon by Carl Schmitt—“il faut opérer en partisan partout où il y a des partisan”12—we may name it global partisan warfare. Within this world, the figure of the techno-economic partisan—no longer telluric, no longer even cosmic, but fundamentally without place or time: a normless ideal type—may take the form of the soldier, the business person, the terrorist, the logistics operator, and so forth. This ideal dystopian actor can be inserted into any context and can take on any perspective; her actions are guided by methods of analysis that are universal, purely formal, and indifferent to content.13

Global Partisan Warfare: Mimetic Escalation

There are no differences anymore. Reciprocal action is so amplified by globalization, the planetary reciprocity in which the slightest event can have repercussions on the other side of the globe, that violence is always a length ahead of our movements. Violence steals a march on politics, and technology escapes our control. —René Girard, Battling to the End

According to Clausewitz, war is a chameleon that changes appearance according to the admixture of “blind natural instinct” (people), “free activity of the soul” (the general and his army), and “reason” (government), that is, passion, strategy (probabilities and chance), and political logic.14 In René Girard’s interpretation of the development of this triad, we are now, as Howard Caygill puts it, “fully and irreversibly engaged in an apocalyptic logic of escalation.”15 At the heart of it, I suggest, is the figure of the partisan. His methods are adopted by the “regular” force, radicalizing, in turn, the partisans’ methods, which are then again adopted by the regular force, and so on. As a result, the theater of confrontation becomes increasingly dispersed in geographical, temporal, institutional, and technological terms. Today, the armies of the technologically most advanced states develop units that operate in a partisan fashion in order to “defend” what are seen as global security interests, while insurgents use global technological infrastructure and other infrastructure. Thus, the difference between the resistant “subjectivity of the partisan,” whose strategy “is vaporous as opposed to the movement of solid and liquid masses characteristic of military subjectivity,”16 disappears. Clausewitz, Caygill suggests, was interested in “the imaginative response to chance over the combination of force and consciousness” and in avoiding “the logic of escalation” that leads to a “final apocalyptic battle.”17 And yet partisan strategies do not avoid escalation. On the contrary, they make the enemies permanently present to each other, even (and especially) in their physical absence. Partisan escalation is a partly invisible, silent escalation. Does this delay the apocalypse or turn it into a permanent presence?18

In the protean universality of global partisan warfare—fought in virtual as well as physical spaces—all sides are potentially attacker and attacked. They are “persecuted persecutors.”19 If once partisan warfare gave rise to new political communities, forging “bonds of solidarity that grow out of the unconditional battle against a common enemy,”20 then—once we come to today’s techno-economic partisan—these bonds of solidarity are no longer unconditional, and the common enemy is as fleeting as these bonds. Any identity (or destruction thereof) is a weapon rather than a cause or a consequence of conflicts. Thus, absolute partisan warfare is the opposite of Schmitt’s absolute war in which the enemy is “a monster that must not only be defeated but also utterly destroyed.”21 Rather, the intensity of such enmity, which is based on existential difference,22 is replaced with constantly changing fields of opportunities and temporary and relative friend–enemy relations.

Schmitt’s reflections on the modern partisan still used superpowers and superior military strength (ultimately based on the possession of nuclear weapons) as decisive coordinates. The techno-partisan is either reduced to a “transportable and exchangeable tool of a powerful central agency of world politics” that deploys or deactivates him “as the situation demands;”23 or, as “technical-industrial partisan,”24 he is “motorized, and linked to an information network with secret transmitters and radar gadgetry;”25 or, in a postnuclear war scenario, he becomes “a new type of partisan” practicing a new type of “land-appropriation;”26 or, finally, he morphs into a “cosmopartisan,”27 who is nevertheless still deployed in the interest of a power’s rule over the planet. Schmitt does not consider the possibility of the partisan logic becoming total and infiltrating any institutional framework that might act as a katechon so that what he calls “transitional, intermediate arrangements between total war and peace”28—smoldering forms of warfare, as it were—become self-sustaining. Tomorrow’s techno-economic partisan will blend in with the new means and become part of a man–machine assemblage. As an agent, he will always already be a double agent. Within the interconnected networks of exchange, he will be both user and producer of fleeting, metastable configurations. On this a priori micro-foundation, we may visualize macro forms of war as the intersections between warlords, regular entrepreneurs, governments and ministries, the global formal and informal economy, ethnic/cultural/religious groups, and international criminal organizations. These forms stand in shifting relations of family resemblance, and by definition no list of them will ever be exhaustive, as the shifting never ends. The elements that make up the macro forms—such as states and corporations—provide temporary framework conditions, but they are not sovereign providers. Rather, they temporarily coordinate individual micro-level events while the overall process drifts toward contingency, driven not by actors but by reactors.

## Blocks

### AT: Academia Fails

#### The alt’s cooperative re-imagination of communication and value can redefine the subjectivity of society. The academy is key—if we win a link, it proves that we’ve identified a crack in the system from which new relationalities can emerge.

Hall, 20—Professor of Education and Technology, De Montfort University (Richard, “Platform Discontent against the University,” *The digital age and its discontents: Critical reflections in education*, Chapter 7, 130-132, dml)

The proletarianization of the University is predicated upon atomized competition, which utilizes new forces of production to reshape relations between people, in order to extract value. A critical element of this is enforced separation between individuals, and the ability for individual agency to be repurposed by structural requirements. However, in order to extract maximum value, capital requires individuals to work in concert, or to collaborate as producers, distributors and consumers. This gives opportunities for cooperative re-imagination. For Marx (1866), the cooperative movement was a transformational force where it understood its relationship to labour as the point of social production. Thus, he argued that producer cooperatives, as opposed to consumer cooperatives, are a manifestation of class antagonism that can point towards ‘the republican and beneficent system of the association of free and equal producers’ (ibid., emphasis in the original). This analysis of cooperation rests on forms of self-mediation by human beings of their material activities in society. In an idealized cooperative state, activities are no longer piecemeal or solitary, or governed by capital; rather, they are governed by alternative networks of solidarity and purpose: ‘This is not possible without the community. Only within the community has each individual the means of cultivating his gifts in all directions; hence personal freedom becomes possible only within the community’ (Marx & Engels 1998: 86).

A focus on the communal and associational characteristics of cooperation is critical to Marx’s praxis, because in them he sees the individual developing the capabilities of their species (Marx 2004). As a result, a refocusing upon cooperative values and principles, grounded in the conceptual framework of the self-in-association, acts as a moment of refusal of alienated socialization, in which the producers of society are estranged from both the means and conditions of production of that society. However, discontent at the present state of things does not coalesce into a single, counter-hegemonic position, predicated upon a unified collection of alternative governing principles for life. It therefore becomes important to think about alternative forms of knowledge production and an integration with alternative conceptions of mutuality, solidarity and cooperation, such as those emerging from indigenous or marginalized communities.

Indigenous methodologies or modes of being help both to develop a fresh focus on knowledge and to reframe the idea of movement towards a more humane social production as a liminal process, engaging the body, emotions and cognition (Tuhiwai Smith, Tuck & Yang 2018). In this sensuous, epistemic opening, knowledge is rooted in people, place, philosophy, values, communities, axiologies and cosmologies, which generate ‘relational accountability’ (Wilson 2008: 77). Such accountability is mutual, respectful and dignified, and acts as a beginning for refusing the domination of knowledge from the global North imposed as progressive and rooted in an ideological, evidence-based epistemological standard. Here, cooperative techniques for social reproduction might enable forms of relational accountability between peoples and places. Moreover, in this process, they offer the possibility of liberating material forces, including technology, and connecting them to alternative conceptions of the world, in order to widen autonomy and freedom.

For Marx (1866; 1970) a cooperative revolution in the governance of technology forms a crucial strand in changing the general conditions of social production, because it redefines the subjectivity of society towards humanity and away from the commodity and the valorization of capital. If we are to do this, then a shared, associational expression of individual lives is required, in order to realize the essence of what it means to be human. Marx’s idea was that the expression of my life and those of my peers are immanent to each other, and should be mediated directly rather than through the market, private property, the division of labour and commodity exchange. This requires an alternative conception of how to integrate the forces of production into our communal being, and a liberatory conception of how those forces are subordinate to our essence and our social relations (Bookchin 2005). Beautifully, Marx (1844) argues that through such practices ‘our products would be like so many mirrors, out of which our essence shone’ as a ‘free expression’ of our lives.

At issue is how to find cracks in the system of capital, into which technologies for alternative, liberatory conceptions of society can be inserted. Dunayevskaya (1958) has argued that these need to be situated inside organizations that are beyond value-production, or they risk degenerating under competition. As a result, a re-imagination of the University has to engage with more than the cooperative possibilities of the collective ecosystems currently structured to reproduce value. A re-imagination of the potential for forces of production to enable social connection and knowledge sharing, and to liberate time for autonomous activity rather than the imposition of commodity production, comes up against structural contradictions. Thus, a re-imagination of technology as a means for liberating knowledge for a new society demands a new material literacy as a radical, pedagogical project at the level of society.

This is a transitional project that critiques the place of technology as it is currently instantiated inside the University. It critiques the relationship of the digital University, and its techniques of governance, to knowledge production and the generation of social wealth. It also critiques these relationships and techniques in terms of their ability to enable humanity to engage with global economic and environmental crises. It critiques the limitations in our collective ability to produce knowledge inside the University to engage with these crises, in part through the separation of polity and economy, such that the latter dominates the former. It critiques these limitations as they are reproduced inside organizations conditioned by the State to generate value through exploitation and expropriation. In this way, it moves beyond the fetishization of technologies and techniques, including the ways in which these are reproduced and enclosed inside institutions like universities (see Ampuja, Chapter 2, in this volume). The potential for relational accountability and the recomposition of peoples, places and technologies offer an alternative set of possibilities for intellectual work beyond the capitalized University.

#### Imaginaries change the world—the diffusion of cybernetics proves!

Atanasoski and Vora, 19 – Neda Atanasoski, Professor of Feminist Studies and Critical Race and Ethnic Studies at the University of California, Santa Cruz; Kalindi Vora, Associate Professor of Gender, Sexuality and Women's Studies at UC Davis; 2019( “Introduction: The Surrogate Human Effects of Technoliberalism,” *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures*, Duke University Press, Accessed via Michigan Libraries, pg 23-24, bam)

Dissident Technologies and the Disruption of Technoliberal Enchantment: Our Itinerary

Dominant techno-utopic imaginaries direct funds and structure engineering research labs around the world, and therefore also impact the distribution of differential conditions of comfort versus misery in the present along vectors of race, gender, class, and other social hierarchies. The surrogate human effect explains how difference continues to inform what subjects become legible as human through technology design imaginaries that respond to market values by focusing on innovating and improving, rather than challenging, social and cultural structures and processes that are predicated by categories of gendered racial hierarchy. To this end, Denise da Silva offers the concept of “knowing (at) the limits of justice,” a practice that “unsettles what has become but offers no guidance for what has yet to become.”59 To insist on “knowing at the limits” of representational categories of difference, we must ask: If the predominant fantasies of systemic social change in mainstream Euro-American public discourse dwell upon the techno-utopics of a world in which all of those who are already human and already subjects ascend into the realm of those whose lives are supported by “human-free” or “unmanned” technological infrastructures of service (whether in factories, in the military, or in the nursing home), then how do we think about the relationship of new technologies to possible fields of political protest or action?

The dissident technological imaginaries we include in each chapter take up categories that challenge those of technoliberal capitalism and its projected futures. We read these design imaginaries as exploring the possibilities of technology to break from historically sedimented dynamics of freedom and unfreedom woven into the fabric of technological modernity. In addition to offering critique, each chapter thinks through how such design imaginaries can push at the limits of what is possible, disrupting the confining notions of (technoliberal capitalist) possibility housed in the engineering imaginaries we critique. We explore these questions through juxtaposing engineering imaginaries that embrace the surrogate effect, thereby advancing the infrastructure of technoliberal futures, with imagi- naries that do not.

### AT: Consequentialism

#### You should prioritize comparing the ethical consequences of our models of thought over comparing causal predictions based on anachronistic models of the political.

Gray and Eloff, 22—School of Philosophy at North-West University (Chantelle and Aragorn, “Fabulation in a Time of Algorithmic Ecology: Making the Future Possible Again,” *Technology, Urban Space and the Networked Community*, Chapter 5, 105-133, SpringerLink, dml)

In his 2008 article, “The End of Theory: The Data Deluge Makes the Scientific Method Obsolete”, Wired editor Chris Anderson notoriously argues that the era of the scientific method built around testable hypotheses is fast-becoming obsolete due to the advent of “petabyte-scale” data accumulation and analytics. Observing that tech companies like Google treat this “massive corpus as a laboratory of the human condition” (Anderson 2008), Anderson polemically implores us to forget every theory of human behaviour, from linguistics and sociology to ontology and psychology. “With enough data”, he avers, “the numbers speak for themselves” (ibid.), and statistical correlation renders superfluous any theorisation of causality. The Californian Ideology (Barbrook and Cameron 1996)1 implicit in this overstatement of the benefits of data-driven research has been challenged by several commentators (see, e.g., Pigliucci 2009 and Mazzocchi 2015) and is patently specious. The appeal made by Silicon Valley zealots to ‘pay no attention to the man behind the curtain’ relies on a mythical, and sometimes even eschatologically feverish, conception of science as a purely objective pursuit, as well as a facile conception of human thought and behaviour—indeed, subjectivity—wherein we can be comprehensively understood via the purely quantitative approaches of Big Data analyses and the statistical aggregation of deep learning systems. As Louise Amoore underscores in Cloud Ethics, this ideology confronts our “fallible, intractable, fraught political world with a curious kind of infallibility. In the cloud, the promise is that everything can be rendered tractable, all political difficulty and uncertainty nonetheless actionable” (Amoore 2020, 55). This dream of complete mathematical and technological control over reality—of “a kind of atlas of clouds for the ineffable, a condensed trace of the trajectories of our future lives with one another” (ibid.)—is hardly new. What legal theorist Antoinette Rouvroy refers to as “algorithmic governmentality”2 (Rouvroy and Stiegler 2016, 6), by which she means “the increasingly statistical governance of the ‘real’ ensuing from a convergence of contemporary technological and socio-political evolutions” (Rouvroy 2011, 119), can be traced at least as far back as first-order cybernetics (Wiener 1965, 12) and, before that, to Leibniz’s calculus ratiocinator (cf. Couturat 1901). What makes the contemporary problem novel, however, is that the latest technologies, for example cloud computing, practically unlimited data storage, high-speed global communications networks and, most importantly, machine learning—and here we mean specifically new forms of connectionist ‘artificial intelligence’ that, unlike older symbolic AI models, rely on multi-layer artificial neural networks that are assumed to represent the biology of human cognitive structure—have powerfully exacerbated the quest for (and assumptions of) ‘Algorithmic Supremacy’. As digital technology theorist Dan McQuillan argues, data-driven modelling via statistical induction is assumed to bear inherent significance, but this approach, which McQuillan describes as a form of “machinic Neoplatonism” (McQuillan 2018), tends to entirely elide the broader subjective and inter-subjective contexts within which analyses and modelling unfold and is thus, via this unwarranted delimitation, able to present itself as operating with a level of mathematical objectivity it simply does not possess.

This creates several insidious problems. For one, as Bernard Steigler observes in The Age of Disruption, this deferral to the ‘superiority’ of algorithmic reason legitimises “the systematic exploitation and physical reticulation of interindividual and transindividual relations” in the service of the data economy (Stiegler 2019, 7). In other words, the kinds of transgenerational, intergenerational, interpersonal, personal and even pre-personal3 circuits that used to “emerge through affective relations of various kinds” over time within and across societies to forge “dreams, goals, objectives and common horizons” have been disrupted in unprecedented ways (ibid., 16). Rouvroy argues, in fact, that subjectivity is bypassed by contemporary digital automisation so that subjects are rendered little more than a “collection of infraindividual data” that are “recomposed at a supra-individual level under the form of profile” (Rouvroy and Stiegler 2016, 12). Second, the speed at which what we have elsewhere termed the Algocene4 has emerged, as well as the level of technological literacy a coherent understanding of this shift entails, has far exceeded our capacity to theorise its effects, with the result that many analyses of our contemporary condition remain trapped in anachronism, projecting the image of an old world and its struggles onto a new and largely alien terrain. It is perhaps not too hyperbolic to claim, as many have, that the staggering technological shifts of the last 20-odd years necessitate theoretical engagement on the scale of a new geological era or epoch. This is no longer the world of industrial capitalism, nor even of Foucault’s disciplinary societies (Foucault 1977), Deleuze’s control societies (Deleuze 1992) or Guattari’s Integrated World Capitalism (Guattari 2000), although these are all vestigially inflected in the new situation, which has variously, although far from exhaustively, been termed societies of hyper-control and computational capitalism (Stiegler 2019), cognitive capitalism (Yann Moulier-Boutang 2012), platform capitalism (Srnicek 2016), the age of planetary computerisation (Guattari 2013), The Stack (Bratton 2015), infopolitics (Koopman 2018), instrumentarianism (Zuboff 2019) and algorithmic governmentality (Rouvroy and Berns 2013). Third, because of the speed at which digital innovation operates, whatever effects this new “hyper-synchronization of consciousness” (Vignola 2017, 188) is having on subjectivity can only be perceived in the most miniscule of ways, yet we have to rely on this minimum of information for a symptomatology because, if we follow Deleuze via Nietzsche, it is only through a symptomatology that we can trace etiological factors in order to find the most inventive corrective therapy. A difficult task indeed considering the constraints we are outlining here! The point is, we urgently require new tools to grapple with the implications of the encroachment of algorithmic reason and governmentality into more and more aspects of our lives and minds. Far from eschewing theory in favour of the transcendent mathesis universalis of our new digital overlords, situated thinking about our times has never been more crucial. If, however, this kind of thinking has not been forthcoming to the extent we would hope for, then this too perhaps forms part of the symptomatology of the Algocene. In describing something that is unprecedented, we need to take care, as McKenzie Wark argues, to find “a renewed language for describing the present situation and identifying what in the received language of capitalism [or, for those further behind the times, Marxism] impedes forward movement in thought and action” (Wark 2019, 6). Having said this, we also hold that it is important not to reduce the entire social field to algorithmic control, despite its near-ubiquity. What is rather vital is to understand what this new way of experiencing subjectivity produces and what, in turn, produces it. As Guattari explains of the Freudian Unconscious, it produced new desires, which included “hysteria, infantile neurosis, psychosis, family conflict, the reading of myths, etc.” (Guattari 1995, 10). So too what Stiegler refers to as “negative collective protention”, or the nihilistic expectation of nothing, except perhaps The End (Stiegler 2019, 19, 50), has produced new desires, and here we have to seriously consider that The End might in fact—probably is—desired, even collectively so (especially given that we also face Anthropogenic doom).5

How, then, do we change this desire? How do we use the diagnostic tools at our disposal in the schizoanalytic mode—that is, a therapeutic mode—to produce something new, something healthier? How do we change our practices and ways of being in the world so that life—rather than a misguided idea of Algorithmic Supremacy—matters again? In this chapter, we attempt to give a broad symptomatology of algorithmic subjectivity, drawing on a range of scholars who have gone before us. Our aim, diverging from most theorists, however, is not to propose legal or other reforms. We understand the algorithm to already present itself as an ethicopolitical arrangement of values, assumptions and propositions about the world. Our question—yes, our desire—is not: How ought the algorithm be arranged for a good society? but rather: What is a good society? For it is from the latter question, we hold, that healthier algorithmic arrangements will flow, not the other way around.

### AT: Cybernetics Thesis=Wrong\*\*\*

#### \*\*\*Note while prepping: The first Mbembe card is a shorter/differently-underlined version of the Mbembe card under “AT: Capitalism/Liberalism/Etc Good—Environment.”

#### Our theory holds explanatory power without being deterministic.

Mbembe, 21—research professor in history and politics at the Wits Institute for Social and Economic Research, University of the Witwatersrand (Achille, “Futures of Life and Futures of Reason,” Public Culture (2021) 33 (1 (93)): 11–33, dml)

As algorithmic forms of intelligence grow in parallel to (and often in alliance with) genetic research, the integration of algorithms and big-data analysis in the biological sphere brings with it a greater belief in techno-positivism. More and more, statistical thought, regimes of assessment of the natural world, modes of prediction, and analysis treat matter and life itself as finite and computable objects. The idea that life might be an open, nonlinear, and exponentially chaotic system is increasingly behind us. We seem to have reached a point where the market is reimagined as the primary mechanism for the validation of truth. Since markets themselves are increasingly turning into algorithmic structures, the only useful knowledge today is supposed to be algorithmic. Instead of actual human beings with body, history, and flesh, big data and statistical inferences are all that count, and both are mostly derived from computation.

Through big data in particular, surveillance is expanded into the emotional registers of domestic and embodied experience. As Kirstie Ball and William Webster (2020) have argued, a nexus of the potential of analysts, the data practices themselves, and the newly configured intimate spheres is increasingly drawn into the commercial value chain (Ball and Webster 2020). Data extraction is itself a political economic regime driven by the perpetual cycle of capital accumulation (Sadowski 2020).

For Matteo Pasquinelli (2015), algorithmic reason is a form of rationality whose end is the understanding of vast amounts of data according to a specific vector, the recording of emerging properties, and the forecasting of tendencies. To some extent, the metadata society is characterized by the “accumulation of information about information.” Algorithms also mine metadata for the purpose of establishing patterns of behavior, detecting anomalies, and recognizing an enemy. The enemy is constructed as a reality via statistics, modeling, and mathematics. Power, thus, is increasingly about identifying patterns or connections in random data, in a context in which the opposition between information and knowledge, knowledge and data, data and image, and thinking and seeing appears to collapse.

Power, detection, and surveillance are nevertheless not all. Algorithms are interwoven with a multiplicity of relations and heterogeneous things, be they data, bodies, or objects (Amoore 2020). In this sense, they are in themselves a negotiated process. Their power derives from their capacity to dynamically combine and recombine them and in so doing to reconfigure different social and material heterogeneities (Burke 2019; Lee and Björklund Larsen 2017). How they fold and unfold these relations, and with what effects, is an open-ended matter.

Computational and algorithmic logic is now found at the very source of general perception. As a result of the conflation of knowledge, computation, and markets, contempt has been extended to anyone who has nothing to sell and nothing to buy, or anything that cannot be bought and sold. It is therefore correct to argue that there is a shifting distribution of powers between the human and the technological, in the sense that technologies are moving toward “general intelligence” and self-replication. They are being granted the powers of reproduction and independent teleonomic purpose rather than having them taken away.

Key to life futures is therefore the extent to which technological escalation has redefined the nature of speed, unshackled markets, and the economy. Important, too, are the ways in which various technological devices constantly monitor our behavior in attempts to reveal how it could be modified and optimized. As a matter of fact, some of the fastest-expanding markets in the world today are “markets for future behavior.” They rely on better understanding incipient future intent. This could be future voting intentions. It could also be the intent to commit fraud, the intent to buy life insurance, or the intent to stream a specific video (Amoore 2019). These markets also rely on the extraction and mining of new forms of raw material. Such raw material mostly consists of information and details about individuals’ behavior taken, as Zuboff (2019) writes, from the distant corners of our unconscious. It is raw material plumbed from intimate patterns of the self—our personality, our moods, our emotions, our lies, our vulnerabilities, every level of our intimacy (Zuboff 2019; Illouz 2007). The purpose is not only to heighten the predictability of our behavior. It is also to make life itself amenable to datafication.

A key feature of our times is therefore the extent to which all societies are organized according to the same principle—the computational. We are surrounded by ubiquitous computing, technologies that weave themselves into the fabric of our everyday lives; these devices, sensors, and other things we interact with have become part of our presence in the world all the time. How the boundary between us and these devices is enacted is a matter of open debate (Matzner 2019).

But what is the computational? The computational is generally understood as a technical system whose function is to capture, extract, and automatically process data that must be identified, selected, sorted, classified, recombined, codified, and activated. Yet we shouldn't forget that the computational is also a force and energy of a special kind, a speed regime with its own qualities and infrastructures. It produces and serializes subjects, objects, and phenomena; splits reason from consciousness and memory; and codes and stores data that can be used to manufacture new types of services and devices sold for profit.

Whether operating on bodies, nerves, material, blood, cellular tissues, the brain, or energy, the aim is the same: the conversion of all substances into quantities; the conversion of organic and vital ends into technical means; the capture of forces and possibilities, and their annexation by the language of a machine-brain transformed into an autonomous and automated system (Friederich 2020; Perény 2013). The computational is also the institution through which a common world, a new common sense, and new configurations of power, perception, and reality are nowadays brought into being. The globalization of corporate sovereignty, the extension of capital into every sphere of life, and technological escalation in the form of the computational are all part of one and the same process.

#### We link turn this. Cybernetics is not a totality, but it’s trying to become one, and that’s happening faster and more pervasively than we realize. Highlighting algorithmic violence can expose cracks in the system, but the aff and perm pave those cracks over!

Bellanova, et al, 21—Postdoctoral Researcher at the University of Amsterdam (Rocco, with Kristina Irion, Katja Lindskov Jacobsen, Francesco Ragazzi, Rune Saugmann, and Lucy Suchman, “Toward a Critique of Algorithmic Violence,” International Political Sociology (2021) 15, 121–150, dml)

This collective discussion shows that it is vital to attend to the multiplicity and ambiguity of algorithmic violence, as well as to the effects of seemingly innocent necessities like the fixation of the past into fact/data as necessary to fix the social for computational treatment, and thus to enable such computation to make the future actionable, something security can intervene in. When thinking about more conventional, often largely pre-digital, forms of violence, as the subject of much international relations scholarship, it is increasingly important to add a note on algorithmic violence in the analysis. Doing so is necessary in order not to lose sight of practices that are not violent in a more traditional sense (see also Amoore and de Goede 2014). This is an empirical point (e.g., about blind spots vis-à-vis instances of algorithmic violence), as well as a methodological argument (e.g., about translation processes at play in the use of computer/machine vision and hence about the value of moving beyond text when analyzing algorithmic violence), and a normative sensitivity (e.g., about invisibilized forms of algorithmic violence not being held to account). Indeed, the invisibility of many algorithmically supported infrastructures poses numerous challenges, including accountability and governance challenges, hence the importance of thinking differently about the issue of algorithmic violence. Attention must be paid to an algorithmic system’s genesis in terms of data provenance, geography, culture, time and space, resources, and actors involved for its governance. This is particularly crucial for issues arising from the transnational deployment of algorithmic systems for the protection of human rights and other domestic forms of redress against algorithmic violence.

In the security domain, violence is often implied in the very making of the data infrastructures needed for algorithms to work. Violence thus starts before algorithms produce profiles or provide targeting information. Semiotic violence can also happen when datasets move from one practice to another, crossing not only geopolitical borders but also sociopolitical settings and temporal boundaries, for example, between civilian and military practices. Accordingly, we need to attend to questions of algorithmic violence happening not only in the initial moments of datafication and data collection, but also when datasets become (in)security data. Focusing on data infrastructures and their making in diverse security contexts can help resituating algorithms as part of complex and messy practices, and thus avoid disembodying them (which would end up cautioning the same frictionless discourse that promotes algorithmic governance). It may offer IPS-inspired research a way to grasp the force of computation in media res, that is, studying how algorithms affect and are shaped by other things (see also Chun 2011, 177). This means no clear-cut foundational ground on which critique can be built and leveraged once and for all, but rather a continuous work of attention and intervention.

### AT: Law Good—AI

#### AI has turned international law into Swiss cheese. Regulation fails when it counts, even if it’s not completely toothless.

Maas, 19—PhD Fellow, Centre for International Law, Conflict and Crisis, University of Copenhagen (Maathijs, “International Law Does Not Compute: Artificial Intelligence and the Development, Displacement or Destruction of the Global Legal Order,” Melbourne Journal of International Law 20, no. 1 (July 2019): 29-57, dml)

In addition to these general factors of technological change and features specific to general 'transformational' technologies, there are features specific to AI technology that further complicate its effective regulation under international (and national) law. As Scherer has argued, AI research and development processes are distinguished by problematic features, namely, that it is 'Discreet, Diffuse, Discrete, and Opaque'. 12 8 It will be useful to take these in turn.

First, AI development is often discreet, as little physical infrastructure is required. AI projects can be developed without the mass institutional frameworks that were necessary for building industrial capacity in the last century, and without the signature ingredients such as uranium or certain chemical agents necessary for building strategically pivotal weapons of mass destruction. Of course, this difference should not be overstated: cutting-edge AI research and applications still require large amounts of computational power or hardware. 129 For instance, recent years have seen extremely large increases in the level of compute used in the top AI training runs an exponential increase with a three and a half month doubling time (compared to an 18-month doubling time for Moore's Law), 130 resulting in a staggering 300,000-time increase between 2012 and 2018.131 On the other hand, the amount of compute necessary for deploying already-trained systems is far lower than that used in the training; not all competitive or useful AI capabilities will come with such prohibitively restrictive hardware requirements; 132 the cost of computing continues to steadily fall; and, at any rate, the sheer ubiquity of computing hardware in modern society, and its dual-use nature, renders it far more difficult to restrict. 133

Secondly, AI development is discrete, as separate components may be designed in a decentralised manner, without top-down coordination, with the full potential not becoming apparent until they are brought together in a new application although this may not be the case for certain (especially military) AI applications. 134

Thirdly, AI development is diffuse, as software development can be geographically and organisationally dispersed and may involve actors in diverse and potentially unknown jurisdictions as is often the case with open-source software. 135

Fourthly, AI development is opaque, as the technologies are not well understood by regulators, and outsiders or inspectors cannot reliably detect features in an AI system under development. 136 One can also compare the socalled 'Volkswagen problem'; a 2015 scandal involving the reveal of 'defeat device' algorithms in Volkswagen on-board vehicle computers. These algorithms detected when a car was undergoing official tests and accordingly altered the engine's nitrogen oxide emissions to feign compliance with environmental standards. 137 Similar modules could be installed in military or cyberwarfare AI systems, rendering effective and credible verification of arms control treaties precarious.

Moreover, AI regulation is complicated by the difficulty of fixing a single definition of what AI actually is. 1 3 8 The opacity of AI systems, their heterogeneity in architectures and the deniability of their use in certain contexts (eg, cyberwar) may impede the formation of customary international law on these uses, in a similar way as has been observed (or rather has not been observed) with 'conventional' cyber weapons or intelligence operations. 139

In contrast, relying on treaties or negotiations may not suffice either, since at a political level, AI technology is set to be particularly contested. Picker has noted that one recurring challenge to international law involves 'unevenly shared technology'.140 This creates both epistemic problems (not all states have the requisite technological know-how to understand what regulation is needed, or even to appreciate that it is needed) as well as political problems (states can have different stakes and interests). 141 As it is, leading AI systems are set to be developed by or within a relatively small subset of states; the extent to which it can proliferate further is unclear and may sensitively depend on the degree to which performance is differentially determined and constrained by hardware or software. 142 The sheer range of AI applications renders it hard for states party to come to an agreement on the risks of a strategically appealing technology, if that technology does not have a clear 'type specimen' application, or if certain capabilities are hidden.

Moreover, software has features that have, at least in some cases, made it resistant to regulation. It has been argued, for instance, that traditional arms control regimes have not been successful in the realm of cyberspace because of several different strategic features of the technologies in question. 143 As also noted by Paul Scharre, historical non-proliferation or arms control efforts have seen the greatest success when they sought to completely outlaw a weapon, rather than set up complicated rules about how such systems may and may not be used. 144 This echoes Thomas Schelling's observation that

the most powerful limitations, the most appealing ones, the ones most likely to be observable in wartime, are those that have a conspicuousness and simplicity, that are qualitative and not a matter of degree, that provide recognizable boundaries. 145

Digital or virtual technologies, which are not a single 'technology', do not lend themselves so naturally to the articulation of such a simple, discrete or complete ban.

Likewise, the various non-proliferation and arms control regimes for nuclear weapons were able to invoke unambiguous red lines an outright ban on military development or use against horizontal proliferation. Simultaneously, they were able to utilise measurable, objective benchmarks for restraining vertical proliferation, in the form of clearly quantified and comparable caps on any of a range of metrics, such as the number of deployed missiles, the maximum number of warheads mountable on each missile, or their total throwweight or yield. 146 By contrast, it is difficult to measure the relative strength of states in cyberspace or with AI systems. 147 Moreover, as with cyber weapons, there may be uncertainty regarding the efficacy of military AI technology, challenges with monitoring compliance and difficulties with enforcement. 148

We can now sum up the 'soft' argument for legal destruction. Even though international law is in principle capable of the developments necessary to fix the legal problems created by AI systems, 149 in practice, these systems will likely prove highly resistant to the sources and tools available to international law. Customary international law is slow and requires clear evidence of state practice (which is not present with 'hidden' capabilities such as cyberwarfare AIs, or which is hindered by definitional problems around AI). Treaties usually require that both states party have roughly even stakes in the technology, clear expectations of benefit for abiding by the treaty, the ability to jointly agree on clear definitions and the ability to effectively verify compliance (all of which are difficult in the context of AI development). Finally, international courts are often slow, reactive to specific cases and non-expert on technologies. Effective international law regimes on new, emerging technology have historically relied on a range of ingredients, including an ability to anticipate and agree, to some extent, on the path and applications of development, an ability to agree on definitions of the technology and the ability to effectively verify compliance. Many or all of these ingredients will not apply in the context of many AI systems, suggesting that this technology will lead to disruption of that order.

This may not inhibit international law from carrying out legal developments to resolve all situations of legal uncertainty, 150 but it may do so in some key cases (eg, arms control of destabilising AI systems), 151 and such situations may leave semi-permanent 'holes' in international law. While perhaps not an existential threat to international law, such holes are likely to impede effective governance and undercut the legitimacy of the global legal order in the eyes of the public.

### AT: Law Good—Generic/Cyber

#### Their offense is idealistic and outdated. The law’s ability to influence society has been completely displaced by code.

Jiménez, 22—Melbourne Law School, The University of Melbourne (Aitor, “Law, Code and Exploitation: How Corporations Regulate the Working Conditions of the Digital Proletariat,” Critical Sociology, 2022, Vol. 48(2) 361–373, dml)

The discussions around the resemblance between law and code are as old as code. After all, law is a normative language intended to shape conducts, frame behaviours and structure reality. In short, it is a system of rules regulating actions. And code is the same, a system to program instructions. A language that executes. Both are a system of symbols that, when activated, put in motion, stop, create or destroy something (Lessig, 2006). However, as Lessig’s works show, the relationship between law and code has fundamentally changed. Before the digital revolution, law was undisputedly ruling the ‘real world’, while code was structuring the so-called cyberspace. But then the digital revolution occurred and digital technologies became ubiquitous and increasingly embroiled with law. The rise of the internet – with its libertarian dreams of free will with no laws – gave rise to the rule of digital monopolies, who ruled and legislated like tyrants in ‘cyberspace’ (Hassan and Filippi, 2017). However, cyberspace is not a place of fantasy. It is imbricated with reality. The digital economy is neither based on the material nor the cyberworld, but on a ‘cyber-physical infrastructure’ (Jacob, 2017), composed by programmes, software and the network, of course – but also data centres, investors, workers, minerals, cables and every possibly thing that can be perceived through senses.

In a vulgarised version of Marxism popularised under the Stalinist regime, law was considered as a simple product of the economic forces in motion (Vyshinsky, 1948). They drew on Marx’s hierarchical distinction of the economic base and the legal and political superstructure arising on it (1979). With the becoming of code as a fundamental mean of production of the digital era, the positioning of law as an element solely circumscribed to the superstructure has been seriously, if not definitely, demolished. As Lessig announced, code and law not only share common grounds, indeed they have become undistinguishable. Hence, paraphrasing Pistor (2019), the ‘code of capital’ is present in today’s digital factories, not as an outside regulatory force, but blended with its more complex machinery.

Think of an Uber driver driving someone somewhere. In this apparently simple business, there are multiple laws in motion: contractual/private relations, state laws, highway codes, constitutional rights regarding for example no discrimination, perhaps an insurance. All of those legal relations regulate the actions between the worker, the client and the environment. The different laws and rules in motion during that specific provision of services are, even in their complexity, clear, open to everyone willing (or able) to look at them. Those regulations are perhaps prescriptive and normative, but ostensibly free will still exists. Perhaps what is most important, the enabling legislation, directly or indirectly, may be discussed and passed by some authority with democratic legitimacy. However, in the case of the digital economy, this is just half of the story. The interactions between the worker and the customer are meticulously controlled by the algorithm. Uber uses multiple algorithms and pieces of software to control the way workers and customers match, to set the prices and the route. It measures the speed, the way a driver uses car brakes. It measures the time. It finally captures the rating given by the customer to the worker to establish a rank. The working conditions of a business present in 63 countries, with nearly 3 million drivers (Sainato, 2019), are regulated by algorithms, a new kind of private law coded by the owners of capital, with no State or supreme authority above the corporation whatsoever.

Tech and law academics such as Hildebrandt (2018), Yeung (2011, 2017, 2018), Pasquale (2020), among others, have analysed how corporations are using digital technologies to enhance new forms of algorithmic control and surveillance over citizens. These technologies, labelled as automated decision-making (being algorithmic regulation a form of automated decision-making), have been designed to regulate and control behaviour through a process of automated data collection, analysis and delivering of positive/negative incentives to ‘individuals for specific actions’ (Cristianini and Scantamburlo, 2019: 647), aimed to reach a previously defined objective (Yeung, 2018: 507). Or put it in other words, a form of social control based on a cybernetic feedback loop. This sociotechnical framework would be composed of code, a system of automated data collection and the wider sociopolitical environment (Spielkamp, 2019).

Yeung argues that, in appearance, algorithmic regulation looks like any other architectural or design-based techniques of control and hence it is structured around three core components: setting standards, gathering information and finding the ways to enforce standards and modify behaviour. However, Yeung (2018), considers that algorithmic regulation differs from architectural regulation in two critical aspects: its adaptive feature, and the extraordinarily technological power driving the algorithms. These technologies are currently being used by public and private institutions around the world, in sectors such as education, policing, welfare and health, to name a few, with catastrophic consequences for the citizenry. A societal automating process (Spielkamp, 2019) orchestrated by public–private initiatives, ideologically driven by exacerbated waves of neoliberalism. This form of algorithmic power is leading to a new form of social ordering intimately connected with digital and surveillance capitalism (Morozov, 2019; Zuboff, 2019).

Tech and law scholars’ critique of automated decisions highlights the lack of accountability, transparency and public review of automated decision system, making these technologies inscrutable and eventually incontestable. Liberals argue that algorithmic regulation is threatening key aspects of (allegedly) Western Values (Kantayya, 2020) such as equality, non-discrimination, free speech and representative democracy. For them, the solution would be to stablish a legal protection by the design that would ‘safeguard our ability – as individuals – to challenge automated decision systems, by providing time and space to test and contest the workings of such systems’ (Hildebrandt, 2018: 16). Despite the relevance and pertinency of their arguments, the liberal critique to the algorithmic domination exerted by corporations is limited in reach, depth and scope by the liberal and individualistic values underpinning their arguments. They do not see algorithmic regulation as a form of class oppression but a threat to the individual liberties reified by liberalism, and hence they are unable to see how the rise of these sociotechnical system is leading to the production of new forms of exploitation and subjectivation.

### AT: Liberalism Solves War/Violence

#### Liberal capitalism has abandoned rationality in favor of computation as the guiding force behind its decisionmaking. [Liberal norms/democracy/trade/etc] fuels the endlessly violent expansion of the cybernetic episteme across the globe, which their data can never account for because it’s the endpoint they’re trying to reach.

Mbembe, 21—research professor in history and politics at the Wits Institute for Social and Economic Research, University of the Witwatersrand (Achille, “Futures of Life and Futures of Reason,” Public Culture (2021) 33 (1 (93)): 11–33, dml)

One of the major contradictions of the liberal order has always been the tension between freedom and security. Today, this question seems to have been cut in two. Security now matters more than freedom. A society of security is not necessarily a society of freedom. A society of security is a society dominated by the irrepressible need for adhesion to a collection of certainties. It is a society fearful of the type of interrogation that delves into the unknown, unearthing the risks that must surely be contained within. This is why, in a society of security, the priority is, at all cost, to identify what lurks behind each new arrival—who is who, who lives where, with whom and since when, who does what, who comes from where, who is going where, when, how, why, and so on and so forth. Moreover, who plans to carry out which acts, either consciously or unconsciously. The aim of a society of security is not to affirm freedom, but to control and govern the modes of arrival.

Current myths claim that technology constitutes the best tool for governing these arrivals, that technology alone allows for the resolution of this problem—a problem of order, but also of awareness, of identifiers, of anticipation and predictions. It is feared that the dream of a humanity transparent to herself, stripped of mystery, might prove to be a catastrophic illusion. For the time being, migrants and refugees are bearing the brunt of it. In the long run, it is by no means certain that they will be the only ones.

Perhaps more than at any other moment in our recent past, we are increasingly faced with the question of what to do with those whose very existence does not seem to be necessary for our reproduction; those whose mere existence or proximity is deemed to represent a physical or biological threat to our own life. Throughout history, and in response to this foundational question, various paradigms of rules have been designed for human bodies deemed in excess, unwanted, illegal, dispensable, or superfluous.

One historical response has consisted in putting in place spatial exclusionary arrangements. Such was, for instance, the case during the early phases of modern settler or genocidal colonialism in relation to Native American reservations in the United States, island prisons, penal colonies such as Australia, camps and Bantustans in South Africa. In late modern models of colonial occupation, control of vulnerable, unwanted, surplus, or racialized people is exercised through a combination of tactics, chief among which are confinement and modulated blockade. A blockade prohibits, obstructs, and limits who and what can enter and leave a confined space.

The goal might not be to cut the confined space off entirely from supply lines, infrastructural grids, or trade routes. Such a space is nevertheless relatively sealed off in a way that effectively turns it into an imprisoned territory. Comprehensive confinement or relative closure is accompanied by periodic military escalations and the generalized use of extrajudicial assassinations. Spatial violence, humanitarian strategies, and a peculiar biopolitics of punishment combine to produce, in turn, a peculiar carceral space in which people deemed surplus, unwanted, or illegal are governed through abdication of any responsibility for their lives and their welfare (Parizot 2018; Peteet 2018).

But there is another, early twenty-first-century example. It consists of new forms of wars, which can be called wars on speed and mobility (Papastergiadis 2010). Wars on mobility are wars whose aim is to turn to dust the means of existence and survival of vulnerable people taken as enemies. These kinds of wars of attrition, methodically calculated and programmed, and implemented with new methods, are wars against the very ideas of mobility, circulation, and speed, while the age we live in is precisely one of velocity, acceleration, and increasing abstraction and algorithms. Moreover, the targets of this kind of warfare are not by any means singular bodies, but rather great swathes of humanity judged worthless and superfluous.

All of the above belongs to the current practice of remote borderization, carried out from afar in the name of freedom and security (Amoore 2014). This battle, waged against certain undesirables and aimed at reducing them to mounds of human flesh, is rolled out on a global scale. It is on the verge of defining the times in which we live. Wars on mobility are peculiar wars on bodies at a time when belonging is weaponized. A systematic effort to target superfluous populations is undertaken by numerous states. Since only those of the same stock belong, the right to brutalize others with the near guarantee of no legal consequences is extended in some instances to organized mobs, the police, and the bureaucracy. As Arjun Appadurai notes, poor marginalized men, jobless or badly employed youth, and slum-confined casual laborers are mobilized and seduced by this type of violence and other dreams of national, ethnic, racial, or religious purity (Appadurai 2019).

Reason on Trial

These are also times when many are gradually coming to the realization that reason may well have reached its limits. Or, in any case, it is a time when reason is on trial—we are, in other words, in a sort of Dark Enlightenment. Reason is a faculty we used to recognize in humans and in humans alone. In the Western tradition we have all, willingly or not, become the inheritors of reason: reason was always seen as the highest of all human faculties, the one that opened the doors to knowledge, wisdom, virtue, and, most importantly, freedom. Although unequally redistributed among humans, it was their prerogative alone. Reason distinguished humans from other living species. Thanks to their superior capacity to exercise this faculty, humans could claim to be exceptional.

Today, reason is on trial in two ways. First, reason is increasingly replaced and subsumed by instrumental rationality, when it is not simply reduced to procedural or algorithmic processing of information. In other words, the logic of reason is morphing from within machines and computers and algorithms. The human brain is no longer the privileged location of reason. The human brain is being “downloaded” into nanomachines. An inordinate amount of power is gradually being ceded to abstractions of all kinds. Old modes of reasoning are being challenged by new ones that originate through and within technology in general and digital technologies in particular, as well as through the top-down models of artificial intelligence. As a result, techne is becoming the quintessential language of reason.

Furthermore, instrumental reason, or reason in the guise of techne, is increasingly weaponized. Time itself is becoming enveloped in the doings of machines. Machines themselves do not simply execute instructions or programs. They start generating complex behavior. The computational reproduction of reason has made it such that reason is no longer, or is a bit more than, just the domain of the human species. We now share it with various other agents. Reality itself is increasingly construed via statistics, metadata, modeling, mathematics. Second, many people are turning their back on reason in favor of other faculties and other modes of expression and cognition. They are calling for a rehabilitation of affect and emotions, for instance. In many of the ongoing political struggles of our times, passion is clearly trumping reason. Confronted with complex issues, feeling and acting with one's guts, viscerally rather than reasoning, is fast becoming the new norm.

Conclusion

As the new century unfolds, we are increasingly surrounded by multiple and expanding wave fronts of calculation. More and more, these wave fronts incorporate life, death, and matter into systems of abstraction and mechanic reasoning. In the process, they generate new automated couplings between matter and machines, waste and human beings. If yesterday the modern rational subject's raison de vivre was to fight myth, superstition, and obscurantism, the work of reason nowadays is to allow for different modes of seeing and measuring to appear. It is to help human subjects to properly identify the threshold that distinguishes between the calculable and the incalculable, the quantifiable and the unquantifiable, the computable and the incomputable. Technologies of calculation, computation, and quantification present us with one world among many actual and possible worlds. As Pasquinelli (2015) argues, different modes of measuring will open up the possibility of different aesthetics, of different politics of inhabiting not just the earth, but the universe and, we may add, of sharing the planet.

As multiple wave fronts of calculation expand across the planet, incorporating more and more life and matter into systems of abstraction and “machine reasoning,” it becomes urgent to resist an epistemic hegemony that reduces the earth to a financial problem and a problem of financial value. To be intelligent, one still needs consciousness. Indeed, were data to overcode the subject, to act without reasoning, to leave behind reflexive thinking and to privilege data correlation, formal language and inferential deductions would become the norm. Sociality would become totally automated. Reason as we knew it would be swallowed within a computational matrix that trades on circular causality (Parisi 2017).

### AT: Link Non-Unique/“Not Our NATO”

#### This is a shell game. You shouldn’t stake the link on minute differences between our evidence and the plan when the underlying epistemic commitments are the same.

Liljefors, et al, 19—professor of art history and visual studies at Lund University (Max, with Gregor Noll and Daniel Steuer, “Introduction: Our Emerging World of War,” *War and Algorithm*, Chapter 1, 7-8, dml)

As the project developed over the past six years, we repeatedly came up against two difficulties in particular, both of which are associated with temporality. One was the experience, which all three of us had, that the subject matter was always running ahead of us, that we could never quite catch up with the latest developments. Our technological future seemed to be being developed not only partly in secret but also at a speed that outstripped our capacities of reflection. The other was the problem of specifying what exactly was new in the phenomena we were chasing and what was simply a continuation of existing tendencies, features that might possibly be as old as warfare itself. Our chapters touch upon these two difficulties, but they do not fully address them. Nevertheless, these difficulties form the basis of two conclusions that have determined the way we approach our themes more generally. First, the runaway logic of technological development serves an ideological purpose, that of immunizing inventions and innovations against criticism (“your criticism would have been appropriate for version 2.0, but it does not apply to version 2.1”). Second, the question of “old versus new” may distract us from the specificity of what is taking place and thus also help to immunize these—potentially blind—practices against criticism. Our original title for the project, now the title of this introduction, tries to avoid the pitfalls of the old-versus-new conundrum by emphasizing the specific temporality and spatiality of “emergence,” a process that is not simply a unilinear progression through empty time or space but closer to an oscillation between appearance and disappearance, between the ability and inability to see.

### AT: No Mindset Shift/Self-Transformation Fails

#### Altering subjectivity alters the social. The cracks in the system are emerging; reject their calls for pragmatic action.

Karakilic, 21—senior research fellow in the RSB Lab at Nottingham Trent University (Emrah, “Idleness as a micro ethico-political action,” Organization, 2021, Vol. 28(6) 1049–1058, dml)

Today, the ‘end of history’ seems to define the ethos of humanity at large. In the age of ‘capitalist realism’, Fisher (2009) refers to Jameson (2003), ‘it is easier to imagine the end of the world than it is to imagine the end of capitalism’ (p. 2). ‘The futurity of future’ is cancelled as we have come to believe that ‘the future will be pretty much like the present only more so’ (Eagleton, 2002: para 2, also Fisher, 2014). We must resist the prevailing capitalist catechism [investissement] and keep the question of ‘what is to be done’ alive – the theorists insist. Yet, if one of the greatest ‘achievements’ of capitalism lies in ‘the capitalisation of subjective power’ (Guattari, 2000: 47), that is, the capture of human sensibility, imagination and desire, is there even any hope?

My answer is affirmative. As noted, firstly, the neoliberal project of transforming every individual into a business is increasingly in crisis. This is a subjective crisis in Guattarian parlance, revealing itself, for Berardi (2015), in the astonishing rise of mental health problems.6 Secondly, with the Covid-19 pandemic, it now seems inevitable that we will experience a deep economic recession (Davies, 2020; Elliott, 2020), which will deepen the subjective crisis when the public starts to foot the bill for bailouts. Therefore, I agree with Davies (2020) that the impact of the pandemic on economies ‘might better be understood as the sort of world-making event that allows for new economic and intellectual beginnings’ (para 12, also Žižek, 2020).

If so, how might we think of a new process of subjectivation whereby a new way of being in the world can be actualised? O’Sullivan (2011, also 2012: 59–87) offers two central theses on the new in relation to subjectivity. Firstly, he writes, ‘the new does not arrive from some other place (transcendence), but is produced from the very matter of the world. . . After all, where else can the new come from?’ (O’Sullivan, 2011: 97). This means that the new involves a recombination of already existing elements in and of the world. Yet, is this sort of recombination enough to produce something new? In the second thesis, he elucidates, ‘what else is needed [is] a certain depth. . . Put simply, the new involves accessing something outside the present plane of existence’ (O’Sullivan, 2011: 97–98). Accordingly, the production of new – subjectivity – involves experimentation with this sort of immanent outside and returning to the present plane of existence more equipped with novel perspectives to combine its elements differently.

In continental philosophy, this outside has a name.7 It is the temporal realm of virtual or pure-past in Bergson (1991), truth in Foucault (1995) (or Foucauldian truth) and incorporeal Universes in Guattari (1995, 2000). This paper cannot do justice to all these concepts. Yet, it might speculate on what traverses them as a common theme. Here, the outside implies a realm where one can experience difference-in-kind. It does not involve identification or imitation of something already existing because it is characterised by unactualised potentiality. It is not to do with knowledge as such, particularly with ‘scientific’ knowledge, as it does not understand ‘evidence’, ‘proof’ or ‘fact’. It is ‘non-dimensioned, non-coordinated, trans-sensible and infinite’ (Guattari, 2000: 75). It is a realm of ‘absolute non-narrative, non-culture, and non-knowledge’ (Lazzarato, 2014: 18). More concretely, it is a realm where one can encounter with hitherto unknown ‘universes of reference’, experiment with new ‘existential refrains and configurations’, which can then act, in the world we are living, as catalytic focal points for ‘the resingularisation of existence’ (Guattari, 1995, 2000).

The outside is not immediately accessible or apparent to the human body-mind configuration in its typical state. To access and communicate with this sort of outside, there must be a break with already existing reality and its accompanying significations, narratives, refrains, values, norms, semiotic chains and enslaving machinic apparatuses. There must be, in a word, a rupture in habit, be it formed consciously or impulsively. This presupposes, first and foremost, a suspension of the general mobilisation decreed by capital. Workers’ strikes, struggles, revolts and riots do not only operate as technologies of such a rupture but they also expose what the heterogeneous elements of the outside might be. They are the moments of, paradoxically, non-movement, suspending all dominant references and coordinates with unforeseeable consequences: ‘I am no longer as I was before. I am . . . carried beyond my familiar existential Territories’ (Guattari, 1995: 93).

In this context, I think of idleness as a micro ethico-political technology of such a rupture, a technology of Foucauldian self-care (see also Munro, 2014; Randall and Munro, 2010), potentially opening up the aforementioned outside. Nietzsche (1996) argues that idleness, against hasty mobilisation, is a ‘noble thing’, ‘really the beginning of all vices’ and ‘located in the closest vicinity to all virtues’ (p. 171). In a similar vein, Kierkegaard (1946) holds that what is evil is not idleness but those who dictate that idleness as evil. ‘Idleness . . . is a truly divine life’ (Kierkegaard, 1946: 23). He adds that ‘every human being who lacks a sense of idleness proves that his [or her] consciousness has not yet been elevated to the level of the humane’ (Kierkegaard, 1946: 24). Does not idleness mean laziness? Nietzsche (1996) mockingly answers, ‘you don’t think . . . I am talking about you, do you, you lazybones?’ (p. 171).8 By idleness, Nietzsche and Kierkegaard, therefore, do not understand acceptance of what happens, a sort of emptiness or monotony. They rather see it as an ethico-political action on one self. In Nietzsche, idleness refers to the practice of otium in the form of self-contemplation or what he (Nietzsche, 1996: 171) calls ‘meditative life’ or ‘prolonged reflection’ (Nietzsche, 1974: 259). In fact, this reflects the connotation of the term in Elizabethan English, that is, wandering in the mind. Kierkegaard (1946) implies something similar when he considers ‘the restless activity’ (vis-à-vis an examined life) a barrier before ‘the world of the spirit’ (p. 24).

In contemporary capitalism, we have increasingly become more like inputs, absorbing all stimuli imposed by two regimes of power (i.e. social subjection and machinic enslavement), and outputs, emitting some sort of response often unreflectively. In order to open a gap between stimulus and response (à la Bergson, 1991), we should resist reckless mobilisation, enjoy ‘a vita contemplative (e.g. taking a walk with ideas and friends) without self-contempt and a bad conscience’ (Nietzsche, 1974: 260), and attempt to cultivate a genuine understanding of our reactive selves. This ‘self-positioning’ (Foucault, 2000) may culminate in ‘a kind of super-productivity arising from a specifically non-productive (in capitalist terms) state’ (O’Sullivan, 2011: 99). Idleness, that is to say, may enable us to recognise and grasp not only our habitual responses and reactions, whose aggregation ultimately constitutes who we are and how we act, but also new existential terrains on another vector, in which the aspects of a different mode of being could be found.

### AT: No Spillover

#### Don’t view the alt as a single instance, but a pattern of behavior that spills out like a fractal in politically significant ways.

Schneider, 22—assistant professor of media studies at the University of Colorado Boulder (Nathan, “Governable Stacks against Digital Colonialism,” tripleC 20 (1): 19-36, 2022, dml)

May First is infinitesimally small by the standards of the tech economy. “Goldman Sachs doesn’t care if you’re raising chickens”, as the political theorist Jodi Dean (2011) has said. It’s a reminder for anyone tempted to see too much potential in personal practices, technological or otherwise. But spinning wheels are small, too, and they helped drive away the British Empire.

adrienne maree brown (2017) credits Grace Lee Boggs for helping her see that (her emphasis) “what we practice at the small scale sets the patterns for the whole system”. She explains this in a chapter called “Fractals”, which recalls how she shifted her activism to better reflect her political values in daily practice. Fractals are mathematical phenomena, frequent in nature, whose patterns at smaller scales repeat at larger scales. They are appealing and widely used as a metaphor, being both mathematically precise in theory and conveniently vague when applied to human affairs. Those like brown and Boggs who apply fractal-talk to politics exercise a kind of faith. To make good on that faith, there must some linkage, some strategy, that connects self-governance from the scale of small communities to the larger societies those community seek to transform. There was a fractal in the free maroons of Saint-Domingue who stormed down from their mountains into combat with French troops so the whole island could be free.

There was a fractal in the spinning wheel on the Indian National Congress flag, extending from a traditional practice to an eventual industrial policy. These chickens came to roost because they were part of a strategy that involved organised confrontation with colonial power. Self-governing became a challenge, a threat. In even small experiments, governable stacks can begin to normalise the otherwise elusive fact that better ways of organising technology are possible. Carefully chosen practices sever habits of dependency on the systems we seek to resist.

### AT: Scenario Planning

#### Scenario planning fuels cybernetic militarism. You should prioritize speculation about the futures they foreclose over narrow predictions and cost-benefit assessments within single scenarios.

Grove, 20—Associate Professor of International Relations at The University of Hawai’i at Mānoa (Jairus, “From geopolitics to geotechnics: global futures in the shadow of automation, cunning machines, and human speciation,” International Relations, 2020, Vol. 34(3) 432–455, dml)

Following Bohr, I share the position that the future does not exist. Instead, for me, the value of speculative assessments of global order come from what such exercises mean for the present.18 Decisions about weapons development, commitments to international institutions, the hubristic foreign policies that lead to war, are pursued on the backs of assumed futures. For instance, if strategic decision-makers in the U.S. military were not confident in their ability to build a missile shield and deploy disruptive artificial intelligence based weapons platforms it seems likely that they, and the policy-makers they inform, would not be as likely to abandon institutions like the United Nations or so casually escalate competition with states like China and Russia.

Therefore, the positing of other possible futures in geopolitics creates counter-futures that can undermine the confidence that comes from contemporary claims about the inevitability of technological development.19 Beyond being just another scenario in the pile of future scenarios, the kind of speculative future offered here tries to insist that multiple futures be consider at once rather than assessing probabilities and picking the one future that seems the best ‘bet’. In this I am offering an alternative image of the transformation scenario offered by the DoD and those in Silicon Valley who offer automation as a future of egalitarian luxury. Rather than accepting transformation, the vision of the future I build here considers what continued growth of existing capability would look like within our current framework and how continued growth may actually create unplanned transformations without the ‘breakthroughs’ we have been promised.

So, what is offered in this article is an effort to proliferate the number of possible outcomes considered so that we can do more than simply ‘disprove’ the predictions made about artificial intelligence and automation. It is to show that the partial success and failure of these pursuits can still have transformative effects just not the effects we thought could be leveraged for strategic advantage or global hegemony without a significant cost to the form of life that hegemony was meant to protect.

### AT: State Good

#### Voting neg doesn’t reject the state entirely, but it does disrupt the new channels of cybernetic governance that the aff opens up, which is sufficient. The academy can turn cybernetics against itself, but only the alt’s critical stance alone solves.

Hall, 20—Professor of Education and Technology, De Montfort University (Richard, “Platform Discontent against the University,” *The digital age and its discontents: Critical reflections in education*, Chapter 7, 123-127, dml)

This focus upon notionally public institutions being re-geared as productive businesses or capitals has been amplified through the instantiation of competition among individual academics, disciplines and institutions, whose activities and impact are quantified. Quantification and flows of data are crucial in the ongoing re-purposing of the University as a productive domain, and in opening it out to other economic sectors which are able to make use of those data to commodify new services, and thereby extract value or rents. This has been discussed globally in terms of massive open online courses (MOOCs), in particular focused upon processes for creating commodities and data that can be curated for exchange-value (see Hall 2015b; Shanley, Swierstra & Wyatt, Chapter 11, in this volume).

In the English context, the Department for Business, Innovation and Skills (DBIS 2015) has enacted policy that links educational outcomes and HM Revenue & Customs tax data, in order to leverage data about populations of graduates and the value of their educational profiles. This connects to work commissioned by the Department for Education (DfE) on graduate (longitudinal educational) outcomes, and new regulatory structures through the creation of the Office for Students (OfS) enshrined in the Higher Education and Research Act (DfE 2017), which have generated an infrastructure for managing competition within the sector, through a focus on value-for-money and the availability of performance data.

The availability of such data frames a technocratic discourse for continuous improvement through the management of risk in open markets, with effective competition defined as the primary enabler of student and institutional success. Such metrics are immanent to the generation of human capital and commodity-knowledge, and they shape a context for the ongoing valorization of the labour of both academics and students. This is increasingly important in a competitive HE environment, precisely because the value of a commodity, or of a commodified service like an accredited award, is not given by its price. Rather, it is given by the quantity of labour that is socially necessary for its production at a given, global, average productivity. It is given by the amount of labour embedded in the product. Thus, commodities produced by labourers with more knowledge or skills, or richer technologies, either have higher value or can be produced more efficiently, and deliver competitive edge.

However, capital is always seeking to drive down the cost of labour, in order to extract a surplus from its investment. This search for surplus-value brings labourers into asymmetrical relationships in the market, as their labour is sorted and compared, based on its ability to deliver value for the employer. While an educator might be producing a book, marking scripts or undertaking knowledge transfer, in the market their work is abstracted from its concrete context, so that it can be equalized across a global terrain. It is the integration of this abstract form of labour inside a technology-rich, educational context that is designed to produce wealth in the form of surplus-value, which can be described in terms of valorization (Hall 2018). This process tends towards the proletarianization of academic labour by rationalizing its processes or modes of production, such that labour-value as a cost of production (use-value) is reduced. Here, having appropriate performance data, locked inside systems of production that can be finessed in almost real-time, with feedback that enables new modes of production, is crucial. There is potential here for new cybernetic modes of management for academic production, rooted in quantification and the internalization of algorithmic regulation (McQuillan 2015).

One result of this refocusing of HE for productivity and profitability, by increasing the realm of valuable work (in that it generates new forms of capital), has been to subsume the politics of HE under economic dictates. Thus, governance and regulation tend to reinforce a normative, technology-neutral narrative of HE, immanent to progressive ideas of entrepreneurship, excellence and impact, and reliant upon educational outcomes as exchangeable commodities that demonstrate accrued human capital. Technocratic governance conditions academic work through mediations like private property, the division of labour and commodity exchange (Hall 2018).

It is important to recognize the inhuman impacts of techniques of re-engineering, and technologies that have been used to discipline labour both at work and across society more generally. This has been witnessed in increased reporting by academic labourers of ill-health, overwork and precarity (Hall & Bowles 2016). However, these moments of reporting point towards categories of experience that are analytically generalizable in the concrete experiences of individuals, but which also enable their source to be revealed in alienated labour (Hall 2018). The horizontal sharing of such narratives also enables a surfacing of experience that might coalesce as a shared operating system, architecture or platform from which struggle can emerge. The point of such revelations is to highlight the possibilities for deliberation, association and solidarity.

For academic labourers, struggle is immanent to, and cuts through, a range of intersecting narratives, and these intersections reveal commonalities of experience grounded in alienating and commodified work. This offers the potential for reimagining that experience for a different social purpose. It is important to recognize that such reimaginings are situated historically and materially, with deep connections to the ability of communities to re-purpose technology for socially useful outcomes that point beyond value production (Haiven 2014). These include established transnational commons and peer-to-peer networks (P2P Foundation n.d.), alongside state-based interventions, like Ecuador’s Free-Libre, Open Knowledge Society project (FLOK n.d.) or the Cybersyn project in Chile under Allende (Miller Medina 2005). However, they also include: first, a multitude of workers in the digital, platform economy struggling against precarity (Lorey 2017), including non-tenured academics and teachers; and second, social movements with educational intent, for instance, Rhodes Must Fall and work on decolonization emerging from Black Lives Matter. These use technologies to describe associational practices and values as pedagogical projects at the level of society.

Such descriptions can be enriched through engagement with the idea of digital platforms (Kornberger, Pflueger & Mouritsen 2017; Srnicek 2017), in describing knowledge production that reimagines social reproduction beyond institutions like the University. Is it possible for knowledge production, capitalized and valorized inside the University, to be liberated across the social terrain against capital’s cybernetic control mechanisms, for more humane ends? Is it possible to bear witness to those humane ends as a movement beyond discontent, to describe new forms of autonomous activity that constitute ‘selfgovernment for the producers’, and which point towards forms of education beyond ‘the fetters placed upon it by class and government’ (Marx 2008: 47)?

Following Marx’s engagement with machines and technology (1991), it is important to critique platform technology as it reproduces new forces of production, which then enable new social relations and forms of organization, including precarious labour, insecurity and entrepreneurship of the self. Such forms of organization are a means of rationalizing necessary social labour and creating anew the sphere of heteronomy, which organizes the production of necessities (Gorz 1982; Marx 1991). This demands that academics reproduce new skills, knowledge and capabilities to be exchanged, and thereby annihilates the time for free activity or the sphere of autonomy. A critique of these processes asks: How do we liberate digital tools from inside organizations like universities, in order to create non-commodified spaces for direct, cooperative reproduction (Roggero 2011)? This needs to be an intersectional critique of institutionalized technologies and techniques, precisely because those bodies marginalized by class, race, gender, (dis)ability and sexuality have lacked power to widen their spheres of autonomy (Ahmed 2017; Ciccariello-Maher 2017). There is a clear need to describe the modes by which capitalized platform technologies enable social relations that are exploitative for those in the core of institutions, while it further expropriates those on the margins (Fraser & Jaeggi 2018).

This chapter describes the potential for the intersection of social movements of struggle with digital technologies, to uncover alternative imaginings for HE beyond the quantified University. This is enabled in the production of socially useful knowledge specifically designed to refuse hegemonic power over the world. Here, discontent with the world as it is becomes a moment to re-purpose and transform technologies and techniques by embedding them inside solidarity economies. Such processes facilitate platforms for dissent. This explicitly challenges the transhistorical, positivist idea of the University as a space for knowledge production that co-opts technology in order to reinforce monopoly capitalism. It asks if discontent at the level of the platform might disrupt the University such that we can reimagine that a different higher education is possible.

### AT: Timeframe/Try Or Die

#### You should flip “try-or-die” and choose to understand the timeframe for our impact as imminent, even if the technology itself is far away. Once it’s here, it’s too late!

Liljefors, et al, 19—professor of art history and visual studies at Lund University (Max, with Gregor Noll and Daniel Steuer, “Introduction: Our Emerging World of War,” *War and Algorithm*, Chapter 1, 2, dml)

The first point we wish to make in this introduction is that public debates about radically new and powerful ways of waging war must take place long before any conflicts that might motivate their employment. Once technologies have emerged and matured, history will have invested itself in the new possibilities, and the space of politics will have shrunk. Because we are approaching our subject before it has fully matured, describing and analyzing it presupposes a measure of speculation. Franck and his colleagues saw, with appropriate clarity, that radically innovative ways of waging war will radically transform our societies, even in times of peace. Major conurbations, as suitable targets for the use of nuclear weapons, would become huge liabilities for the United States, as the report made clear. Franck and his colleagues observed that the bomb would transform the way Americans lived and worked; in this way, they went beyond the science of nuclear physics into the broader sciences of the social and the political. In doing so, they expressed a general fact about technology. Technology not only serves the purpose for which it is invented but also determines, through its form, a particular type of social synthesis: a way in which humans who use that technology will find themselves organized in space and time. Nuclear physics endowed the Franck report with authority, but its content could have been authored by any reasoning human being daring to extrapolate from technological ground to social form. It was most definitely written for such reasoning human beings.

The second point to be made, then, is that reflection on an emerging world of war cannot be restricted to certain specialized disciplines. Those who reflect on this world must give themselves the speculative means to do so. These means are to be found in the various traditions of thought, speech, and visual representation that are at work in the novel forms warfare takes, traditions that thus make the emergence of these forms seem plausible or even historically inevitable. Taking our cue from these means, we may extrapolate from them into the future, attempting, as it were in a different key, to do what Franck’s group did for nuclear warfare (even if they did it, through no fault of their own, all too late). Any resistance can only grow from the point that emerges once we have gone far enough, deep enough, in our pursuit of the traditions of representation that are now morphing into a world of war. It is at that point that different views and possible trajectories might open up, perspectives from which it becomes clear that the seemingly inevitable escalation of war is in fact not inevitable at all.

### AT: Tech Good/Inevitable

#### This is a false choice! We don’t reject technology or cybernetic thought wholesale, we reorient it towards self-governance, which spills up to challenge technology’s relationship to structural domination.

Schneider, 22—assistant professor of media studies at the University of Colorado Boulder (Nathan, “Governable Stacks against Digital Colonialism,” tripleC 20 (1): 19-36, 2022, dml)

The spinning wheel remains a cipher and a site of conflict, an everyday technology summoned to a contest over the meaning of democracy. Despite having political ties with Gandhi’s assassin, the Hindu nationalist prime minister Narendra Modi promotes homespun cloth and has done photo-ops operating a spinning wheel. Modi has meanwhile shuttered boards that gave artisans a voice in policy under the slogan “Minimum Government and Maximum Governance” (Vincent 2020). The technology itself does not guarantee self-governance, but it can be the symbolic base from which ever-enlarging acts of self-governance defeat an empire.

In the spirit of the technological cipher I propose the pursuit of “governable stacks”: an orientation toward ungovernable organising under digital colonialism.

The geek-colloquial meaning of stack, in the most relevant sense, is a set of interoperating hardware and software. Benjamin H. Bratton (2016, xvii) goes further, describing the stack as “a new architecture for how we divide the world into sovereign spaces”. Its layers come with intersecting relations of dependency, along with emergent freedoms. A stack might include all that enables one to use a social media service, for instance: the server farms, the corporation that owns them, its investors, the software the servers run on, the secret algorithms that analyse one’s data, the mobile device, its accelerometer sending biometric data to the server farm, the network provider, the backdoor access for law enforcement, and so on. The layers of a stack might further include the sun or coal powering it, the wars fuelled by rare-earth mining, and the mythologies and rituals that dictate what people in it will tolerate. Each layer is in fact multiple layers, and layers build on each other.

Before governable stacks were the topic of this article, they were an experience for me, particularly through an organisation in which I have been an anecdotal participantobserver for a decade. May First Movement Technology (mayfirst.coop) is a cooperative that provides web hosting, cloud services, and public education for a 850-strong membership composed largely of activist organisations in the United States and Mexico (Lopez et al. 2007). Through the tools May First offers, I have been able to move much of my daily computing away from companies that surveil and extract into servers I co-own and govern, running commons-based software. I have formed relationships with the people who maintain these services and participated in decision-making over bilingual conference calls and online ballots. I learn about new tools from fellow members, and we sponsor events that teach people outside our membership how to challenge the power of big tech in their lives and their communities. Akin to the slow food movement, this is slow computing (Schneider 2015), its pace measured not by bandwidth or processing speed but by the attention to the social dimensions of everyday practice.

While Silicon Valley elites escape to phone-free retreats (Marantz 2019) and agonise about their children’s exposure to screens (Bowles 2018), May First offers no such “abhorrence of machinery” (Chaplin 1966, 373). It does not accept the false choice between addictive, surveillance-addled apps and a fantasy of returning to some blissful innocence. Instead, members share technologies that do what they need and that they can reasonably control. These technologies, and the self-governance we surround them with, are our stack. May First does not demand that you ‘learn to code’, or otherwise trade traditional knowledge for digital expertise. For me, being part of a governable stack like May First has unlocked political possibilities. The experience motivated years of working to build governable stacks elsewhere, because I know that it can be done. I poured myself into developing alternative ownership models like “platform cooperatives” (Schneider 2018) and “exit to community” (Mannan and Schneider 2021) that are better suited to making tech governable. With time, ungovernable stacks have come to feel like foreign lands. I may use them, but they never feel like home.

Governable stacks are cyborg assemblages of inter-operating technology, in symbiosis with human relationships (Haraway 1991; Puar 2012). Those relationships organise power, in partnership with the technology more than through domination over it. We learn with each other, and we learn with the machines, which take on life of their own – through their own intelligence, or that which we affectionately project onto them. In the sense of Grace Lee and Jimmy Boggs’s dialectical humanism, governable stacks invite the people who use them to change their relationship with technologies, to imagine different sorts of technologies, and to be changed themselves.

Perhaps governability can be achieved by reconfiguring tools that already exist; perhaps it is necessary to make new ones. Tiziana Terranova (2014), who has proposed the complementary idea of a “red stack”, writes that insurgent stacks become “new platforms through a crafty bricolage of existing technologies, the enactment of new subjectivities through a detournement of widespread social media literacy”. Older technologies may be better suited to this than newer ones (Maxigas and Latzko-Toth 2020). Even the colonial platforms can be repurposed – as the Algerian writer Kateb Yacine said of the French language – as spoils of war. The lifeblood of the governable stack is not any claim to innovation but the self-governance that flows through it. What emerges from there is the point.

The Guifi.net community Internet network in Catalonia (guifi.net) became the condition of possibility for a suite of “community cloud” services deployed through it (Selimi et al. 2015). FairTEC (fairtec.io) combines into one product a stack of preexisting services across three European countries: a sustainably manufactured smartphone, a non-commercial operating system, a cooperative telecom, and a cooperative phone rental company. The developers of the CommonsCloud (commonscloud.coop) see their shared technology as only one layer of a larger community stack, which also includes “social” and “discursive” layers – the context and substance of their self-governance. Layers form over time, too. Governable stacks of the past lurk in the archaeology of colonial systems through legacies like Indymedia, an activist social network whose participatory servers and software prefigured the corporate “Web 2.0” (Pickard 2006). Indymedia itself drew from decades of organising among activist communityradio stations, particularly in Latin America (Ruiz Martinez 2021). There can be no one governable stack – only many, whose archipelagos of commoning enable each other and give rise to more.

Technologists seeking alternative visions have often gravitated to the Free Software and Open Source movements, which employ creative licensing to enable the sharing of accessible and modifiable code. These movements have been successful in terms of the sheer volume of widely used software in their commons. But their emphasis on the freedoms of individual users, as well as of corporations, has privileged those with the technical know-how to take advantage. The software commons has spawned operating systems that fly in military jets and databases that aid in the imprisonment of asylum seekers (Ehmke 2020). In the name of freedom, too, developers have harboured sexism and other forms of exclusionary culture (SSL Nagbot 2016). Governable stacks should prioritise community accountability alongside individual freedom.

Another emerging strategy for challenging digital colonialism has come from within. Employees at Silicon Valley giants have achieved reforms by organising against certain ethical outrages at their workplaces (Tarnoff 2020). Yet there are limits to what these campaigns are likely to achieve, since these workers are invested – often literally, through stock options – in the basic business models of their employers. Employees’ actions can present the impression that their protest cleanses the colonial tools they produce. Governable stacks do not seek merely to improve the occupier. “Decolonization is not an ‘and’”, as Tuck and Yang (2012) put it. “It is an elsewhere” (36).

Experiences with governable stacks introduce us to possible elsewheres. The spinning wheel was an elsewhere, the invention of a democratic India. May First Movement Technology is an elsewhere for its members, who in turn become part of its learning and evolving. Collectives, families, and movements can assemble and adjust their stacks over time, wherever possible seeking to make their technological lives ever more governable. I next turn to strategies to guide the process of doing so.

5. Governable Strategy

May First is infinitesimally small by the standards of the tech economy. “Goldman Sachs doesn’t care if you’re raising chickens”, as the political theorist Jodi Dean (2011) has said. It’s a reminder for anyone tempted to see too much potential in personal practices, technological or otherwise. But spinning wheels are small, too, and they helped drive away the British Empire.

adrienne maree brown (2017) credits Grace Lee Boggs for helping her see that (her emphasis) “what we practice at the small scale sets the patterns for the whole system”. She explains this in a chapter called “Fractals”, which recalls how she shifted her activism to better reflect her political values in daily practice. Fractals are mathematical phenomena, frequent in nature, whose patterns at smaller scales repeat at larger scales. They are appealing and widely used as a metaphor, being both mathematically precise in theory and conveniently vague when applied to human affairs. Those like brown and Boggs who apply fractal-talk to politics exercise a kind of faith. To make good on that faith, there must some linkage, some strategy, that connects self-governance from the scale of small communities to the larger societies those community seek to transform. There was a fractal in the free maroons of Saint-Domingue who stormed down from their mountains into combat with French troops so the whole island could be free.

There was a fractal in the spinning wheel on the Indian National Congress flag, extending from a traditional practice to an eventual industrial policy. These chickens came to roost because they were part of a strategy that involved organised confrontation with colonial power. Self-governing became a challenge, a threat. In even small experiments, governable stacks can begin to normalise the otherwise elusive fact that better ways of organising technology are possible. Carefully chosen practices sever habits of dependency on the systems we seek to resist.

### AT: You’re Using A Computer

#### We noticed ☺ but thanks for pointing it out, because it proves alt solvency and why debate is key!

Bellanova, et al, 21—Postdoctoral Researcher at the University of Amsterdam (Rocco, with Kristina Irion, Katja Lindskov Jacobsen, Francesco Ragazzi, Rune Saugmann, and Lucy Suchman, “Toward a Critique of Algorithmic Violence,” International Political Sociology (2021) 15, 121–150, dml)

Computing played an important role in bringing together this collective discussion: not only as a subject matter, given that the algorithmic, in all of its diverse instantiations and multiple understandings, is a recurring research object for each of us. While we were able to meet in person on a few occasions, most of the conversation took place online, on platforms such as Zoom and Google Docs. These are run by private actors involved, as data sources or algorithm providers, in security practices ranging from law enforcement to warfare, including practices that we have been questioning in this very collective discussion. Such an irony is not lost on us. It actually highlights even further the urgency of discussing how, through what digital means, a critique of algorithmic violence can be carried out. Currently, a massive digitalization of education, from elementary schools to universities, is happening at unprecedented speed. The question of how we, as teachers, colleagues, and intellectuals, navigate and negotiate computation is indeed becoming paramount in view of “mediating” critique, as in “work[ing] as one link in a chain of meaningmaking that stretches across diverse actors and domains of life” (Austin, Bellanova, and Kaufmann 2019, 4). Hence, rather than offering firm conclusions, this discussion puts forward a number of issues that we are particularly concerned to see highlighted in future debates.

## Aff

### Alt Fails—2AC

#### The alt fails as soon as it’s used in actual struggles against cybernetic power, if it isn’t hijacked by hegemonic forces from the get go. Legal solutions to algorithmic violence are more effective by every metric.

Dyer-Witheford and Matviyenko, 19—associate professor of information and media studies at the University of Western Ontario; assistant professor of communication at Simon Fraser University (Nick and Svitlana, “What Is to Be Done?,” *Cyberwar and Revolution: Digital Subterfuge in Global Capitalism*, Chapter 3, 123-127, dml)

In their “a user’s guide for privacy and protest,” Finn Brunton and Helen Nissenbaum (2015, “Introduction”) summarize these and similar tactics as practices of “obfuscation” or “the deliberate addition of ambiguous, confusing, or misleading information to interfere with surveillance and data collection” in the time when we are “unable to refuse or deny observation.” They distinguish between several kinds of obfuscation practices: selective and general, short-time and long-time, and also those conducted in secret and others conducted openly: “For some goals, for instance, obfuscation may not succeed if the adversary knows that it is being employed; for other goals—such as collective protest or interference with probable cause and production of plausible deniability—it is better if the adversary knows that the data have been poisoned” (“Introduction”). However, as Brunton and Nissenbaum acknowledge, the speed at which these practices become disempowered, often by way of corporate and state power appropriating revolutionary tactics as soon as they emerge, is astonishing. In chapter 2, we identified this process as the consequence of the troubling reciprocity between surveillance and mobilization, one of the typical features of the new type of cyberwars. For example, Twitter, a passive surveillance platform for the Russian government during the Snow or White-Ribbon Revolution in December 2011 (the protests against Russian legislative election results), was fully weaponized within a month. By January 2012, the Twittersphere was infiltrated by pro-government trolls countering critique of the fraud election by massively disseminated praise for and sympathy with Putin; “God save Putin” or “pointless protest” posts scored just as high as “you are (the) movement,” “Putin thief,” or “be one white-ribbon” (Spaiser et al. 2017, 139, 142), and “the use of Twitter bots” became “a reliable technique for stifling Twitter discussions” (Brunton and Nissenbaum 2015, “Core Cases”).

How far the advice of digital self-defense programs is followed is, moreover, dubious. As such programs usually acknowledge, assessing the actual level of security germane to different types of activism, treading a boundary between carelessness and paranoid grandiosity, is challenging and highly context dependent. Advanced security measures require careful attention to use properly, can be compromised by easy errors, are subject to technical failure, and can in and of themselves attract, rather than deflect, attention. A recent report on the actual practices of social movement participants in the United Kingdom is sobering (Dencik, Hintz, and Cable 2016). Based on interviews with activists, it finds that while there is, post-Snowden, a heightened awareness of surveillance, very few act on it. Many organizations are so deeply reliant on networks and social media for “general awareness-raising, advocacy, mobilizing, organizing and expanding their actions and membership” that introducing new technological practices, always in the context of stretched resources, is extremely inconvenient and time consuming. Even when antisurveillance measures do not require a level of expertise exclusive to “techies,” users inherit an expectation of seamless, effortless computing, particularly in volatile situations requiring fast communication. Activists may in crisis situations abandon platforms known to be insecure and turn to others, as they did in Egypt when protestors left Facebook in favor of Signal (Mackey 2016). However, according to Dencik, Hintz, and Cable (2016), in day-to-day life, the surveillance issue is most often resolved by “selfregulating online behavior,” such as “not saying anything ‘too controversial’ on social media” or by assertion that an organization has “nothing to hide.” This latter assurance may be either overconfident or an indication of panoptic political chill. It also ignores the fact that ubiquitous surveillance has gone far beyond users’ verbal expression and use of keywords to the recordings of location, chronology, and activity now embedded in our machines; for example, those who attend a protest or are close to a terrorist attack will always be the subjects of data that positions them in proximity to such events.

Though Snowden’s revelations have had an effect on popular percep - tion of digital networks, their implications are easy to misrecognize. In North America, they have been cynically played by the giants of digital industry. After years of voluntarily complying with the NSA PRISM surveillance program, providers of digital platforms and services responded proactively to the new antisurveillance sentiment by offering updated services with reinforced security features. This swerve has led digital capital into some conflicts with state security, most notably in the legal dispute between Apple and the FBI arising from the company’s refusal to construct a “backdoor” to undo the password on an iPhone5c used in a 2015 terrorist attack (Zetter 2016a). Privacy activists supported Apple, but before the case could go to court, the FBI paid to crack the password with the help of an outside contractor (variously reported as either a professional hacker or an Israeli cybersecurity firm), thereby evading any legal showdown between the intelligence agencies and their erstwhile corporate partners. Such contradictions between free enterprise and the security apparatus that protects it may create certain technological options for movement activists—at least those who can afford the latest upgrades. However, information capital’s new security consciousness hijacks postSnowden discourse to evade its larger implications. It is intended to deter mass defection from mobile phone and social media, keep the public on the networks, and hence within a field where big data about habits, purchases, locations, friends, and contacts continue to be amassed by corporations whose privacy assurances can and will be compromised by voluntary or forced collaboration with state authorities—or ingeniously bypassed.

There are, therefore, serious limitations to purely tactical, and technical, movement adaptations to the surveillance state. An alternative is political and legal contestation of surveillance. In North America, some of the most important of these challenges come from Afro-Americans, First Nations, and Arab-Muslims, who, on the basis of collective historical experience, point out how profiling systems at once constitute and control specific suspect racialized social groups (Kundnani and Kumar 2015), demonstrating how Virilio’s “endocolonization” is most virulently applied to the already colonized. In many cases, such challenges also point directly to the military aspects of racialized surveillance. Thus the digital tracking of Black Lives Matter activists and leaders by both state agencies (Joseph 2015) and private cybersecurity firms (Buncombe 2015) stands as an extension of the paramilitary combination of “stingray” mobile phone signaling interceptions, drone observation, and information “fusion center” cross-checking transferred from Middle Eastern wars to the policing of Afro-American neighborhoods (Collins et al. 2015), practices that in turn build on a lineage of white vigilance rooted in fear of slave revolt (Browne 2015). At the time of writing, two activist groups, the Color of Change and the Center for Constitutional Rights, are suing the FBI and the Department of Homeland Security on the surveillance of protests in eleven cities, arguing that it undermines free speech while serving to “chill valuable public debate” (Timberg 2017).

In Dakota, the company TigerSwan, founded by a former U.S. special operations soldier, was hired by Energy Transfer Partners to monitor the Sioux Nation’s Standing Rock anti-oil pipeline protests. It conducted radio, video aerial, and social media surveillance of protestors; shared intelligence with police; and mounted online campaigns to discredit the movement. TigerSwan now faces civil suits for operating a private security service without a license (Brown 2017; Brown, Parrish, and Speri 2017). In another case, a coalition of activists, including high-tech workers, has protested the potential involvement of Peter Thiel’s software company Palantir in building a “Muslim database” to support Trump’s promised “extreme vetting” of immigrants (Woodman 2016; Buhr 2017). Palantir as a start-up benefited from investment by CIA venture capital front company In-QTel and has a record of work with the CIA, NSA, and U.S. Customs and Border Protection Agency (Biddle 2017).

Over summer 2018, a remarkable wave of technology-worker resistance to military and militarized policing projects swept through Silicon Valley (Tarnoff 2018). At Google, workers successfully organized to shut down Project Maven, a Pentagon project that uses machine learning to improve targeting for drone strikes. Following this, Google’s CEO, Sundar Pichai (2018), published a statement of principles on AI development, saying it would not work on AI weapon or surveillance contracts, although reserving the right to pursue cybersecurity projects. In June, the company withdrew its bid on a $10 billion Pentagon contract for the Joint Enterprise Defense Infrastructure (Jedi) cloud computing project (BBC 2018f ). Meanwhile, at Amazon, workers petitioned Jeff Bezos to stop selling the corporation’s Rekognition facial identification software to U.S. police departments and the Immigration and Customs Enforcement (ICE) agency, notorious for its “zero-tolerance” enforcement policies (Conger 2018a). At Microsoft, workers similarly demanded the termination of a $19.4 million cloud computing contract with ICE (Frenkel 2018), and at Salesforce, workers tried to block the company’s involvement with Customs and Border Protection (CBP).

Other legal challenges to military-derived surveillance have come from individuals, such as the case launched by David Carroll, in U.K. courts, against Cambridge Analytica, a former military contractor that moved into the business of voter profiling. Analytica is widely believed to have assisted the Trump campaign in targeting ads to select voter groups during the 2016 election. Carroll’s case attempts to use British privacy law to compel Analytica to reveal the basis on which his (and, by implication, other voters’) personal profile was constructed (Cadwalladr 2017a). Such examples move beyond digital self-defense toward what Dencik, Hintz, and Cable (2016) call “a (re)conceptualization of resistance to surveillance on terms that can address the implications of this data-driven form of governance in relation to broader social justice agendas”—a broadening that, we suggest, should engage other aspects of cyberwar as well. Before taking up this issue, however, we look at another aspect of movement tactics on the battlefields of cyberwar: the attempt to hack back.

### Cybernetics Good—2AC

#### Cybernetic innovation solves extinction and all their impacts—humanities professors shouldn’t be in charge of nuclear silos.

Milne and Kinsella, 17—Faculty of English, University of Cambridge AND School of Media, Culture and Creative Arts, Faculty of Humanities, Curtin University (Drew and John, “NUCLEAR THEORY DEGREE ZERO, WITH TWO CHEERS FOR DERRIDA,” Angelaki, 22:3, 1-16, dml) [language modifications denoted by brackets, un-underlined portions of this card mention self-harm]

A further line of political deflection is the accelerationist strategy. There are quasi-leftist accelerationists (Mackay and Avanessian). We should take seriously the proposition that the only way to save the planet is to accelerate the pace of technological innovation. On one view, the only way to save the planet from global warming is by developing nuclear fusion technology. This points down the pathway of the Hadron collider and big science. But there is another acceleration that would decommission all forms of nuclear technology, and rather than imitating the sun, seek renewable forms of symbiosis with solar energy. A global diversion of military and industrial resources into renewable and sustainable energy forms would constitute a technological acceleration coupled with a radical deceleration in fossil fuel consumption, perhaps even putting the brakes on the fallacy of economic growth. What quickly emerges is that there are choices to be made across contested terrains. The forms of acceleration are political choices, choices of great urgency, but to thematise “acceleration” as such provides scant critical purchase on different forms of acceleration. What is needed are nuanced mediations of the science and technology currently available, along with global democratic decision making on those technologies we choose to accelerate or slow down.

Another version of the “accelerationist” argument captures some of the ideological workings of the term. In Marxist circles, an “accelerationist” is someone who thinks that the collapse of capitalism will be hastened by allowing reactionary forces to speed up capitalism’s self-destruction. There are occasions when such an argument has validity: nothing about the form of the argument makes it inherently or structurally wrong. There are revolutionary moments when allowing capitalism to collapse in order to rebuild a socialist society is a better path than propping up a failing capitalist regime. The judgement is political rather than philosophical. In most contexts, however, the accelerationist argument, especially as a political principle, is deeply dangerous. It would be better, for example, to preserve a failing US capitalist regime while building social forces to take it over, than to allow the nuclear weapons of the United States to fall into the hands of a suicidal [self-destructive] military rearguard or some counter-revolutionary terrorist organisation. Preserving the possibility of human life might involve propping up collapsing capitalist institutions, not least the nuclear safety inspectorate, rather than allowing humanity to be swallowed up by some death spiral of presidential dictators in fear of being toppled. These are critical judgements that could arise at any moment, with real risks that poor judgements will hasten a nuclear confrontation that leads to mutually assured annihilation. The formal shape of an accelerationist argument needs to be understood strategically and politically if it is to address nuclear questions.

The accelerationist view that the deepening of capitalism could hasten its self-destructive tendencies and lead to its collapse is not inherently suicidal, but consideration of what the collapse of capitalism might mean for the global stock of nuclear weapons and nuclear power stations indicates dangers. Amid the collapse of capitalism, securing the safety of nuclear resources is a fundamental priority, and preparing a decelerationist strategy is an essential political position for any radical formation serious about nuclear safety. Against the horizon of nuclear crisis, we rely on workers to know how to manage and decommission nuclear weapons, silos and power stations. This requires “good” science and ongoing struggles to control the decision making around weapons and energy systems. Concrete consideration of what happens to ageing nuclear systems in an imploding political system has been tested in the fall of the Soviet Union. Imagine the retrenchment of reactionary forces around nuclear installations threatening suicidal [apocalyptic] political terrorism on a global scale. The risks of a collapsing capitalist system taking the world down with it are clear. Chernobyl and Fukushima, moreover, stand as metonyms of the risks involved in systems that were apparently functional and yet spiralled out of control even in what might be called peacetime. The risks of the US or the Chinese nuclear androids imploding involve different decisions. Again, the need is for nuanced political judgements and strategies, involving scientific expertise along with solidarity between scientists, workers and new social formations.

The need for nuanced political engagement with “good” science suggests some of the risks in any thematisation of science within archaic philosophical paradigms. One form of nuclear denial is the reluctance to engage with the concrete consequences of scientific knowledge, preferring to retreat behind the limited competence of the humanities scholar. It takes some hubris of philosophical interpretation to suggest that literary studies can offer to understand the fictional heart of the nuclear threat despite knowing very little about the science and technology involved. There will, doubtless, be philosophical, ontological and metaphysical questions that science and technology cannot answer. Nuclear arguments may carry within their forms and conditions of possibility the illusions of Western metaphysics, and decommissioning nuclear metaphors could turn out to be as significant as criticising the public lies of nuclear policy: but the nuclear android also imposes less philosophical imperatives to engage with science, from medical science to nuclear waste disposal, and through the critique of the political economy of the nuclear android. None of this suggests that metaphysics should or could be deleted. To deflect engagement with the existing mess of the nuclear android back into metaphysical and literary questions nevertheless threatens to evade the existing threats, not just of nuclear annihilation but of Indigenous rights, environmental politics, and the raft of mediations and regulative practices on which any amelioration of nuclear damage depends. Nuclear war remains an imminent threat, but so does the persistence of practices and strategies that contribute to maintenance of the spectacle of the nuclear rather than its disarmament and decommissioning. To reduce the problem to the “threat” of nuclear war is to imagine that the actually existing industrial behemoth of nuclear production is a fiction. It isn’t. Nuclear weapons testing and the history of nuclear accidents were not just fables, and nor was the arms race a war of sophistry and rhetoric, however much sophistry and rhetoric were deployed to disguise the ecocidal tendencies of the nuclear android.

### Cybernetics Thesis=Wrong—2AC/1AR\*\*\*

#### \*\*\*Note while prepping: Do not read all of these cards in the 2AC (or 1AR)! You should familiarize yourself with them and pick and choose your favorite(s); I have included them in no particular order, with the exception that the first card (Dunn Cavelty and Wenger) is the only particularly topic-specific one.

#### Their link arguments are based on deterministic oversimplifications. Emerging technologies are too complex to fit under a single theoretical paradigm.

Dunn Cavelty and Wenger, 22—deputy head of research and teaching at the Center for Security Studies, ETH Zurich; professor of international and Swiss security policy at ETH Zurich and director of the Center for Security Studies (Myriam and Andreas, “Introduction: Cyber security between socio-technological uncertainty and political fragmentation,” *Cyber Security Politics: Socio-Technological Transformations and Political Fragmentation*, Chapter 1, 5-6, dml)

Noting that countermeasures need to be drafted carefully since our understanding of the overall challenge is incomplete at best, Schünemann passes the ball to the next chapter in the volume. Based on the notions of cultural violence and cultural peace, the chapter by Jasmin Haunschild, Marc-André Kaufhold, and Christian Reuter shows the potential for political fragmentation through social media, focusing on fake news and terrorist propaganda, and their amplified dissemination through social bots. They show that technology plays an ambiguous role, on the one hand being an amplifier and enabler of effects such as astroturfing and smoke screening, but on the other hand also enhancing social bot detection. However, noting that technology is just one aspect in this issue area, the authors raise the important point that technical interventions cannot address the root causes that make people spread or believe disinformation in the first place. Their findings raise interesting questions about the definition of victims and perpetrators of online structural violence. They ask: “Are people who spread misinformation and propaganda perpetrators of societal fragmentation and structural violence, or victims of a society that has left them with low media literacy and the feeling of being alienated by the society they live in?” (Haunschild et al. 2022: 58). The more digital technologies become interwoven with society and its general functioning, the harder will it be to isolate them from the humans that use them.

The book then moves on to look at new technological developments and their current and future impact on cyber security politics. We look at three technological areas: artificial intelligence/machine learning, quantum computing, and the expansion of cyberspace into space. In his chapter on artificial intelligence and the offense–defense balance in cyber security, Matteo Bonfanti provides an overview over the debate about so-called artificial intelligence in cyber security (Bonfanti 2022). It clarifies the concept of artificial intelligence (AI) and shows in which security-related fields such tools are already used. However, Bonfanti makes clear that future projections are very hard because the actual usage of new technologies depend on too many factors that are highly uncertain. What seems clear, and reinforces the observation made in the previous chapter, is that despite the many uncertainties of how AI will be used in the future, it will benefit both the defense and the offense. Who will benefit more will depend on the capacity of cyber security stakeholders in the private and the public section to master and leverage AI technologies for specific purposes. This usage will be inevitably shaped by the models of governance which will emerge from the formal/informal, fragmented/ coordinated, and often unbalanced interactions among public authorities, private organizations, and the civil society.

Following a similar path of reasoning, Jon R. Lindsay evaluates the implications of quantum computing on cyber security and security more generally (Lindsay 2022). The chapter shows that cryptology is shaped by a paradoxical dynamic of cooperation-enabled competition in line with an expanded play of intelligence and covert influence, with ambiguous implications for strategic stability. Using the advent of quantum computing as a thought experiment, the chapter tackles technologically deterministic projections that are rampant in the field of cyber security. In short, if it were true that technology determines politics, then radical changes in technical infrastructure should have important, potentially equally radical political consequences. Focusing on the contest between code makers and code breakers against the backdrop of political logical, strategic context, and organizational implementation, the chapter shows convincingly how such deterministic perspectives neglect the social factors that shape secrecy and intelligence regardless of the type of technology that is involved. Even though quantum computing is making this contest more complex, its political implications are far from predetermined.

#### There is no overarching cybernetic episteme.

Markland, 22—Teaching Fellow in Politics and International Relations at Aston University (Alistair, “Epistemic Transformation at the Margins: Resistance to Digitalisation and Datafication within Global Human Rights Advocacy,” Global Society, 2022, Vol. 36, No. 1, 113-133, dml)

As established in the first section of this article, proponents of what I have heuristically defined as the “transformation thesis” have emphasised the revolutionary ruptures wrought by digital connectivity and datafication. Some of these proponents illustrate these changes using field specific case studies, as with Duffield’s (2018) suggestion that the transition to a “cybernetic episteme” is reflected in humanitarian practice. Other authors have taken a more abstract view, including Chandler’s (2018) discussion of new modes of governance in the digital era, or the post-humanist drive to reconceptualise “humanity” under conditions of technological entwinement (Cudworth and Hobden 2013). These assertions of macro-level transformation are also supported by network sociology, led principally by Manuel Castells (2010) analysis of how revolutions in information technology, economic globalisation and an emergent “space of flows” interact to produce a new kind of “network society”. This linkage of societal transformation to economic forces is also characteristic of more critical anti-capitalist perspectives, as with the Marxist critique of “cognitive capitalism” (Moulier-Boutang 2012; Zukerfeld 2017). Although these approaches differ in their conceptual frameworks, they are united in their ambition to highlight universal epistemic transformations brought about by technological change.

One of the pitfalls of these totalising perspectives is the neglect of the particular in favour of the universal. For instance, networked thinking encourages assumptions about lateral transformation across socio-political fields that are connected to the digital universe. But not all spheres of social or political activity move at the same pace when they are exposed to technological innovation. Datafication and digitalisation are processes that have uneven impacts on different social and political fields. For example, the testimony of Facebook’s CEO Mark Zuckerberg to the Senate Judiciary and Commerce Committees in April 2018, where US lawmakers appeared confused by the social media giant’s basic business model, is a stark illustration of the gap that still exists between the world of Big Tech and the operating logics of mainstream democratic politics (Stewart 2018). Bigo and Bonelli (2019, 115) have found that even in the field of transnational intelligence, a sphere that could have much to gain from algorithmic techniques, technological expertise tends to be contracted out to third parties while traditional, human-sourced intelligence approaches remain dominant. Therefore, grasping for totalising processes risks ignoring the empirical specificity of divergent social microcosms.

To remedy this blind side in transformationalist thinking, I assert the utility of applying Pierre Bourdieu’s field theory when conceptualising how certain spheres of social or political activity—including the field of global human rights advocacy discussed in the previous section—mediate pressures for epistemic transformation and potentially isolate technological changes and agents to the margins. Employing field theory, Ole Jacob Sending (2015, 11) sees global governance as divided into separate fields, where “actors compete with each other to be recognised as authorities on what is to be governed, how, and why”. Examples of such fields include international development, security, peacebuilding, humanitarianism, and human rights advocacy. However, each field varies in terms of its specific “rules of the game” (Bourdieu and Waquant 1992, 99). Fields are bounded, game-like social structures that are constituted by a unique constellation of actors. These actors struggle for authority according to the field’s principles of legitimation (Bourdieu 1989, 17). These principles of legitimation, which define a field’s cultural capital, are durable to the extent that dominant actors remain invested in their reproduction. Actors’ prolonged immersion in these fields subsequently shapes their own practical sensibilities, so that the field’s logics are internalised as common sense within the habitus (Bourdieu 1990, 53). It is the embedment of the field’s doxa (common sense) within the habitus of invested actors that makes fields durable and resistant to radical transformations. As seen in the previous section, the rules governing the human rights field are associated with its logic of political influence, persuasion, and moral authority.

Critics of Bourdieusian field theory have argued that it is overly structuralist, reproductive, and cannot grasp “the ever-shifting constellations of actors, institutions, data and forms of expression that make up the expertise” (Waever and Leander 2018, 2). However, alternative approaches such as actor-network theory or assemblage-based theories fail to centralise the importance of social and political struggles between agents which are key in defining the trajectory of digitalisation and datafication. As Ruppert, Isin, and Bigo (2017, 3), “[d]ata does not happen through unstructured social practices but through structured and structuring fields in and through which various agents and their interests generate forms of expertise, interpretation, concepts, and methods that collectively function as fields of power and knowledge”. Similarly, “data is not an already given artefact that exists (which then needs to be mined, analysed, brokered) but an object of investment (in the broadest sense) that is produced by the competitive struggles of professionals who claim stakes in its meaning and functioning” (Bigo, Isin, and Ruppert 2019, 11). Technological change can influence the trajectory of different global political fields by enabling the entry of new types of actors (such as data consultants in the case of human rights advocacy), as well as by producing emergent sources of cultural capital and associated epistemic practices (such as expertise in geospatial imaging).

As Bigo and Bonelli (2019, 120) have observed in the case of the transnational intelligence field, technological change can be accompanied by the growing influence of private companies who “have played a substantial role in the recruitment of IT specialists, network engineers, data analysts, integration platform software designers, language and coding specialists, cryptologists, and mathematicians tasked with creating or combining algorithms”. Such entryism can have a revolutionary effect if those new actors are able redefine a field’s organising logic, cultural capital, and principles of legitimation. For example, looking at the case of Sudan in the 1990s as an antecedent to the transformation of humanitarianism, Duffield (2018, 85) traces how donor governments asserted greater control over NGOs, who subsequently “seamlessly morphed into the ‘implementing partners’ of donor governments”. Alongside growing private sector partnerships, these developments stimulated the neoliberal re-alignment of the humanitarian field away from Third World solidarity and the progressive support for autonomous change and towards the governance of precarity. This exposed the field to an epistemic transformation that privileged datafication based on a “surveillance logic of command and control” (ibid., 168).

However, not all global political fields are so structurally conducive to this kind of radical transformation. The example of the human rights advocacy field illustrates how a strong autonomous organising logic—a logic of persuasion—generates entrenched forms of field-specific cultural capital—qualitative and humanistic accounts of raw suffering that establish clear legal responsibilities. Actors can mobilise digital or data infrastructures to diversify the range of tools and media at their disposal, as illustrated by the (limited) use of geospatial technology, data visualisations in human rights reporting, and a growing reliance on social media platforms to engage audiences. However, they do not necessarily threaten the epistemic practices that are at the centre of human rights advocacy. This is because the transformative potential of new technologies and methods depends on their epistemic, political, social, or moral value in the eyes of the fields’ dominant actors. The integration of data-based approaches has been one of slow adaptation, not revolution, and technological specialists—often employed as third-party consultants rather than as full-time human rights professionals—remain at the margins. The Bourdieusian concept of habitus is also helpful in illuminating how fields with strong professional structures and specific educational and career trajectories can endow members with enduring dispositions that favour both the reproduction of existing epistemic practices and resistance to new ones. The habitus of human rights professionals is still primarily defined by legal, journalistic, and liberal-cosmopolitan moral/political dispositions, rather than technological expertise. So long as processes of doxic reproduction remain stable, the potential for epistemic transformation through datafication remains limited.

Conclusion

This article has cautioned against the analytical trend towards treating datafication as a general process acting to radically transform the epistemic and governance practices across global political fields. Because different social and political fields are unique social microcosms that contain divergent organising principles, readers should be wary of post-humanist analyses making totalising claims about alleged transformations in the human condition. The polemical teleology of transformationalism, an approach that is in vogue among Silicon Valley hype merchants like Elon Musk, public intellectuals, and a growing number of social scientists, is certainly attention grabbing, but it does not measure up against the actual way in which technological and methodological innovations are instituted within different fields of practice. International relations and global governance scholars working on the interstitial cross-roads between technology and various political or social lifeworlds need to be attentive to how digital and data transformations are mediated at the meso level of global politics. This article has demonstrated how epistemic transformation can be resisted at the meso level through observing changes and continuities among elite human rights organisations. Bourdieusian field theory, with its emphasis on legitimacy, social reproduction, and the durability of practical dispositions, offers a suitable framework for conceptualising the absence of epistemic rupture within the field of human rights advocacy. However, because digitalisation and datafication processes are mediated through the specific logics of a given field, more work needs to be done on examining how different organising principles shape the potentialities for epistemic transformation. Thus, in the future, more comparative empirical research will be needed to observe technological changes across different areas of global governance.

#### They have it backwards. “Technology does not determine politics; often it is the other way round.”

Lindsay, 22—associate professor at the School of Cybersecurity and Privacy and Sam Nunn School of International Affairs at the Georgia Institute of Technology (Jon, “Quantum computing and classical politics: The ambiguity of advantage in signals intelligence,” *Cyber Security Politics: Socio-Technological Transformations and Political Fragmentation*, Chapter 6, 90-91, dml)

Technology does not determine politics; often it is the other way round. Scholars of cyber security (or quantum computing) must understand the details of information technology, just as scholars of international political economy need to understand the technical nuances of central banking. But they must then go further to interrogate the social context and constitution of these technologies. Technology can at most alter the value of a variable in some theory about some political outcome, such as conflict onset, escalation, duration, or termination. But that variable will almost always be conditioned on other social factors including organizational doctrine, administrative structure, national culture, or elite politics. Through this project, it became apparent to me that the real problem was not that IR lacked an understanding of quantum computing, but that it had little to say about cryptology of any generation. Likewise for cyber security, I have come to believe that the problem is less that IR does not understand information technology and more that IR has only recently started to seriously study intelligence phenomena (Jervis 2011; Rovner 2011; Carson 2018; O’Rourke 2018; Rid 2020). The field is wide open for IR to examine the secret side of politics, which increasingly involves the exploitation of information technology. Social scientists can and should reclaim technology from the technologists.

#### Life isn’t determined by cybernetics.

Susen, 20—Reader in Sociology at the School of Arts and Social Sciences of City, University of London (Simon, “No escape from the technosystem?,” Philosophy & Social Criticism, Vol 46, Issue 6, 2020, dml)

A major irony of Feenberg’s book is the following contradiction: on several occasions, he criticizes, and distances himself from, technological determinism; key parts of his argument suggest, however, that he himself flirts with, if not subscribes to, technological determinism. He rightly maintains, and convincingly demonstrates, that ‘society and technology are inextricably imbricated’.240 This insight justifies the underlying assumption that there is no comprehensive study of society without a critical sociology of technology. Yet, to contend that ‘[s]ocial groups exist through the technologies that bind their members together’241 is misleading. For not all social groups are primarily defined by the technologies that enable their members to relate to, and to bond with, one another. Indeed, not all social relations, or social bonds, are based on, let alone determined by, technology. Of course, Feenberg is right to argue that ‘technologically mediated groups influence technical design through their choices and protests’.242 Ultimately, though, the previous assertion is tautological. This becomes clear if, in the above sentence, we replace the word ‘technological(ly)’ with terms such as ‘cultural(ly)’, ‘linguistical(ly)’, ‘political(ly)’, ‘economic(ally)’, or indeed another sociological qualifier commonly used to characterize the specificity of a social relation. Hence, we may declare that ‘culturally, linguistically, politically, and economically mediated groups influence cultural, linguistic, political, and economic conventions through their choices and protests’. In saying so, we are stating the obvious. If, however, we aim to make a case for cultural, linguistic, political, or economic determinism, then this is problematic to the extent that we end up reducing the constitution of social arrangements to the product of one overriding causal set of forces (whether these be cultural, linguistic, political, economic, technological, or otherwise). While declaring that he is a critic of technological determinism, Feenberg – in central passages of his book – gives the impression that he is one of its fiercest advocates. Feenberg’s techno-Marxist evolutionism is based on the premise that ‘progress is realized essentially through technosystem change’243 – that is, on the assumption that, effectively, human progress is reducible to technological development. Feenberg is right to stress that ‘[t]echnical progress is joined indissolubly to the democratic enlargement of access to its benefits and protection from its harms’.244 ‘Concretization’,245 understood in this way, conceives of progress as a ‘local, context-bound phenomenon uniting technical and normative dimensions’.246 We may add, however, that progress has not only technical (or technological) but also economic, cultural, and political dimensions, which contain objective, normative, and subjective facets. At times, the differentiation between these aspects is blurred, if not lost, in Feenberg’s account, given his tendency to overstate the power of technology at the expense of other crucial social forces. In other words, progress is not only ‘inextricably entangled with the technosystem’,247 but it is also indissolubly entwined with the economic, cultural, and political systems in which it unfolds and for (or against) which it exerts its objective, normative, and subjective power. The preceding reflection takes us back to the problem of techno-reductionism: The struggle over the technosystem began with the labor movement. Workers’ demands for health and safety on the job were public interventions into production technology.248 All struggles over social (sub)systems have not only a technological but also various other (notably economic, cultural, and political) dimensions. Demands made by particular subjects (defined by class, ethnicity, gender, age, or ability – or a combination of these sociological variables) are commonly expressed in public interventions not only into production technology, but also into economic, cultural, and political systems. In all social struggles (including class struggle), technology can be an important means to an end, but it is rarely an end in itself. Put differently, social struggles are partly – but seldom essentially, let alone exclusively – about technology.

#### Oversimplification is offense. Totalizing theories of restrictive cybernetic power can’t account for its positive deployments—the more exceptions to their theory, the less the alt solves.

Williams, 15—Lecturer in Digital Media & Society, School of Politics, Philosophy, Language and Communication Studies, University of East Anglia; at time of authorship, Ph.D. candidate, University of East London (Alex, “Control Societies & Platform Logic,” New Formations, 84/85, pp. 209-227, dml)

Having established how a restrictive cybernetic vision of control might operate, we are now in a position to mount a critique to point towards what such a picture of contemporary power ignores. In cleaving to an understanding of power as basically restrictive, cybernetic control is largely focused on the ways in which decentralised systems contain and limit behaviour. From this perspective, at least, the control society operates as a system of complexly articulated homeostats, modulating and constraining behaviours towards accepted goals. The relatively primitive forms of feedback offered by disciplinary panopticons have become vastly more sophisticated, dynamic, mobile, omnipresent, and operative on a personal or even sub-personal level. Yet these remain primarily negative in nature (even if targeting goals which are themselves dynamic, as when the goal is a set rate of change). What this leaves out is the dimension of decentralised power which is not merely restrictive, (or goal-oriented) but which is also constructive. On the one hand, this constructive aspect refers to the ways in which control systems positively construct as well as negatively constrict action – they make things possible that would otherwise be impossible. On the other hand, it is also to point towards the fact that cybernetic visions of control have a tendency to ignore the ground of such decentralised power, the very means by which it might be constituted, and hence also modified. For example, we might ask why it is that certain kinds of control systems predominate over others.

To put this another way: there may well be a more interesting relationship between constraint and enablement, and hence between necessity and contingency, than control is often taken to indicate. As we argue below, the immense power of control rests not just in its ability to modulate behaviour via homeostatic dynamics, to target goals which are known in advance, but also in its ability to relatively constrain an open-ended range of contingent behaviours, which cannot be identified in advance. These contingent behaviours, enabled and constrained by the control systems within which they operate, work also to reinforce the power of the control systems themselves, in a conspiracy between closedness and openness, constriction and construction. It is this relationship, and its increasing operationalisation by business and governmental organisations, that constitutes the real power of control, a power we will describe under the name of the platform.

More than an issue of mere theoretical dispute, there are important practical implications for how we are to consider possible resistance to the operations of cotemporary power. For if we misunderstand the nature of control’s power, then we will also be likely to misapprehend the correct measures necessary to oppose, transform or supplant it. This also goes some way to explaining why it is that the strategic responses often offered in response to the control society have been relatively paltry (and largely focused on hacking, spreading viruses, or otherwise disrupting or evading existing control systems).43

### Framework—2AC

#### Framework: The negative must prove that the consequences of the plan are uniquely worse than the status quo or a solvent alternative.

#### The impact is competitive clash. Any lower burden for the negative creates a strategic incentive to avoid leaning into the controversy through nuanced, well-researched neg strats in favor of “you-link-you-lose” frameworks or unpredictable utopian alts that affs can’t effectively prep for. Competitive clash is the intrinsic good of debate—it’s the distinguishing feature of the activity and an essential part of whatever broader purposes that it might serve.

#### Debates about NATO cooperation on emerging tech are good. Security cooperation isn’t always logistically-minded; NATO can make valuable political and ethical contributions when effectively coordinated.

Gilli, 21—Senior Researcher at the NATO Defense College (Andrea, “NATO, Big Data, and Automation: Decisions And Consensus,” *NATO Decision-Making in the Age of Big Data and Artificial Intelligence*, Chapter 10, 96-97, dml)

In this respect, one of the most important questions Allies should ask themselves is what they want AI to do. This is not just a military or defense question: this is a political and probably ethical issue since there is a wide spectrum of views, sensitivities and perceptions involved. Important debates about arms control or data governance are ultimately connected to these broader issues. Some Allies may want to use AI just to optimize logistics and increase efficiency in the management of various NATO activities. Others may see it widely used at a tactical level, particularly with intelligence, surveillance and reconnaissance functions. Others may be looking at integrating AI into their force structure with a more ambitious visions, somehow recalling the revolution in military affairs approach.

Against this backdrop, a debate about AI-related ethics in the defense domain is paramount, not only to reach a consensus among Allies but also to strengthen the political bonds of the Alliance. From this starting point, NATO can play an important role in other domains. In some cases, like standardizations, NATO has historically been an important player, and should make further steps also to prevent interoperability problems due to a fragmented adoption of AI. In other instances, some creativity may be needed: for instance, should NATO provide cloud computing services, namely enablers, the same way it provides airspace management – through Airborne Warning and Control System (AWACS) aircrafts – or ground surveillance – through the Alliance Ground Surveillance (AGS) program? Could NATO envision an integration of nationally-owned AI assets as it does with the integrated air and missile defense? These are important questions which, however, highlight the fact that defense is a sovereign issue and most decisions are taken by national governments, not by NATO as such.

### Link Answers—AI—2AC/1AR

#### AI isn’t intrinsically violent and refusing it fails.

Huq, 22—Frank and Bernice J. Greenberg Professor of Law at the University of Chicago Law School (Aziz, “Can We Democratize AI?,” <https://www.dissentmagazine.org/online_articles/can-we-democratize-ai>, dml)

For readers unfamiliar with the critical literature on AI, Crawford’s book provides a powerful, elegantly written synopsis. Her criticisms bite hard against the self-serving discourse of Silicon Valley. Yet I wonder whether her unqualified insistence that AI serves “systems that further inequality and violence” obscures at the same time as it illuminates. If data-based prediction, as I learned as a teenager, has been around a long time, how and when did it become such an irremediable problem?

More than a decade ago, the historian David Edgerton’s The Shock of the Old repudiated the notion that the future would be dematerialized, weightless, and electronic. Edgerton insisted on the endurance of old tools—diesel-powered ships carrying large metal containers, for example—as central components of neoliberal economic growth. It is a mistake, he suggested, to view our present deployments of technology as a function of innovation alone, free from the influence of inherited technological forms and social habits.

Crawford underscores pressing contemporary concerns about resource extraction, labor exploitation, and state violence. But has AI made these problems worse—or are current crises, as Edgerton’s analysis hints, just the enduring shock waves created by old technologies and practices? It’s not at all clear. Crawford, for instance, justly criticizes the energy consumption of new data centers, but she gives no accounting of the preceding history of data harvesting and storage unconnected to AI. As a result, it is unclear whether novel forms of AI have changed global rates of energy consumption and, if so, by what extent. Nor is it clear whether commercial AI is more or less amenable to reform than its predecessors. One of the leading scholarly articles on AI’s carbon footprint proposes a number of potential reforms, including the possibility of switching to already-available tools that are more energy efficient. And recent empirical work, published after Atlas of AI, shows that the energy consumption of major network providers such as Telefonica and Cogent decreased in absolute terms between 2016 and 2020, even as data demands sharply rose.

Similarly, Crawford’s analysis of the labor market for AI-related piecework does not engage with the question of whether new technologies change workers’ reservation wage—the lowest pay rate at which a person will take a particular kind of job—and hence their proclivity to take degrading and harmful work. It isn’t clear whether AI firms are lowering what is already a very lean reservation wage or merely using labor that would otherwise be exploited in a similar way. Crawford underscores the “exhausting” nature of AI-related labor—the fourteen-hour shifts that leave workers “totally numb.” But long, boring shifts have characterized capitalist production since the eighteenth century; we cannot know whether AI is making workers worse off simply by flagging the persistence of these conditions.

In Crawford’s narrative, AI is fated to recapitulate the worst excesses of capitalism while escaping even the most strenuous efforts at democratic regulation. Her critique of Silicon Valley determinism ends up resembling its photographic negative. Crawford here devotes few words to the most crucial question: can we democratize AI? Instead, she calls for a “renewed politics of refusal” by “national and international movements that refuse technology-first approaches and focus on addressing underlying inequities and injustices.”

It’s hard to disagree with the idea of fighting “underlying inequities and injustice.” But it’s not clear what her slogan means for the future use of AI. Consider the use of AI in breast-cancer detection. AI diagnostic tools have been available at least since 2006; the best presently achieve more than 75 percent accuracy. No difference has been observed in accuracy rates between races. In contrast, the (non-AI) pulse oximeter that found sudden fame as a COVID-19 diagnostic tool does yield sharp racial disparities. AI diagnostics for cancer certainly have costs, even assuming adequate sensitivity and specificity: privacy and trust may be lost, and physicians may de-skill. Returning to non-AI tools, though, will not necessarily eliminate “inequities and injustice.”

But do these problems warrant a “politics of refusal”? It would, of course, be a problem if accurate diagnostic AI were available only for wealthy (or white) patients; but is it a safe assumption that every new technology will reproduce extant distributions of wealth or social status? AI tools are often adopted under conditions that reinforce old forms of exploitation and domination or generate new ones. This is true of many technologies, however, from the cotton gin to the Haber-Bosch process. But cheaper cancer detection is just one of many possible examples of AI technologies that could expand the availability of services previously restricted to elites. An understanding of new AI technologies’ social potential demands not just Edgerton’s skepticism about novelty, that is, but an openness to ambiguity and contradiction in how tools can or should be used—a politics of progressive repossession, and not just refusal.

Crawford’s critiques of the damaging uses and effects of AI raise important questions about technological change under contemporary social conditions. Yet, by sidelining issues of historical continuity and the potential beneficial uses of new tools, she leaves us with an incomplete picture of AI, and no clear path forward. Atlas of AI begins a conversation then—but leaves plenty more to be said.

#### No single paradigm can explain the political essence of human-AI interactions.

Metcalfe, et al, 16—research kinesiologist with the U.S. DEVCOM Army Research Laboratory (Jason, with Brandon Perelman, David Boothe, and Kaleb McDowell, “Systemic Oversimplification Limits the Potential for Human-AI Partnership,” IEEE Access, Volume 4, 2016, dml)

As AI and AI-related technologies are integrated into our lives, the methods for introducing them, as well as for effectively integrating them with our society, have been the source of involved, long-term debate. Such debates can be found at least as early as the 1930’s [7], with specific discussions about designing effective "man-machine systems" [8] published the same year that also welcomed the first robot into existence [9]. Since then, varied frameworks have been promoted for systematically defining roles and responsibilities in human-machine interactions [10]–[19], indicating that there is still no established and broadly accepted correct method for achieving integration in all situations. Part of the reason for this apparent lack of consensus, we argue, is that the core research community is exceptionally diverse. Whether hardware specialists, algorithm developers, human factors engineers, creative designers, business professionals, technology transition managers, marketing specialists, or end-users, most parts of society are playing a role in this exciting global transformation. While the combined expertise of multidisciplinary teams is needed, the diverse and specialized perspectives that individuals bring to the table can make it difficult to form a shared vision [20]. In these highly multidisciplinary ventures, limitations on language and differences in training and priorities can systematically perpetuate oversimplifications that are then commonly shared among stakeholders across technical literacy barriers [21].

In the present paper we offer our perspective on this circumstance by first establishing a backdrop of three oversimplified assumptions about the human-AI relationship, and we go on to offer a theoretical construct that we have developed to facilitate collaborative discourse about strategies to integrate this class of technologies into new intelligent sociotechnical ecosystems with humans. The ultimate aim is to expand the global discussion around how we, as a society, may form effective human-AI partnerships. We have selected a few oversimplifications that, like others, seem to arise from viewing human-AI interactions as monolithic, using a single construct for understanding division of labor. Rather, we argue that the fundamental nature of future human-AI partnerships is task relative, depending on the certainty of information forming the basis of the problem, the amount of time available to resolve the situation, and, most critically (and most often ignored), task complexity.

As AIs become more advanced, our patterns of interaction with them may be expected to progress as well. Moving our vision away from the more clearly differentiated, and simpler, roles that exist between craftsman and tool, we anticipate that far more complex and interdependent dynamics will emerge as humans and AIs are brought into intelligent ecosystems enabled by varied team-like partnerships and interaction dynamics [22], [23]. Viewing interactions between AI and humans in the context of certainty, time, and complexity should clearly emphasize the reality that there is not one sort of interaction that must be considered and supported. Rather, as with large social systems, there are myriad ways that humans and AIs may cooperate or compete. Therefore, no single paradigm will appropriately address the question of how best to integrate the two. The growing community of interest around human-AI teaming must, we argue, come to agreement on how to address the problem space, as well as how we convey important understandings about it; here, it is our aim to offer the theoretical construct that we call the landscape of human-AI partnership to support these goals.

#### NATO engagement with AI governance is ethically valuable and a moral obligation.

Gilli and Stanley-Lockman, 20—Senior Researcher at the NATO Defense College; Associate Research Fellow in the Military Transformations Programme at the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies (Andrea and Zoe, “Ethical purpose: ethics and values,” *“NATO-Mation”: Strategies for Leading in the Age of Artificial Intelligence*, Chapter 3, 29-31, dml)

NATO has an interest, and a moral obligation, to promote the adoption of its values in the realm of AI. Democratic values inform the Alliance’s goals, thus giving meaning to its material capabilities – including its military power. At the same time, the integration of AI into the fields of security and defence poses unique moral, ethical, legal, and safety-related questions.85 It is thus imperative that the Alliance actively considers and operationalizes AI ethics, regardless of the degree and scope of AI integration within NATO and its Allies. The common principles and values pronounced in the Atlantic Treaty represent the foundations on which NATO was built. Such principles and values – democracy, freedom, rule of law, individual rights, free markets – are the bond underlying the transatlantic community, which in fact predates the Atlantic Alliance.86

Norms and values can strongly shape the international system.87 Given the intense international competition in the technological, military, economic, and normative domains, embedding democratic values into AI is as much a strategic imperative for the Alliance as it is a functional one.88 In addition to signalling to domestic populations that NATO and its Allies follow through on their commitments to uphold values as the basis of the political and military Alliance, incorporating AI ethics into the “NATO-mation” agenda also serves as a bulwark against the incursion of unwelcome illiberal values in the course of future technological development.89

It is worth noting that NATO’s role in the AI ethics sphere differs from that of many other organizations, such as national governments and the European Union, because NATO is not a regulatory body. NATO complies with existing laws and regulations, including the Laws of War, which nations and the international community created. This means that regulatory and normative questions such as the development and deployment of autonomous weapons systems will not be determined at NATO level. Nevertheless, there is still room for NATO to play a clear role. Indeed, given doubts and worries about the adoption of AI for military purposes, NATO can help generate more public support and engagement by clearly defining ethical boundaries and moral guidelines.

The uses of AI in military operations – ranging from logistics to maintenance, from recruitment to retainment, from intelligence, surveillance and reconnaissance to medical tests and medical evacuation, and more90 – go beyond the discussions on lethal autonomous weapons systems that have dominated European debate about AI in military affairs. Accordingly, the range of ethical questions relevant to NATO extend beyond focusing on the tip of the spear. Seemingly mundane uses of AI, such as in human resources or decision support, can still pose distinct ethical questions the Alliance should be prepared to handle. Addressing security risks,91 minimizing bias in systems,92 developing trust,93 and respecting privacy are fundamental tasks for the Alliance to ensure the future effectiveness of AI, whether in battle or in other functions.

### Link Answers—Biotech—2AC/1AR

#### Biotech is inevitable—the cat’s out of the bag. Engaging the state through advocating proactive regulation is the only way to prevent their impacts.

Hasner, 17—Leiden University Medical Centre (Mira, “GENETIC ENGINEERING REQUIRES A HEEDFUL EYE,” <http://health21initiative.org/article/genetic-engineering-requires-heedful-eye/>, dml)

Genetic knowledge enables manipulation and enhancement of human nature. Transgenic organisms and human gene sequences have been patented for clinical use, thus causing an enormous growth in biotechnology. Recent innovations have made it possible to remove and to replace unwanted genes, enhancing human genetic traits. But where will humanity draw the line once this is implemented in the healthcare system and becomes societal norm? If a child is immune to HIV, why not supply him/her with excellent eyesight and increased intelligence too? Genetic engineering prefers moulding nature over beholding nature, which is threatening to banish appreciation of life and its flaws.[2] Will the ethical barrier between curing and enhancing people be enough to prevent people from creating post-human species?

One of the newest developments in biotechnology is CRISPR-cas9. CRISPR stands for clustered regularly interspaced short palindromic repeats. It consists of short segments of repetitive prokaryotic DNA-codes, which can be seen as a huge DNA-library with built-in nucleotide fragments of an aggressive virus, called spacer DNA. Bacteriophages are viruses that attack bacteria by inserting its own DNA into cytoplasm, thus resulting in a take-over of protein- and DNA-synthesis. Cas9 are the RNA-guided DNA endonucleases that function as scissors in recognizing and cutting out viral DNA. Bacteria that survive this attack store the viral DNA in the CRISPR-library. Cas9 then scans the bacterial DNA for matches with the spacer DNA and destroys the recognized invading viruses. This mechanism is being applied to humans by making cas9 search for mutations and cut these out, after which a DNA-strand with functional sequences is implemented and taken up by the cell. This new technology holds the promise of a future in which genetic diseases can be cured and mutations of the human genome restored.

People have recently started exploring the possibilities of CRISPR-Cas9. In January 2013 Feng Zhang[3] published the first method of using CRISPR-cas9 to edit the genome of humans and mice. Molecular scissors engineered for site-specific modification of the genome give researchers the means to effectively analyse the genes, genomes and epigenomes. This could improve understanding of disease states and ease the process of developing new therapeutical applications. CRISPR-cas9 has been used to generate disease models to study genetic diseases, such as HIV, Duchenne muscular dystrophy, Haemophilia, Sickle-cell anaemia and β-thalassemia. Its possibilities promote future perspectives like cancer research with in vivo mutagenesis studies on animals, synthetic biology, a sgRNA library for drug targeting and induced pluripotent stem cell-therapy. Recent advances in genome editing with CRISPR have opened doors to application of gene therapy in the real clinic.[4] At this point CRISPR was seen as the big bang of genome editing technology by being a cost-effective, easy to administer alternative for previous platforms of genetic modification.

In 2015 researchers in China reported editing genes of human embryos in an attempt to make them resistant to HIV-infection.[5] This was only the second officially published claim of gene editing in human embryos. In 2017 they were followed by Americans, who corrected a pathogenic gene mutation in germline DNA responsible for hypertrophic cardiomyopathy in human embryos and avoidance of mosaicism in the edited embryos.[6] The changes caused by CRISPR are not inheritable unless the technique is used on reproductive cells or very early embryos. Be aware that this whispers of designer babies, which could lead to gradual but irreversible changes in the human gene pool. The consequences of changing heritable features in embryos for future generations could not possibly be overseen.

When science moves faster than moral understanding, it may overlook the consequences for people excluded during the transition, such as the elderly or those in lower social classes. Current generations were hardly aware of the technological digital revolution that was upon them, which has now changed the present and will impact the future permanently. Bostrom describes the phenomenon of anthropic shadow, an observation selection effect that prevents observers from perceiving certain kinds of catastrophes in their recent geological and evolutionary past. Catastrophe types that lie in the anthropic shadow are likely to be underestimated; therefore, light should be shed on them.

Though biotechnology is still in its early stages, most people worry less about the technological challenges these new developments are facing than the ethical concerns they raise. In the Netherlands, the Rathenau Institute conducted a public survey[7] on views of the general public on human enhancement in comparison to current treatments, such as cosmetic surgery or prescription of Ritalin. They assessed four main issues that unnerve the public. Firstly, people seem worried about safety, especially involving health risk and addiction. Social issues, such as peer pressure and fair access to enhancement resources, are another topic of concern. Peer pressure might be exerted upon people by emphasizing that it is unethical not to genetically modify embryos because it would disadvantage them, thus resulting in societal inequality. The public feels philosophical and ethical themes, such as luck and wellbeing, authenticity and identity, are at stake too. Finally, they are anxious about the shifting border between curing and augmenting human traits.

However, 90 per cent of the people in the United Kingdom, who learn their child will be born with Down’s syndrome, have an abortion nowadays.[8] In addition, IVF also grants the possibility to screen embryos prior to implantation. Through pre-selection or a change of health norms, genetically modified humans could become the new standard. As genetic diseases are eradicated, more and more people are likely to become pro human enhancement.

Transhumanists find humans not to be the pinnacle of evolution because they are limited in mental and physical abilities. These are aspects that can and should be improved according to Bostrom. They hope to become post-humans through human enhancement, providing them with longer and healthier lives. Transhumanists aspire to have better memory and intellectual abilities, more refined emotional experiences and, generally, to achieve a greater degree of control over their lives resulting in higher values, which unenhanced humans do not comprehend. They ask people to look at post-humanism in retrospect, through the eyes of post-humans instead of their own. Transhumanists recognize the dangers and negative consequences these developments may hold but do not see them as a decisive reason not to proceed. Nevertheless, they warn people to be aware of these “dystopian scenarios” and to take precautions.[9]

Posthumanists have thought of ways to counteract the inequality-increasing tendencies of enhancement technology, such as subsidizing it or providing it for free to lower social classes. However, there is no guarantee for implementation of such countermeasures in countries with a health care system based on market forces. Secondly, posthumanists claim to be able to reverse any adverse events the modifications might induce using the same technology. They conclude that every day the science is delayed is a crime against humanity because science is able to prevent people from suffering.

Kurzweil, a supporter of germline editing, has stated in a press conference that humanity is the only species that goes beyond its limitations. He says, “We did not stay in the caves; we did not stay on the planet; and we are not going to stay within the limitations of our biology.” In his singularity-based documentary, Kurzweil is quoted saying, “I think people are fooling themselves when they say they have accepted death.” His book, “The Singularity is Near,” adds to this, suggesting medical advances will allow science to make life expectancy limitless and to continuously repair and replace defective parts of the human body. He assumes the following step to somatic gene therapy is using this technology to replace human DNA with synthesized genes. Biologist P. Z. Myers has criticized Kurzweil’s predictions as being closer to the deluded religious movement of “New Age spiritualism” than to actual science and accuses him of not understanding basic biology.[10]

Fukuyama, a political scientist and sociologist, warns about the potential unknown costs of eradicating genetic illness. He fears the loss of other inherent human characteristics like intelligence or ambition. He further argues that humanity could lose the human essence that unites and distinguishes it from other animals, which he refers to as Factor X. Fukuyama calls for protection of this factor, which relies on a careful balance of moral choice, reason, sentience, emotion, dignity and consciousness. It grants people their right to be considered human and to be guaranteed certain human rights, such as life and security. Humans must not all be the same to have rights, but they should for equal rights. Using biotechnology to minimize suffering could go at the expense of people’s highest human qualities, such are compassion, resilience and overcoming weaknesses.[11]

“We have evolved to a state that resembles cancer: a proliferation of the same cell type without taking in account organic laws of the whole. The same is being copied ceaselessly.” To the philosopher Baudrillard, alongside cloning, AIDS and viruses, cancer is a metaphor for everything that is happening within society. The result is an accumulation of roaming cells. Cells are depicted here as entities containing certain genetic information, which constantly gets passed on. In his future, the old problem of “love your close ones like yourself” is solved because the closest ones have become identical.[12] An important argument against germline editing is loss of the egalitarian genetic lottery, which results in large genetic variations between individuals narrowing down and clustering within certain social groups.

Successful people genetically embed their social advantages and increase disparity between the top and bottom of the social hierarchy. Those who are genetically modified may lose sympathy for those who are not by thanking their own enhancements to conscious choices rather than a result of the genetic lottery.11 Nietszche stated that if there is a continuum of gradations between human and nonhuman, there is within the type of human as well. According to him, the ordinary man is unable to relinquish his advantage. The thought of a purpose and self-benefit outperforms ordinary instincts. [13]

People are right to worry about the unpredictable societal and biological consequences of editing the human genome. However, banning technological research in this field would only mean loss of oversight on scientific development. Only by participating can humanity make sure further research is guided by caution, reason and transparency. Participation also includes support of the general public, for which a guarantee of safety is required.

Jean-Jacques Rousseau wrote, “The first man, who having fenced in a piece of land, said ‘This is mine’ and found people naïve enough to believe him, was the true founder of civil society.” But how are property rights applied to tissues and cells or the genetic DNA of cells themselves? Control over one’s body remains intact as long as the cells are attached to you. When cells are no longer inside your body, everyone could have property rights over them or intellectual property rights in innovations related to information contained therein. Past examples of patients whose cell lines were used for technological research without their knowledge or consent are Henrietta Lacks (HeLa)[14] and John Moore[15]. Scientists have grown more than two million HeLa-cells used in more than 11,000 patents. It is estimated that they cover millions of dollars worth of biological research. However, the patients will not profit from this. John Moore lost a property rights battle regarding an anti-cancer drug derived from his splenic cells, after which he started a campaign for patients’ rights.

Currently, the life sciences are experiencing a crisis in public perception of their work involving distrust and misunderstanding. There is a growing inaccessibility of science and technology, and ethical issues are being resolved within the sciences with a pragmatic and policy-oriented outcome. However, BioArt enables the public and humanities to participate in the debate of what values underpin scientific decisions by culturally embedding science. It uses the same materials, tools and technologies as life scientists. It encompasses results of life sciences and the expectations and fears of it. It serves as a social intervention, contributing to public discussion as a mediator and aspires to stimulate a new and more productive relationship between humanities and science where artists’ practice can be an integral part of scientific reflection.[16]

One example of BioArt challenging the public to consider its responsibility for transgenic beings is a project by Eduardo Kac in collaboration with French geneticist Louis-Marie Houdebine. She used the green fluorescent protein found in jellyfish, which fluoresces green in exposure of blue light, to create Alba, a glow in the dark fluorescent bunny. Kac describes Alba to The Boston Globe as an animal, which does not exist in nature, having a “particularly mellow and sweet deposition”.[17] This article generated a global media scandal. Another project highlighting societal loose ends asks people whether they know where all their DNA is. Heather Dewey-Hagborg printed 3D-portraits from strangers whose DNA she found on stray hairs and chewing gum.[18]

It is fair to remain sceptical about the role of the artist in the scientific field. By using the techniques, workspaces and methods of scientists, artists have similar boundaries and can, therefore, be influenced by the field they should be reflecting on. Ziakerek describes this phenomenon as the complicity trap.[19] If art is complicit with technological developments instead of contesting them, it may help their popular acceptance. This art is often more repetition than rupture, which makes people question the value of the artists’ contribution. Humanity should carefully preserve artistic integrity and independence from the sciences by providing a separate workspace for them.

Initiatives have been launched to inform people about recent advances in human gene-editing research. One example is the Working Party raised by the Nuffield Foundation council on Bioethics, aimed at discussing ethics surrounding genome editing and human reproduction. Involved are ethical lawyers, bioethicists, medical professionals, partners and sociologists.[20]

The speed at which these technologies are developing has unnerved many policymakers and stakeholders about whether appropriate systems are in place to govern these technologies. The National Academies of Sciences, Engineering and Medicine has taken leadership in the past on controversial new areas of genetic research, such as cloning and gain-of-function research. They ask how and when the public should be engaged in the decision making. An expert committee considers important questions, including balancing potential benefits with unintended risks, governing use of genome editing, incorporating societal values into clinical applications and policy decisions, and respecting inevitable differences across nations and cultures, which will shape how and whether to use these new technologies. They propose criteria for heritable germline editing and provide conclusions on the crucial need for public education and engagement. In addition, they present seven general principles for governance of human genome editing.[21]

The prospect of human freedom unchained is appealing to all. Yet its promise is flawed. The consequences cannot be overseen, and some argue humanity is at stake. Public surveys have shown people worry about the impact this new biotechnology might have on their life. They fear for their wellbeing, authenticity and identity. However, banning technological research is not an option. Luckily, participation grants insight in further technological research. Public engagement and education is of great importance, so the general public can contribute to the debate surrounding human enhancement. BioArt can serve as a catalyst for involvement. More awareness should be raised on the topic of human enhancement, so political regulation and legal barriers can be implemented. Constraining these new technologies out of respect for nature and with a heedful eye at humanity’s future is a necessity.

### Link Answers—Cyber—2AC/1AR

#### Cybernetics don’t invalidate the role of material politics or states in cybersecurity governance. Their links oversimplify.

Valeriano and Maness, 18—Donald Bren Chair of Armed Conflict, Marine Corps University; Assistant Professor, Defense Analysis Department, Naval Postgraduate School (Brandon and Ryan, “International Relations Theory and Cyber Security: Threats, Conflicts, and Ethics in an Emergent Domain,” *The Oxford Handbook of International Political Theory*, Chapter 19, dml) [inserted “than” for grammatical integrity and to correct a suspected typo, correction denoted by brackets]

The central contention of many scholars in the cyber security field is that the gates are down. In an era of digital connectivity, the state is incapable of maintaining its monopoly on security. This is true: anything networked can be hacked and is vulnerable to infiltration. Yet this is no different [than] any other form of interaction in international politics. Any leader can be killed, any organization seeking to ensure security for the vulnerable can be brought down through internal weakness, dissension, or inaction. Instead of marvelling at the novelty of the cyber domain, the focus of scholarship needs to be on what we know about the domain, how force can be leveraged in the arena, and how to foster the ethical and considered use of power.

Comparative case studies are rare, given the tendency to focus on events that might be outliers, such as the Stuxnet worm (2010), the Sony Hack (2014), and Russia’s denial of service bombardment of Estonia (2007). While the atypical events in cyberspace might enlighten our understanding, explaining the everyday and typical in cyber interactions is often overlooked.

The other dominant frame is that of a revolution in military affairs in which technological advances have a dramatic impact on the character and contrast of combat operations. In the cyber context, this is the undertone of Kello’s (2013) work that suggests that the future of cyber war will forever change the way states interact with each other. Lindsay (2013) and Gartzke (2013) counter this by noting that there are many constraints on international actors to fully employ their advanced cyber weaponry. Technological revolutions are never what they seem, and require appropriate integration with existing technologies to make an impact.

The controversy extends the idea that technology will add to the power and capacity of small states. There are small states such as Estonia and North Korea where this may be the case, but as a collective this claim may be dubious. Estonia wields disproportionate cyber power because of its experience with being attacked in 2007, and is thus now a major centre for cyber defence for the NATO alliance. Lindsay (2013) and Valeriano and Maness (2015: 27) maintain that it is the great powers that will gain the greatest benefit from cyber technologies. Cyber weapons are not simple and cheap weapons to leverage (p. 261) (Valeriano and Maness 2015: 35); they are complicated, expensive, and difficult to utilize for offensive and defense intent.

Many suggested that precision weaponry advanced a revolution and provided an offset and advantage during the Gulf War (1991); but studies since have called into the question the efficacy of precision weaponry, primarily in the context of aerial bombing (Pape 2004; Williams 2010). This suggests that rhetorical arguments on the question must give way to fact-based examinations. There is a great need in the cyber security field to recognize that broad claims without evidence are inadequate, and that the development of theory must be based on more than vague prescriptions for the future.

Definitional Issues

Unfortunately, much time and effort has been spent in the cyber security field exploring the definitions and terms used in the field. “Cyber security” refers to the threat opportunities from digital and computational technologies. Like all frames of security, the idea of perfect protection is a myth; but this is especially relevant for computational-based systems, which will always have weaknesses. The only way to avoid network-based threats is to avoid the drive to network all electronic devices. The more complex question of protection for whom is also often avoided. Most discussions implicitly suggest that the one to be protected is the state, with a focus on critical infrastructure and national industry, but what of the individual or corporation?

Nye’s (2011) definition of cyberspace is useful for political analysis:

the cyber domain includes the Internet of all networked computers but also intranets, cellular technologies, fiber-optic cables, and space-based communications. Cyberspace has a physical infrastructure layer that follows the economic laws of rival resources and political laws of sovereign justification and control.

(Nye 2011: 19)

This layering of cyberspace is critical in the political discourse because it is impossible to leave the state out of the analysis. States still control a monopoly on technology and access through such programmes as the Wassenaar Agreement (limiting access to dual use technologies). Institutions also play a role, with the International Corporation for Assignment Names and Numbers (ICANN) governing domains on the internet and the United Nations convening several Group of Government Expert’s (GGE) reports on cyber security.

#### Understanding cybersecurity through a datafied epistemic lens is good. Rejecting data empowers cybernetic abuses.

Valeriano and Maness, 18—Donald Bren Chair of Armed Conflict, Marine Corps University; Assistant Professor, Defense Analysis Department, Naval Postgraduate School (Brandon and Ryan, “How We Stopped Worrying about Cyber Doom and Started Collecting Data,” Politics and Governance (ISSN: 2183–2463) 2018, Volume 6, Issue 2, Pages 49–60, dml)

There have been many challenges to the utility of data in international relations. Hedley Bull (1966) long ago argued that data-based analysis was tortuous and inelegant. He also maintained that nothing in data-based examination goes beyond what can be deduced using conventional wisdom. J. David Singer (1969) challenged this presentation as being naïve about the utility and purpose of data. There is a limitation on our ability to understand the world without taking a total snapshot of interactions to make predictions, understand patterns, and examine how outliers may alter our perceptions of interactions. Data can illuminate counterintuitive patterns not readily apparent to the qualitative observer.

Insights from postmodern and critical scholars are imperative to our task. If reality is basically what we make of it (Berger & Luckmann, 1991), what happens when the perspective we construct to deal with nascent threats is divorced from reality? While data and evidence will never be value free, an insight offered by critical theory, it also offers a more nuanced approach to the issue than selecting the obvious cases for examination and extrapolating from outliers. We must start somewhere; the postmodern project is a reaction to the behavioral turn in the social sciences. The cyber security field has to yet to even start its behavioral moment but seems to have started with the suggestion that collecting data is impossible (Kello, 2013).

As Vasquez (1998, p. 218) points out, language and conceptual frameworks are prone to self-fulfilling prophecies. If we allow the language we use to construct how we view security challenges, we likely will miss key developments in the field. Social science is not value-free, but this does not mean that it must be data-free in order to reflect the true state of nature. Language without the consideration of data and evidence will often be empty and akin to Norse’s threat map, which is an imperfect and often a misrepresented vision of reality.

Using social science methods can improve the practice of cyber security. “Science is not simply a useful tool, but a practice that creates a mode of life that consciously destroys other ways of thinking and living” (Vasquez, 1998, p. 219). Without encouraging the perspective that data adds to the cyber security debate, we might accept observations as truth when in fact they merely reflect a skewed sample that is not reflective of actual patterns and practice. To encourage better behavior in cyberspace, to stop gross abuses, and to predict future events, we must move beyond biased and constrained samples offered by observational logic that cannot move beyond description and theoretical logic.

For Vasquez (1998), “good” empirical theories should be accurate, falsifiable, have explanatory power, be progressive, be consistent with what is known in other areas, yet also be parsimonious. Theories must pass reasonable tests of fact first. The process of progress inherent in a social science enterprise starts with the collection and analysis of data. Once data is collected, positions and theories can be challenged and falsified in light of evidence. We then can move towards explaining the past, present and future based on the data processes that we observe now.

The key addition of Lakatos (1970) is that for a theory to be progressive, it must obtain more empirical content than the prior theory and generate new and interesting questions. Without a foundation of theory, data and logic, we have no bias on which to proceed with knowledge based inquiries. Cyber security theory is empty without a firm foundation of fact that then pushes us to explore new directions.

Of course, data is always biased by the unit collecting the data and interpreting the evidence. However, this is also a strength of data, others can come along and use it for their own ends and expand upon the original intent of the data to build different perspectives. The basic point is that we need to stop engaging important policy questions through prognostication that would be more suitable on a 2am television advertisement. Political scientists and policymakers should not be fortune tellers who make guesses about the future without reference to what we already know. We have evidence from the recent past and emerging contemporary situation, so we must use it to engage critical policy questions.

4. What We Can and Cannot Know from Data

It is thought that most cyber strategies and events are secret, but this is not entirely true. Much of what happens in cyberspace is the definition of overt―by interacting with external networks, threat actors make their presence known. Attackers may try to mask their origins, but language traits, common techniques and malware, and motive as well as historical context can give us a great deal of information about who is attacking whom. For example, near the beginning of the 2018 Winter Olympic Games in Pyeong Chang, South Korea, the International Olympic Committee (IOC) was hacked and subsequently stolen emails from the organization were released to the public (Matsakis, 2018). Forensic analysis attributes this operation to the Russian Federation, which was the primary culprit from the beginning, as the country had been banned from competition for the games for a massive doping scandal that Moscow vehemently denies guilt to this day. Feeling cheated, the APT 28 Russian hacking group FancyBear, the same group responsible for attacking Democratic Party networks during the 2016 US presidential election, enacted their revenge in the digital realm.

Covert action is “the effort of one government to influence politics, opinions, and events in another state through means that are not attributable to the sponsoring state” (Anderson, 1998, p. 423). Yet in cyber security, the attribution problem is often overstated, what is beyond our ability is constructing real-time data that can be used to charge culprits in the act based on domestic legal standards. Observing malicious cyber behavior is possible but delineating responsibly in a legal sense is quite difficult. Measuring ongoing infiltrations, unknown zeroday threats, and attempts at access that fail are difficult if not impossible to observe. Once an operation achieves a certain level of access, inserts malware into the target, and seeks to coerce the opposition, there are clear observable patterns that can be documented.

In short, there is much we can know about the cyber security domain that can be gleamed from observations. Operating in this landscape as if the threats cannot be known, monitored, and predicted betrays the great advances we have made in doing exactly this. What we cannot do is watch ongoing operations as they occur. This is mainly because organizations might not know they are violated till after this happens, as was the case for the OPM hack (Koerner, 2016). Cyber security companies might operate at a level where they promise a great deal of information, but this is likely to be a promise that cannot be kept. There is clearly a great utility in cyber security data, but we must temper expectations and excitement with collaborative analysis and sobered expectations of the utility of these data-based efforts.

In the cyber security field, we witness all sorts of interactions that can be processed into data. Incidents and events, malware and its spread, vulnerabilities, and social media interactions are all critical elements of the cyber security discourse and represent collectable data samples. Yet, the majority of the cyber security field seems to reject the idea that data collection is possible. This is perplexing in the face of calls to reform the vulnerabilities equities process (VEP), or the process by which threats are communicated by the government to private industry (Newman, 2017). Cyber security data is clearly observable and a part of the news cycle for cyber interactions, but it is generally removed from the political, policy, and military discourse.

Unfortunately, some critics and skeptics believe that collecting data on a subject is synonymous with perfect information about a topic. Data producers have never claimed that their data was complete, total, or absent of bias. These attributes are common for all data enterprises. In the social science world, all data collection enterprises will be incomplete or inaccurate in some way. This does not mean that data projects should be scrapped, but that those who use these projects should understand the limits and possibilities inherent in data collection enterprises.

### NATO Good—2AC

#### Emerging tech makes NATO more relevant than ever. We control the direction of offense—a lack of security cooperation only makes tech crises worse.

Gilli, 20—Senior Researcher at the NATO Defense College (Andrea, ““NATO-mation”: preparing for technological transformation,” *“NATO-Mation”: Strategies for Leading in the Age of Artificial Intelligence*, Chapter 2, 26, dml)

What are the implications of the growing capabilities and dissemination of AI, ML and BD for NATO? Is the Atlantic Alliance powerless when faced with this wave of technological change, or could it adopt some measures to handle and address the ensuing challenges and opportunities? And what should Allies do? Should they pursue arms control or promote research and development, address legal and ethical questions, or just focus on the tactical integration of these new technologies? How can the Allies exploit their combined, but diverse, set of skills, capabilities and experiences so as to harness the power of AI?

Building on the previous discussion of AI as a GPT, it appears that the challenge for NATO is subtle, multifaceted and significant. First, in an age of accelerating technological change and growing domain applicability, catching up with industry leaders and innovators becomes more and more difficult for those that lag behind.73 This means that waiting is not a solution – even though acting prematurely, in a realm of great uncertainty, is inherently difficult and risky.74 Second, governments cannot expect that individuals, firms and organizations will be able to embrace and successfully exploit the new wave of technological transformation alone, without advice, support, direction, vision or investments in infrastructure. Third, while some countries will have an advantage, others will find the transition more difficult. Regardless of this, technological transitions do not occur in a vacuum, as they require the alignment of incentives among a multiplicity of actors, organizations and institutions, as well as the provision of complementary services and goods for the new technologies to flourish and be adopted.75 Fourth, and more important for NATO, without coordinating and cooperating on their investments in the necessary complementary assets, goods and services, Allies could find themselves having to face additional hurdles.

What types of problem could emerge? Technology-generated efficiency gains in production lead to lower prices. However, lower prices lead to increases in demand – because the relative price of substitute goods (rivals) increases.76 Over the past decade, AI – and, in particular, ML – has made a particular activity, prediction, cheaper: it is reasonable to forecast that this trend will continue in the future.77 As AI becomes cheaper, however, the demand for AI-related services will increase, thus leading to more demand for related necessities like AI specialists, AI infrastructure (and 5G networks) and AI components (processors). This in turn might well lead to scarcity and higher prices, thus pitching actors against one another – not unlike the early stages of the COVID-19 crisis, when individual self-interested actions led to collectively bad outcomes.78 In the context of a military alliance, the problem goes much deeper, as it can generate a beggar-thy-neighbour effect with allies competing for the same scarce resources.79 Moreover, without consultation and cooperation, Allies could end up developing different technological solutions, with the risk of undermining compatibility and interoperability. Similarly, they could end up prioritizing some problems over others, with the risk of developing multiple, different and redundant solutions while neglecting other points in need of attention.80 However, through intra-alliance coordination and cooperation, as well as dialogue and consultation, secondary market mechanisms and other approaches, NATO could provide an important contribution to identify and address this type of problems.81

### No Mindset Shift—2AC

#### Voting neg doesn’t disrupt cybernetic encroachment.

Markham, 21—Professor at RMIT School of Media and Communication and Professor MSO of Information Studies at Aarhus University (Annette, “The limits of our imagination: Challenges to raising critical consciousness about datafication and algorithmic archiving,” New Media & Society, Vol 23, Issue 2, 2021, dml)

The premise behind our visual design and performance-based strategy for ACS is that disrupting these everyday working frames is difficult. Although the capacity for imagining something new or different resides in all of us, the available material for any imaginative act is greatly influenced by prior imaginations. Readers are invited to invoke various conceptual legacies to flesh out this idea. When designing these workshops, I was drawing on symbolic interactionism, rhetorical theory, and organizational communication, including Goffman’s notion of frames, Burke’s terministic screens, the general notion of bounded technological rationality, Lakoff’s work on the power of metaphors, Gramsci’s writings about hegemony, and Gidden’s social theory of structuration.

One builds their knowledge about their relationship with technology through a dynamic and ongoing chain of learning moments, including using that technology, watching others, learning from various others how these should be used, and then explaining these possibilities to oneself and others (Orlikowski, 2000). One’s understanding of how technology such as the internet, social media, or digital platform works grows more concrete over time, through habitual practice (Giddens, 1984).

This same tendency occurs in everyday conversations, as people describe to themselves or explain to others the possibilities and limitations of what a digital platform should be used for. As a chain of rhetoric, then, each link builds evidence or reasoning that accretes --over time and repetition. Whatever we call the outcome--e.g., terministic screens1 , technological frames2 , or technological rationality 3 , these function similarly as filters, enabling and facilitating certain ways of defining and making sense of digital platforms or technical devices.

The term ‘sharing’, for example, is commonly used to describe what we do on social media platforms. Conducting a genealogy of this term allows us to reveal an imaginary about how the internet works, particularly related to how personal information flows into, around, and across digital platforms and services (cf. Johns, 2015; Markham, 2016). As Markham (2016) notes, the word ‘sharing’ places the burden of responsibility for data and privacy protection on the shoulder of the individual. Sharing implies a voluntary act of knowingly giving what you have to someone else. This metaphor operates under the surface of social media discussions, continuously reinforcing a frame of personal (versus platform, governmental, or data aggregator) responsibility. However these frames are constructed--through practice, structures, or language, the relationship between an imaginary and a material fact is time and habit.

The challenge of breaking frames that are buried in the materiality of technology use

In everyday socio-technical environments, existing and common frames may not be even noticed, and so the implicit or tacit narrative is only seen when we dig beneath the surface. This is difficult once the routine is built into the actual interface, device defaults, hardware, or software. One of the questions we commonly asked ACS participants was ‘Where do you store your photos?’ Many ACS participants would respond quickly, ‘on my phone’ but then add ‘--or in the cloud.’ When pressed, many didn’t know what that meant, precisely. The cloud was described as many things, including the company that made the device, the browser, the Internet, the web, a website, a platform, the app, or a server. This is not to emphasize that people have only a rudimentary understanding of the infrastructures behind the surface of their device. To an extent, we all do. Rather, it is to point out that the pathways from the creation of a data object on one’s device to the place where it’s stored, as well as the format in which it is stored, are obscured. This is a good thing, since it means we don’t have to attend to or learn to ignore all the processes behind our digital media use. But as they are invisibilized, so too are the pathways, and the knowledge of the process.

### Perm—2AC

#### Perm: do [plan action] and [alt action] across multiple worlds. Mutual exclusivity relies on a falsely totalizing theory of cybernetics—working in multiple worlds makes it easier to find the cracks.

Haraway and Harvey, 95—American Professor Emerita in the History of Consciousness Department and Feminist Studies Department at the University of California, Santa Cruz AND Distinguished Professor of Anthropology & Geography at The Graduate Center, CUNY (Donna and David, “Nature, politics, and possibilities: a debate and discussion with David Harvey and Donna Haraway,” Environment and Planning D: Society and Space 1995, volume 13, pages 507-527, dml)

Now again one of the things I really appreciate about your work is that you never ever take something that comes down the pike and say it's all negative. You always look at it and say, well OK, corporate capital has done this and this and this, but here are some real possibilities which, if we really think them through, we can take account of here. So I'd like to get you to comment a little bit about bodies-inthe-making—maybe fill that out a little bit—and then talk about the possibilities of political action in relationship to these processes of bodies-in-the-making and the problem of consciousness in relationship to that process. Haraway Right. Actually, the cyborg is a good example because some folks have picked up the figure of the cyborg—because it is after all a configurational move in a politicized narrative and not a literal statement about the world (but some folks read it that way too)—some folks pick up the figure of the cyborg and use it in a celebrational mode, and miss the argument that the cyborg issues specifically from the militarized, indeed a permanently war-state based, industrial capitalism of World War 2 and the post World War 2 Cold War. They miss that the cyborg is born as the cyborg enemy, as the man-machine for extraterrestrial exploration. Now, from that particularly unpromising position, what possible kinds of cracks in the system of domination could one imagine beyond a kind of sublimity, a kind of wallowing in the sublime of domination which, of course, many folks do ... Harvey I'm tempted myself sometimes [laughter]. Haraway At times we feel like we don't have a lot of emotional choice. But the first and most obvious issue to me is that no world is finally ever closed, that the fantasy of the closed world is evidence of the pathological conditions called paranoia [laughter]. And the sense of the utterly closed system is not Marxist, certainly; the sense of the final enclosure of all possibility is a particular psychological symptom in the face of being overwhelmed, and not a statement about the structure of the world, in my view. Looking for the cracks is rule number one. And looking for the cracks not necessarily from the point of view of the marginality or the voice of resistance or the place that isn't yet colonized, but more of the way Leigh Star puts it in a wonderful paper that explores her own allergy to onions—a trivial problem among the world's sufferings—but Leigh uses it as an analytical wedge. Being allergic to onions is a hard thing to convince folks about in restaurants and at conferences. But unless everyone fesses up to the onions in a given dish, their friend is going to be very sick very fast, and maybe so sick so fast that it could even possibly be life threatening. Now, she is not out to ban onions and the like; but she is interested in talking about those systems of commensurability in the world by which folks are supposed to live but which they don't and can't fit. She uses such incommensurability as the cognitive starting point for social theory. So let's take a more serious example. If you're interested, let's say, in the informatization of the world and the globalization of the world through the expansion of telecommunications, you don't look for spaces of resistance in terms of some kind of primitive, antitechnology warrior. Instead, you begin your political, intellectual enquiry from the positions of folks who have no choice but to live inside the system of commensurability which is being established, but who don't and can't quite fit. So if you're looking at circulations of money, you look from the position of the laborer who is absolutely forced to live life from inside the system of the circulation of money, but who can't quite fit it in ways which have cognitive implications and political implications for some other possible kinds of livable world. You are always cycling through your work and your thinking from the perspective of a particular system of commensurability, whether it's money or information or DNA, the various common coins that bring people into shared worlds, like it or not. You work through, not the marginal position or some kind of point of resistance that's outside domination, but many kinds of not fitting. That, I think, always comes from necessarily living in more worlds than one, always living in multiple worlds. There is no way that the world is totally colonized by a single system of spatiotemporalities. Everybody lives in more than one world all the time, and learns how to do so, even inside oneself as well as in any social collectivity. Out of that, it seems to me, the question of agency becomes, in principle, easy, In practice, it's a question of use it or lose it. Agency is not something that pre-exists a situation of political action, in which you sort of lift up a veil of discoveries and then go do something. Agency is, rather, the practice of actualizing the consequences of multiple lived worlds.

### State Key—2AC

#### Any emancipatory politics worth its salt must include a role for states as platforms for political action. The alt “cedes the ground of power” to cybernetics.

Williams, 15—Lecturer in Digital Media & Society, School of Politics, Philosophy, Language and Communication Studies, University of East Anglia; at time of authorship, Ph.D. candidate, University of East London (Alex, “Control Societies & Platform Logic,” New Formations, 84/85, pp. 209-227, dml)

In terms of a critical or emancipatory politics, where does this leave us? If we are to take control in the cybernetic sense as our basic understanding of the technology of power today, we would be left groping for essentially resistant political practices. Hacking, the spreading of viruses, the disruption of logistical infrastructures, the creation of temporary autonomous zones: all these would be central to our thinking. Though subversive, the marginality of such practices effectively cede the ground of power to neoliberal capitalism in advance.84 This is, however, a somewhat one sided picture of contemporary techno-social power. If we supplement our understanding of cybernetic control with the figuration of the platform, it is possible to identify the basic mechanisms by which the present technologies of power propagate themselves: their ability not simply to repress, but also to construct, with their self-perpetuation directly related to their ability to enable. Aligned with this, we might observe the similarities between platform design and Steven Lukes’ “three dimensional power” (the ability to decide what is decided), and especially with Gramsci’s idea of hegemonic power.85

To take up the Gramscian flavour of the platform would also be to employ Gramsci’s double faceted understanding of hegemony: as a theory of power both as it exists in the hands of capitalist states, and as it might be held by the forces which oppose them. In this sense, the task of an emancipatory politics today would be to build its own platforms, and to oppose those wielded in the name of profit. Such a constructive politics would begin on the basis of understanding the most sophisticated forms of contemporary power within the control society, the platform, and proceed by understanding how its underlying principles might be translated into the repertoires of left politics. This might include such potentially valuable avenues as the question of organisation – how do we move from parties and unions structured around outdated principles of structural unity towards designing platforms for political action capable of hosting an unknowable range of contingent political actions? It might touch upon the problems of planning in the critique of socialist calculation – how could an understanding of the platform enable a transition from thinking in terms of economic plans which exhaustively determine action in advance towards relatively open-ended platforms able to respond flexibly to changes within the economy? Finally, we might consider modern states and markets as platforms, and the particular ways in which they are generatively entrenched within the broader social milieus which they help organise.

### Techno-Pessimism Bad—2AC

#### The alt spreads techno-pessimism—causes extinction.

Broughel and Thierer, 19—adjunct professor in the economics department and at the Antonin Scalia Law School at George Mason University AND senior research fellow at the Mercatus Center at George Mason University (James and Adam, “Technological Innovation and Economic Growth: A Brief Report on the Evidence,” <https://www.mercatus.org/publications/entrepreneurship/technological-innovation-and-economic-growth>, dml)

Technological innovation is a fundamental driver of economic growth and human progress. Unfortunately, that insight is often lost or underappreciated in technology policy discussions today, which frequently focus on the disruptive effects associated with technological change.1

Today’s technology critics have moved well beyond traditional complaints about “the cult of convenience”2 or the supposed “paradox of choice”3 that innovation creates. Now they claim “it’s OK to be a Luddite,” because technology is “dehumanizing” and “will eliminate what it means to be human.”4 Technology and automation will not only lead to a “jobless future”5 —more profoundly, modern innovations represent a “dangerous master” to be feared and resisted,6 because they pose an “existential threat” to the very future of civilization.7 Finally, the critics advocate a “radical project of social transformation”8 and a full-blown “de-growth movement” to slow the pace of innovation.9

If these fears and anxieties about technological change come to influence the formation of public policy, they could undermine the profound benefits associated with technological innovation. To inform policy discussions and address the technology critics’ concerns, this paper summarizes relevant literature documenting the impact of technological innovation on economic growth and, more broadly, on living standards and human well-being, as well as the important role that public policy has to play in fostering innovation.

We begin by discussing the nature of innovation in general before reviewing what the essential models of economic growth, such as the Solow model and more recent “endogenous” growth models, have indicated about the role of technological innovation. We summarize some of the growth-accounting literature’s early estimates about the contribution that technological change has made to growth, and we document what macroeconomists and economic historians have said about the importance of technological innovation for economic growth.

Innovation as a concept is difficult to define, but economists generally use the term to refer to increases in the quality and variety, or reductions in the cost, of goods and services provided by the market. The concept of growth, by contrast, is more narrowly focused on increases in the quantity of goods and services produced—in other words, it refers to overall production. Measured growth does not always reflect every way in which production has increased over time, however. For example, there are well-known limitations to GDP, a main measure of economic growth. Perhaps the best-known limitation is that GDP struggles to take into account quality improvements that occur as old products are made better over time. It also fails to fully consider the rate at which new products replace old ones over time. Since quality and variety of goods and services are closely connected to innovation, the shortcomings of GDP also make it difficult to fully capture the impact of innovation. Thus, we can generally expect conventional national income statistics to understate the true impact of innovation on living standards and well-being. Despite these measurement issues, however, economists still believe innovation to be a key driver of growth.

An important takeaway from the research on the causes of and contributors to growth is the observation that differences in physical capital cannot explain all of the observed variation in growth rates seen among countries. This explains why, over time, economists have shifted their attention away from capital and toward more abstract forces that underlie the process of technological change, such as the processes that engender new ideas. The importance of technology is not in doubt, although it is not always clear what cultural, political, or market systems affect the pace of innovation. What is clear, however, is that innovation is hard to come by. It is expensive to generate, and market and policy imperfections make it such that we get less of it than is optimal. In other words, we need much more—not less—innovation than presently occurs.

This paper concludes with an extended discussion about the relevance of these findings for public policy. The cultural attitudes of the public, as well as the attitudes of policymakers, are critical for fostering innovation. Without a culture that embraces risk-taking and entrepreneurship, innovation is likely to be thwarted because of its disruptive nature. This would be a tragedy, given the profound benefits that accompany economic growth and technological change.

THE NATURE OF INNOVATION

Although, as mentioned above, the concept of innovation is somewhat hard to pin down, it can be thought of as taking three forms: (1) cost reductions, (2) quality improvements, and (3) increases in the variety of goods, services, and methods of production. Innovation is about finding new and better ways of doing things and introducing new ideas or new types of products and services into the marketplace.

This focus on “new ways of doing things”10 and “the development and widespread adoption of new kinds of products, production processes, services, and business and organizational models”11 is what lies at the heart of the process of innovation. But what is crucial about this process is that it serves as a means to an end: it helps drive progress, and human flourishing more generally. “Innovation is more than the latest technology,” notes Sofia Ranchordás, a resident fellow at the Yale Law School. “It is a phenomenon that can result in the improvement of living conditions of people and strengthening of communities. Innovation can be technological and social, and the former might assist the latter to empower groups in ways we once thought unimaginable.”12

While this paper focuses on technological innovation, innovation more broadly has impacts that extend far beyond technology and consumer satisfaction. Social media, for example, is changing the way human beings interact with one another. Such changes create both benefits and new challenges, which extend beyond the number, quality, and variety of goods and services we consume. Innovation changes our culture.

In the short term, changes initiated by innovation can lead to disruption, some of which may be unsettling. Some old business models will fail and some individuals will lose their jobs. In the long run, however, the endless search for new and better ways of doing things drives human learning and, ultimately, prosperity in every sense—economic, social, and cultural. Those who lose their jobs will eventually find other jobs and serve the public in new and different ways. While critics complain about various aspects of technological change, the historical record is unambiguous regarding how ongoing innovation has improved the way we live.

The degree to which a culture is open to experimentation and change, and to new ideas that threaten to upend the status quo, is important. Public institutions also have the potential to evolve over time in ways that can either nurture or hamper innovation.

Robert Bryce explains why innovation culture and policy are important in his recent book, Smaller Faster Lighter Denser Cheaper: How Innovation Keeps Proving the Catastrophists Wrong:

This pessimistic worldview ignores an undeniable truth: more people are living longer, healthier, freer, more peaceful, lives than at any time in human history. . . . The plain reality is that things are getting better, a lot better, for tens of millions of people around the world. Dozens of factors can be cited for the improving conditions of humankind. But the simplest explanation is that innovation is allowing us to do more with less.13

“Doing more with less” is the core feature of productivity growth. Over the long term, productivity growth raises the standard of living for citizens as an ever greater number of products and services are produced with the same or fewer production inputs than were required in the past. For example, agriculture was once the dominant form of employment for Americans, but now only a tiny slice of the American population is engaged in farming, even while agricultural output has increased. This change was not easy, but it freed a vast swath of the labor force to explore other modes of production. As will become clear in the following sections, productivity growth and economic growth are inextricable, and productivity growth is closely related to the process of generating new knowledge.14 It should not be surprising, then, that the knowledge-generation process has become a central focus of research on the determinants of economic growth.

New knowledge is hard to come by. For one thing, it has attributes like those of a public good. In economics jargon, this means it is often (though not always) nonexcludable and nonrivalrous. (Nonexcludable signifies that, once knowledge exists, it is freely available for anyone to use, and nonrivalous indicates that the ability of one person to use knowledge does not impede the ability of another person to use it.) For this reason, it is easy for those who invest nothing in the discovery of knowledge to “free ride” off the inventiveness of others, which can discourage innovators if they cannot capture all the benefits of their inventions.

Consider the ordinary cell phone. Even though the device itself is a private good that can be bought and sold for the exclusive use of individuals, the basic idea of a mobile telephone is available for anyone to use. Once the general concept for cell phone technology exists, any firm around the world can produce its own version of cell phones; the ability of one firm in Japan to produce cell phones, using the cell phone “blueprint,” so to speak, does not impede the ability of another firm in, say, the United States to use the same general design.

This “blueprint” quality of knowledge helps explain why innovation is often thought to be closely connected to research and development. The nonexcludable nature of technology is a core reason why patent protections exist to protect inventors. Yet innovation must also be excludable to some extent—otherwise there would be little incentive for businesses to invest in new technologies at all. Excludability implies some degree of monopoly power over new ideas— which can come in the form of business secrets, for example—and by extension implies some degree of suboptimality in markets. Because a monopoly will tend to produce less than is socially optimal, markets often can’t be expected to produce as much innovation as we would like.

Market imperfections aren’t the only realities that discourage innovation, however. Political forces also stand in the way.15 The benefits of new knowledge are slow to materialize and tend to fall broadly across the entire population, while short-term disruptions caused by innovation often affect well-organized and powerful incumbent interests. For example, recently the hotel industry has fought to limit the growth of Airbnb. Such political forces, in addition to the market forces just mentioned, lead to less new knowledge, and—by extension—to less innovation than is desirable for society.

GROWTH THEORY AND GROWTH ACCOUNTING

The extraordinarily influential Solow growth model kicked off a 20th century revolution in growth theory.16 The model attempted to explain growth using the basic physical inputs of the production process, labor and capital, along with a generic technological change variable that was assumed to grow at a steady rate, regardless of any factors that might change in the model. Jeffrey D. Sachs (a leading development economist) and John W. McArthur have noted that “Solow did not try to explain the source of that technological advancement; he merely assumed it.”17 This assumption is especially curious given that the source of long-run economic growth in the model was this mysterious technological change variable.

Solow’s model did not preclude a role for savings and investment, which contribute to capital formation, but instead predicted that savings and investment would influence only the short-run growth rate of the economy—not the long-run “balanced growth path” growth rate. A key prediction of the Solow model was that, because of diminishing returns to capital, countries with a smaller capital stock would grow more quickly than those with a larger capital stock—so-called “catch-up growth.” For this reason, early studies following Solow’s often focused on whether this prediction, that lower levels of capital lead to faster short-run growth, held true in the real world.18

Explaining the determinants of growth has led to an entire field within economics known as growth accounting, which populates the Solow model, or a model like it, with real-world data in an attempt to empirically measure the contributors to growth. The modern growth accounting field started with a 1957 article by Robert Solow himself,19 a follow-up paper to his classic 1956 article. In his 1957 study, Solow attributed just one-eighth of the growth of US output per man-hour to changes in the capital stock, while seven-eighths could be attributed to technological change.20 A study in 1961 by John Kendrick similarly found that technological change explains on the order of 80 to 90 percent of labor productivity growth, depending on the time period analyzed.21

The technological change measures from these studies were actually measures of something called total factor productivity (TFP), which is not the same as technological innovation. TFP is assessed in growth accounting studies through the so-called residual. The residual explains the growth that cannot be accounted for by the differences in measured inputs. While TFP is sometimes referred to as a measure of technological progress, as it was by Solow himself in 1957, in fact, TFP represents all contributors to growth coming from factors aside from the measured inputs. The somewhat embarrassing conclusion that the vast majority of growth cannot be explained by the measurable factors in a growth model is why TFP is sometimes referred to as a “measure of our ignorance.”22

By equating TFP growth with technological change, the early estimates of economists such as Solow and Kendrick overestimated the contribution of technology to measured economic growth. While considerable uncertainty remains, the current consensus seems to be that somewhere between one-third and threequarters of economic growth can be attributed to TFP growth.23 Over time, however, growth accounting exercises have become more sophisticated and have included other determinants of growth beyond capital and labor, including the average level of human capital per worker in a country24 and measures of social infrastructure, which include factors like institutions and government policies.25

The Solow model made no attempt to explain technological advancements, but the so-called “new growth theory” has taken on the challenge of identifying the forces underlying technological progress. Much of this work has built on the phenomenally influential model developed by recent Nobel Prize winner Paul Romer, whose work seeks to explain the process of technological change that drives growth.26 The new growth theory literature inspired by Romer is extensive and tends to emphasize factors such as population size, research and development spending, and spillover effects, as new knowledge spreads from one part of the economy to other areas.

A core assumption in the Solow model was diminishing returns to capital: that is, as more capital is accumulated, its productivity diminishes. This assumption, while intuitive on some level, is also rather extreme in that it downplays the possibility of spillovers—such as the possibility that workers become more productive as they learn on the job, or that physical and human capital accumulation contribute to new knowledge, further enhancing productivity across the economy. Rather, in the Solow model, technological change is handed down like manna from heaven. For this reason, the model implies that policies are unlikely to impact long-run growth. Taxes and regulations that reduce the capital stock might slow the short-run growth rate, but not the long-run growth rate.

New growth theory, with its “increasing returns” models, has very different policy implications from those of the Solow model. These models often assume spillover effects of various kinds. For example, worker productivity might increase through experience—so-called learning by doing.27 Human capital accumulation might have benefits to all of society, not just to the workers who increase their education. These small changes in modeling assumptions produce dramatically different policy conclusions. Increasing returns models find that policies can influence economic growth rates, such that even small changes in policy can have dramatic effects over long time horizons.

The current consensus seems to be that capital formation explains perhaps 30 percent of differences in cross-country growth rates,28 and almost certainly less than half.29 While this is less than might be expected, this finding suggests that investment and capital accumulation do contribute to growth, and increasing returns models offer an explanation for this empirical result.

Of the remaining unexplained growth, some can be attributed to the discovery of a few breakthrough technologies, known as general purpose technologies (GPTs). A GPT is a generic technology with widespread uses that leads to many subsequent innovations.30 A classic example from recent years is the internet, which has spawned entire new industries and also has transformed the way existing industries operate. There is considerable evidence that breakthrough, revolutionary technologies like GPTs can affect economic growth rates. Some economists have gone so far as to model growth as a process that is primarily driven by the arrival of GPTs.31 Other studies have estimated that just a handful of “great inventions,” such as electricity, could account for as much as half of TFP growth in the early 20th century.32

In more recent decades, some economists have argued that the productivity slowdown of the 1970s was temporarily reversed in the 1990s as a result of the IT revolution that accompanied the creation of the internet. One study found that the internet explained 21 percent of GDP growth in mature economies during a five-year period in the early 21st century.33 Given renewed concerns about stagnant growth,34 it appears that one or two large discoveries can be enough to trigger growth for years or even decades.

Brink Lindsey of the Niskanen Center aptly summarizes what has become a widespread consensus among scholars from many different fields within the economics profession: “The long-term future of economic growth hinges ultimately on innovation.”35 Indeed, as Sachs and McArthur have stated, “The harder we think about it, the more we realize that technological innovation is almost certainly the key driver of long-term economic growth.”36

In order to boost growth, then, the focus should be on advancing the state of the art, or as economists say, advancing the “technological frontier.” A country’s distance from the technological frontier, like its level of capital per worker, will influence its growth rate. Innovation shifts out the technological frontier, increasing the global growth rate as “follower” countries are able to adopt new technologies. This general paradigm, whereby some leading countries push out the technological frontier and others follow, means that countries that contribute disproportionately to technological progress also disproportionately contribute to human progress more generally at a global level.

Public policies are vital for nurturing the technological innovation that fuels the engine of global growth. Finding the right mix of policies to foster technological progress is no easy task, and there is no guarantee that this Goldilocks mix can be sustained even once found. If the innovation engine breaks down, it could have dire consequences for the entire world.

### AT: Authoritarianism/Dystopia/Eugenics/Etc

#### Their impact is technopanic and the alt is much more likely to cause suffering than the aff.

Thierer, 19—senior research fellow at the Mercatus Center at George Mason University (Adam, “The Radicalization of Modern Tech Criticism,” <https://www.aier.org/article/the-radicalization-of-modern-tech-criticism/>, dml)

But just as Plato failed to appreciate the full benefits of the written word, today’s technology critics sometimes go much too far and overlook the importance of finding new and better ways of satisfying both basic and complex human needs and wants. In fact, today’s tech critics are fueled by a “technopanic” mentality and are growing increasingly more radical. They peddle a revisionist history of Ludditism and push for an innovation-limiting “techlash” that would shackle entrepreneurs with layers of red tape before any progress is permitted.

If not countered, this swelling anti-tech movement could curtail the creation and diffusion of technologies that could boost economic growth, raise our standard of living, improve our health, and extend our lives.

Are Innovation’s Benefits Just an Illusion?

In a recent white paper, my Mercatus Center colleague James Broughel and I cataloged the voluminous literature that documents the symbiotic connection between technological innovation, economic growth, and human flourishing. Decades of research by historians, political scientists, and economists reveals that technological innovation is a fundamental driver of long-term improvements in well-being.

However, today’s tech critics would have us believe those empirical findings are largely hogwash. Scanning lists of top-selling tech policy books and the most assigned texts on innovation in college classrooms, one is struck by the lugubrious lamentations of the critics. Increasingly, academics are calling into question technology’s very worth to civilization.

Anti-tech complaints used to be focused primarily on how innovation creates a supposed “cult of convenience” or a supposed “paradox of choice” because of the cornucopia of options it offered to us. Today’s critics build on these critiques but have also upped the ante. Borrowing the old neo-Marxist clichés about how industrialization is “de-humanizing” and “alienates” the masses while force-feeding us stuff we do not need, modern tech critics go further and claim that innovators are “reengineering humanity.” These critics suggest that innovation’s benefits are dubious at best and that technology is not a helpful servant to humanity but instead a “dangerous master” that is “slipping beyond our control.” Consequently, “it’s OK to be a Luddite,” writes David Auerback in Slate, because modern tech “will eliminate what it means to be human.”

The book titles or subtitles from leading tech critics include frightening phrases like “Techno Creep,” “Future Crimes,” “Against the Machine,” “Digital Barbarism,” and, “Click Here to Kill Everybody.” In this dour worldview, technology is destroying both our culture and economy. Critics warn of a coming digital dystopia, where truth and authority vanish, high culture crumbles, and political polarization breeds closed-mindedness and even the very death of democracy.

Meanwhile, robotics, machine-learning, and automation pose an “existential threat” to the very future of civilization not only because they will lead to a “jobless future,” but because they will brainwash us into becoming a “world without mind,” in which we cannot think for ourselves.

Blueprint for Reconstructing Civilization

Is there any hope of surviving the impending techno-apocalypse? Perhaps, the critics say, but only with a heavy dose of precautionary principle-based policymaking and a return to a “simpler time” or some wiser form of living.

Best-selling tech critic Evgeny Morozov advocates a “radical project of social transformation,” “data distributism,” and a full-blown “degrowth movement” to halt the pace of innovation. Morozov’s distaste for private digital platforms like Facebook and Google runs so deep that he recently applauded China for “reasserted sovereignty in the digital domain” with its “social credit system,” which is a centralized method of online reputation scoring of citizens. (Apparently, he is not too worried about how China already uses its massive digital surveillance infrastructure to oppress dissenting views.)

Morozov and other critics like Brett Frischmann and Evan Selinger regularly play up the benefits of “adding friction” to the technological design and diffusion process. They are not always clear about what that entails, but they rail against the idea of efficiency as a societal benefit. They instead suggest we should slow things down and gum up the works a bit to be more thoughtful about the tools we are creating. Although they will never admit it, “adding friction” likely means fewer choice, higher prices, and longer delays in the technological improvements most of us desire.

Luddites Living in an Amish Paradise?

Critics like Frischmann often argue that “there’s nothing wrong with being a Luddite,” because if nothing else it, “enables critical reflection and evaluation of the technological world we’re building.” In their revisionist accounts, the Luddites have been recast as the original “humanists” and defenders of Amish-esque values, who understood how to temper the role of modern technology in our lives.

But the Luddites were not Amish. The Amish lifestyle is completely voluntary and, in many ways, there is much we can learn from it. But we are also free to reject it and the Amish will not impose their anti-modernist values upon us through threats of force.

That is the fundamental difference between appreciating the Amish versus calls for a reassessment of the Luddites as a model for reorganizing modern society. Today’s neo-Luddites seek to preserve whatever technological status quo they desire, and would impose that choice upon us whether we like it or not. Thus, when the critics wax nostalgic about the Luddites, it suggests that more forcible resistance to change is required, likely through sweeping bureaucratic controls on every facet of technological development.

If, therefore, modern tech critics wish to align themselves with the Luddites, they should at least own up to the fact that what they desire is something quite radical. A reembrace of Ludditism and the creation of a “degrowth movement” would necessitate highly repressive and destructive steps to end technological progress as we know it and, in the process, deny society choices that most of us believe better our lives in countless ways.

The Unabomber Bounces Back

We already see the potential dangers of these ideas with the growing anti-technological militancy of some environmental activists. New York magazine recently documented how many of them are experiencing their “Kaczynski Moment,” when they discover the extremist teachings of Ted Kaczynski (aka, “the Unabomber”) and come to “understand progress as industrial slavery.”

Ironically, several versions of Kaczynski’s Unabomber Manifesto as well as his Anti-Tech Revolution are available on Amazon and sell for $10-$20. The average review for the books are around four out of five stars and include customer reviews about how he is a “misguided genius” whose books are “brilliant, riveting and useful” and are full of “well-articulated thoughts” and “fascinating ideas.”

Kaczynski’s critique of industrial society apparently doesn’t extend to his own ability to sell books on the world’s biggest online retailing site. And it appears buyers aren’t too concerned about spending money in support of a man who killed and maimed over two dozen people during a twenty-year nationwide mail-bomb reign of terror.

Regardless, ideas have consequences, and we shouldn’t be surprised to see more people casually embracing such dangerous, anti-human thinking with academics blithely claiming that “there’s nothing wrong with being a Luddite” and encouraging them to embrace a “degrowth movement.”

Tool-Making is in Our Nature & the Key to Human Flourishing

Properly understood, “technology” simply represents the practical application of knowledge to a task or need at hand. As Benjamin Franklin once noted, “man is a tool-making animal” because, by our very nature, tool-building it is the key to our survival and prosperity as a species. Through ongoing trial-and-error tool building, we discover new and better ways of satisfying human needs and wants to better our lives and the lives of those around us. Human flourishing is dependent upon our collective willingness to embrace and defend the creativity, risk-taking, and experimentation that produces the wisdom and growth that propel us forward.

By contrast, today’s neo-Luddite tech critics suggest that we should just be content with the tools of the past and slow down the pace of technological innovation to supposedly save us from any number of dystopian futures they predict. If they succeed, it will leave us in a true dystopia that will foreclose the entrepreneurialism and innovation opportunities that are paramount to raising the standard of living for billions of people across the world.

### AT: Consumption/Economic Rationality Ks

#### They should be responsible for defending the consequences of the alt’s material implementation—current economic models are too entrenched to critique away without a feasible blueprint for change.

Russi and Haskell, 15—Senior Lecturer in Sociology, Azim Premji University AND Assistant Professor, Mississippi College School of Law (Luigi and John, “Heterodox Challenges to Consumption-Oriented Models of Legislation,” Unbound: Harvard Journal of the Legal Left, 9:13, 2015, dml)

The difficulty of following these critiques from American Legal Realists and these other heterodox authors to any normative conclusion, however, seems two-fold. On the one hand, to think outside of consumption seems in some ways to border on a theological aspiration, to be ushered into the responsibility of remaking society according to some almost other-worldly dimensions: an economic order that conceives progress beyond growth, a socio-political structure that allows for systemic change without reducing the possibilities of human freedom, the normative agenda to substantiate egalitarian relationships, a global order that preserves the victories of industrial capitalism while simultaneously transcending its costs (ecological, human, etc.). On the other hand, critiques of consumption-led governance seem both anachronistic and violent. They are anachronistic because they either too readily rely on the possibilities of the Enlightenment assumption that there is a clear set of ‘truths’ that once disseminated to the population will enact meaningful change (e.g., if particular industries or products are demonstrated to be unsustainable to the environment, populations will demand alternatives) or they overly invest in the possibility of some benevolent, universalizing spirit that is capable of trumping the politico-economic exigencies of personal well-being (e.g., individuals are naturally willing to collectively do the right thing for the greatest amount of people even at personal cost in a consistent manner). They are violent because in calling for systemic change, such reversals would almost undoubtedly entail significant and most likely intensely hostile opposition from entrenched actors who benefit from the current economic legal arrangements. A liberal mode of economic management (e.g., consumerism) is itself undoubtedly more coercive and violent than its advocates tend to admit (e.g., it is part of the very problems it claims to address), but where the fundamental point of disagreement arises is over the question whether the current trajectory is occasioning a level of lost opportunity costs that warrant the effort and violence most likely necessary to enact an alternative mode of political life. Furthermore, if we accept the proposition of the necessity of coercive change, it still begs the question to what extent its proponents within intellectual circles are really willing to fully participate and accept the potential costs of radical struggle – they may, to put it vulgarly, simply have too much comfort to lose. To what extent, in short, are current left-oriented calls within academia and policy circles merely reflecting the more general postmodern crisis of identity versus the partisan militant residing at any revolutionary core? In giving normative bite to any alternative model, as the American Legal Realist Robert Hale pointed out, it seems undoubtedly the case that any future system would only find new constraints and forms of violence to sustain its cohesiveness.

[T]he systems advocated by professed upholders of laissez-faire are in reality permeated with coercive restrictions of individual freedom, and with restrictions, moreover, out of conformity with any formula of “equal opportunity” or of “preserving the equal rights of others.” Some sort of coercive restriction of individuals, it is believed, is absolutely unavoidable, and cannot be made to conform to any Spenserian formula.161

If fundamental reform to consumer-centric governance is inherently violent – in that it will necessarily create only new winners and losers, and not without potentially violent conflict and disruption – the challenge is therefore not just a question of ethics or political will (e.g., the current distribution of resources is unjust/violent), but the feasibility of re-conceptualizing efficiency, both in terms of strategy and tactics: in other words, upon what standard might we measure progress (or stated differently, what are the lost opportunity costs of continuing on the current trajectory versus an alternative economic model), and how might this be actually accomplished.162 To set out on such a task is exactly the stakes of future progressive scholarship, and upon which we wish to close our study with a brief reflection.

### AT: Cybernetic Socialism/Communism

#### Digital socialism is a sham.

Gardiner, 20—Professor of Sociology at the University of Western Ontario (Michael, “Automatic for the People? Cybernetics and Left‐Accelerationism,” Constellations: An International Journal of Critical and Democratic Theory, August 6, 2020, dml)

The notoriety of Project Cybersyn in Left‐accelerationist circles and beyond is perhaps not entirely surprising insofar it is the best‐known example of consciously deploying cybernetic principles for what were felt to be emancipatory ends, rather than the augmentation of state or corporate power.3 Due to circumstances very much beyond its control, the system was never brought fully online, and of course we will never know the directions in which it might have developed. However, thanks to Medina's detailed and exacting research, we have been made aware of the sometimes yawning gap between Beer's vision and how it aligned politically with the undeniably admirable goals of Chilean socialism, and the actual nature of Cybersyn's attempted implementation. For instance, worker participation was token at best, and not an integral part of system design; engineers and factory managers didn't really overcome their professional and class bias; and gender inequities with regard to design and organizational management were barely acknowledged, never mind meaningfully addressed (see also Espejo, 2009, p. 79). However, we are less concerned here with the historical realities of Cybersyn or the specific features of Chilean socialism than more general cybernetic principles and how they might lend support to any viable postcapitalist transition. Put differently, to indulge in a spot of “immanent critique,” do the claims of Left‐accelerationist cybernetics regarding enhanced possibilities for human freedom, solidarity, and autonomous self‐actualization match the reality (or potential reality)? What is crucial vis‐à‐vis any such discussion is the (often implicit) suggestion, outlined in the previous section, as to the qualitative differences between first‐ and second‐order cybernetics, together with the idea that Left criticisms typically, and illegitimately, conflate the two. Rather than the use of negative feedback oriented to the maintenance of order by inhibiting counteraction, so the argument goes, second‐order cybernetics is concerned with positive feedback, working through amplification and enhancement of the original signal, whereby the presence of complexity and chaotic states demonstrates the non‐linearity of systems and their capacity for unpredictable change in the pursuit of open‐ended (but self‐correcting) goal attainment. And yet, a careful examination of writings by the likes of Tiqqun or Châtelet demonstrate that they were generally aware of different currents in cybernetic thinking, but nevertheless argue that, whatever its ostensible methods and goals, second‐order cybernetics promulgates a new regime of power and control that dovetails in many respects with the requirements of today's supercharged technocapitalism. Going further, they intimate that even some version of “cybernetic socialism,” with presumably novel human‐machine assemblages, might not necessarily escape this morass.

Arguments concerning this shift to a new regime of power often make reference to one of Deleuze's late essays, or at least show its influence: the brief but tantalizing “Postscript on Societies of Control.” In nuce, Deleuze's position is that the type of “disciplinary” society theorized by Foucault, marked by various enclosures (schools, factories, military barracks, bureaucracies) wherein social behaviors were scrutinized and minutely organized in space‐time so as to enhance their productive efficacy during an era of industrial capitalism, has been superseded by a quite different system of ruling more relevant to the present situation of powerful global corporations and the centrality of the “knowledge economy.” That is, whereas disciplinary societies concern themselves with a process of homogenizing subjectification largely through panoptical means, by which compliant individuals are integrated seamlessly into the mass, control societies are post‐panoptical, and rely instead on “ultrarapid forms of free‐floating control” (Deleuze, 1992, p. 4). Crucial with regard to the latter is the continuous accumulation of statistical information via the elicitation of communicative exchange across the entire social field. The focus ceases to be the atomized individual, but rather a numerically‐based assessment of the “dividual,” by which Deleuze means a generically average subject made comprehensible through opinion surveys, sampling techniques, and market research. Control is now exercised, not through hierarchical, top‐down management, much less by fostering techniques of hermeneutical self‐examination, but the pattern analysis of myriad electronic traces and the subtle shaping (or “nudging”) of micro‐behaviors via what Deleuze calls “universal modulation.” The key is that these environments are not segmented and closed, but fluid and open, and that social actors participate in and maintain the system dynamically through their own seemingly voluntaristic choices and actions, à la Lefebvre's “splendid impression of spontaneity and harmony.”4

The relevance of Deleuze's “Postscript” to our concerns should be fairly obvious. First‐order cybernetics is in lockstep with the nature and demands of what we might call late‐disciplinary societies. Second‐order cybernetics, by contrast, appears more compatible with progressive, even liberatory aims. An indication of this latter orientation is that many of the key figures in British cybernetics situated themselves on the Left of the political spectrum, and cultivated non‐conformist and often explicitly anti‐authoritarian interests, even if Beer himself was something of a “champagne socialist.” Yet, in embracing complexity, contingency, and openness, second‐order cybernetics is not wholly immune to the mentality of control and governance. Indeed, the types of non‐linear self‐organization as discussed by Deleuze are necessarily premised on disequilibrium and chaos: the multiplication of horizontal, autonomously‐structured communicative networks is the new mode of control, not any sort of emancipation from prevailing systems of power. Control societies depend precisely on the constant elicitation of affects and desires, as opposed to their repression or curtailment, provided they can be channeled into forms of communicative action subject to ongoing surveillance and statistical quantification. In second‐order cybernetics, as Maroš Krivý (2018, p. 18) usefully puts it, “power relations reproduce through proliferating indeterminacy, nonlinearity and complexity, rather than by curbing these into determinate, linear and unidirectional forms.”

Writing from the perspective of the French context of the 1990s, but hardly irrelevant to our own era of “nudge theory,” smart cities, and the like, Châtelet (2014, p. 23) suggests that the mania for incorporating concepts of “chaos” and “self‐organization” into what he regards as pseudo‐liberationist thinking was part and parcel of the intellectuals’ post‐1968 capitulation to “market democracy.” The latter is foursquare in favor of the “right to difference,” calling for an end to heavy‐handed state interference and concomitantly eulogizing social mobility and permanent “nomadism.” But that's only because the neoliberal market itself loves fluidity, movement, and constant acceleration, seeking to capture the “creative power of chaos” through a “cyberpolitics” that generates order out of the disorder of self‐regulation. Authoritarianism of the obvious variety is replaced by the covert injunction to produce and consume information, to subscribe enthusiastically to a universal “will to communicate.” Yet the encouragement to speak in the context of today's “social (or “global”) factory,” to cooperate, to express one's “authentic” thoughts and feelings, is ultimately a coerced and deadening gesture. For Châtelet, the “chaos of opinions and microdecisions” relies on a rhetoric of freedom via auto‐emergence, but there is always an apparatus of control working discretely behind the scenes, and hence a crucial distinction to be made between powerful designers and operators and those being operated on. Since the conventional state apparatus is now too slow and clumsy to respond effectively to the demands of the new fluid social ontology, scientific management of political sovereignty is rendered much more palatable when presented in the guise of refined “pressures exerted by an anonymous and nonlocalized entity” (p. 33). This constitutes a “ventriloquism” of power‐effects operating through such ubiquities as globalized market forces, intermeshed communicative networks, and the relentless organization of “public opinion.” Any particular social atom, the locus classicus of disciplinary societies, is irrelevant here; echoing Deleuze, for Châtelet what's important is the modulation of network fluidity via “hydro‐cybernetics,” and the effectuation of valuational equivalences across numerous domains through a universal system of inputs and outputs. Whereas the Young Turks of the new cybernetic order (the children of Lefebvre's cybernanthropoi?) conflate horizontality with enhanced democracy, Châtelet is adamant that the former does not in any way necessarily vouchsafe the latter. Indeed, horizontal formations concentrate power in vital nodal points, and are more effective for being anonymous and unseen, everywhere and nowhere at once, in contrast with “overly visible verticalities” that might precipitate resentment and opposition. The result is the “well‐mannered anarchism” of the market, which, unlike the “romantic” anarchism of old, threatens no societal upheavals ‐ first, because geared towards optimal management of a coolly technocratic nature, but also insofar as there is no worker “downtime” in an age of 24/7 networked production/consumption, and hence little opportunity to foment dreams of revolt.

From the vantage‐point of the early 2000s, in The Cybernetic Hypothesis Tiqqun takes some of these arguments further. Although Cybersyn isn't referenced directly here, they hone in on the technophile Left's contemporaneous fascination with cybernetic possibilities, anticipating later positions advanced by the Left‐accelerationists and “fully automated luxury communists.” According to Tiqqun, the period of upheaval around 1968 could be interpreted as the last reverberation of a cycle of struggles that dominated Western societies over the two previous decades. Facing the manifold shocks of rising worker militancy, the energy crisis, and precipitously‐declining rates of profit, global capitalism required full‐scale reconstruction, and, as discussed above, cybernetics fit the bill very well. However, the logic of cybernetics appealed to certain technologically‐oriented critics of capitalism as well, such as those advocating an “ecosocialism” premised on equilibrium and a steady‐state economy through decentralization and differentiation, especially in light of the Club of Rome's famous 1972 document “Limits to Growth.” For Tiqqun (2020b, p. 98), however, this represents a kind of “social capitalism” seeking change through the democratization or socialization of the “decisions of production,” as if a full‐blown post‐Fordist society could emerge spontaneously from a dispersed, popular “collective intelligence.” As an example, a “new social contract” like universal basic income adopts the logic of the current system's emphasis on “human capital” and the metaphysics of production. It is not incompatible with money, commodity exchange, or markets, and would only free up more disposable income so as to accelerate the circulation of goods and information at the behest of processes of value‐capture (see also Beech, 2019, p. 93). Ultimately, for Tiqqun this would make the labor force itself more, rather than less pliable. If the “new spirit of capitalism” is cybernetic to the core, so are “Left” solutions to the present crisis that rely extensively on repurposing existing infrastructures, neoliberal subjective dispositions, and logistics, so as to end up with a “communism of capital.” Or, to put it differently, any approach advocating the “framing of the world in terms of problems” is not a genuine communist project, but in reality another path to capitalism (Tiqqun, 2020b, p. 109; also Culp, 2018, p. 167). In this way, cybernetic capitalism has absorbed its ostensible opponents into an overarching paradigm of social regulation governed by a managerial reason, disposed to what The Invisible Committee (2015, p. 124) terms the “cult of the engineer,” that can serve the political objectives of “Left” just as well as “Right.” Even Pickering (2010, p. 273) admits that Cybersyn could have been re‐engineered by technicians and state functionaries of the Pinochet regime, and deployed to more nefarious ends than Beer would probably have imagined, which is likely not the kind of “repurposing” Left‐accelerationists have in mind.

It is noteworthy that Alex Williams has written independently about the relationship between Deleuze's theory of control societies and cybernetics, and it is therefore important to consider his arguments here. Rather than contrast the US and UK developments, and primarily associate “first‐order” cybernetics with the former and “second‐order” with the latter (a convention we have followed here), Williams advances a different set of distinctions. That is, he reserves the term first‐order for 20th‐century cybernetics in general, whatever the differences between, say, Weiner or Beer (odd in light of his admiration for Cybersyn, which gets only passing mention here), and suggests second‐order is a phrase better‐suited to the networked “platform” systems of the 21st‐century, such as Airbnb, Facebook, or Uber. First‐order cybernetics, by Williams’ reckoning, follows the domineering control logic as characterized above: it aims to modulate action via recourse to homeostatic equilibrium so as to realize pre‐set goals. In contrast, “platforms” are design architectures that work primarily not through constraint, but by enabling actions through positive feedback circuits that cannot be prefigured in advance. Platforms, writes Williams (2015, p. 223), are “materialised transcendentals – they act as conditions of possibility for other processes and entities to exist.” As “entrenched” infrastructures they do restrain in certain ways (for example, Microsoft owns the vast majority of home computer operating systems and forces users to conform to its licensing arrangements and surreptitious forms of data collection), but they also provide the ground for unpredictably contingent or “generative” outcomes, and hence contain hitherto‐untapped potentialities for autonomous self‐organization outside the aegis of state and capital. Yet, Williams is notably vague on what forms of such self‐organization might be possible here, or what exactly is being “enhanced” through the utilization of such platforms in ways that might be considered “emancipatory,” assuming this doesn't bolster the hegemonic power and virtual ubiquity of existing platforms. As argued earlier, control systems work precisely through such “enhancements,” via the solicitation, reinforcement, and augmentation of myriad desires and affects, so long as they can be successfully captured and “put to use.” “Platform capitalism” emerged after the 2008 crisis, argues Sebastian Olma (2016, p. 171), because of capital's need to both create and exploit a situation of permanent entrepreneurialism and precariousness in an era of falling profits, disinvestment, and declines in manufacturing productivity. In other words, the harnessing of auto‐exploitation is integral to these systems’ very design, whereby “platform proletariats” are pauperized both materially (participants in the “gig economy,” once time, expenses, and insurance are factored in, earn much less than even the minimum wage) and in terms of a relentless degradation of skill and knowledge. As such, it's difficult to see the liberatory potential here, insofar as such platforms are essentially about extending market logic into any and all domains of human life. In this context, Beer's algedonic meters, however crude or well‐intentioned, seem to anticipate today's omnipresent data capture and the vast amounts of unpaid digital labor it exploits (Amazon user reviews, Facebook “likes,” etcetera), which are all forms of “soft” coercion encouraging the formation of certain subjective dispositions in line with the demands of hyper‐productivity and acquisitive consumption. Towards the end of the article, Williams belatedly suggests that alternative platforms could be constructed in the service of non‐capitalistic ends. Yet, it's far from clear how these “socialized” systems could ever be designed and implemented, never mind constitute any sort of threat to the monopolistic, privately‐owned platforms dominating Western societies today, and even if they were, such a scheme remains vulnerable to the objections of Tiqqun et al. as to the foibles of “social capitalism.”

#### It would never get off the ground.

Moreno-Casas, et al, 22—Department of Applied Economics I, History and Economic Institutions and Moral Philosophy, Social and Legal Sciences Faculty, Rey Juan Carlos University (Vicente, with Victor Espinosa and William Wang, “The political economy of complexity: the case of Cyber-Communism,” https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=4012265, dml)

Cyber-communism is based on computational complexity while advocating the control of the economy. Cockshott and Cottrell are explicit about the goal of controlling the economy throughout all their works. That is to say, the dominant theme in cyber-communism political economy is control, attributing a strong role to the government (table 2). This may challenge the complexity political economy we previously presented, which energetically rejects control and supports cultivation. However, as we showed in the previous sub-section, cyber-communism faces fundamental problems in abstract terms even from a computational complexity view, e.g., self-reference, rendering central planning unfeasible. From this automatically follows that control is likewise impossible, which disarticulates the core of the cyber-communist political economy. Nevertheless, there is still a risk that, from any complexity grounded perspective similar to cybercommunism, one can think that the economy can dispense with elementary institutions such as money or private property rights. Due to this risk, we will elaborate here the fundamental problem of cyber-communism in light of a complexity political economy.

As it can already been inferred, the main issue with cyber-communism is its disregard for institutions. It outlines a socialist system in which private ownership of the means of production and money are abolished, and the state becomes the owner of the means of production while labor certificates perform the role of money for consumer goods. The same happens to the figure of the entrepreneur, which Cottrell and Cockshott want to replace by a combination of expert opinion and democratic methods. They propose this alternative social organization without barely analyzing the relevance of these institutions and the possible consequences of substituting them. They assume that their designed institutions will work even more efficiently than current market institutions. The reason for this disregard for institutions is their skepticism about the evolutionary view of the economy. Cottrell and Cockshott (1997a) criticize Hayek for marking superficial analogies and metaphors in economics from biology. They assert that, while there can be some parallelisms, evolution in biology and evolution in economics differ because the economy acts as a single processor, while this is not the case in biology due to the variety of species. Along the same lines, the authors then conclude that one cannot affirm that the capitalist system results from evolution. They make clear that evolution is not the same as history, and that capitalism is a historical result, not an evolutionary outcome. This is because an authentic evolutionary process, they contend, will require a considerable number of simultaneous economic systems to compete, and, in history, we only had two systems that competed for a short period of time, which is not a statistically valid sample.

Contrary to Cockshott and Cottrell, there is a vast literature on the economy as an evolutionary process, which precisely forms complexity economics. Many authors have shown the advantages of taking metaphors from biological process rather than mechanical process to address economic issues (Hodgson, 1995). One can apply the biological concept of diversity of species as diversity of products in economics to explain, for instance, the cause of wealth (Koppl et al., 2015). Moreover, this evolutionary perspective has usually gone hand in hand with institutionalism. Both combined allow to understand how change takes place in the economy through the evolution of its institutions, conceived as transpersonal coordination mechanisms. These are two perspectives integrating complexity economics and have helped to overcome the restrictive and unrealistic assumptions of neoclassical economics and traditional political economy.

Property rights, money, and entrepreneurship are institutions emerged through a long evolutionary process. As such, they all embody a great amount of factual and tacit knowledge, which means that these institutions have not been consciously created, but spontaneously emerged from the interaction of millions of individuals (Hayek, 1973). They allow transpersonal coordination in complex system notably populated, in the same way that language does (Horwitz, 1996). Consciously removing them or other relevant institutions from the economy, as cybercommunism aims to do, can create harmful effects on coordination among agents, which can impair the emergent process and algorithmic working of the economy.

From this discussion, it has to be clear that any political economy claiming to be based on complexity theory, as cyber-communism does, should take institutions as central, and then cultivation as the dominant theme. It is contradictory to represent a complexity approach and not accounting for institutions in the field of political economy.

5. Conclusion

The introduction of complexity theory into economics can result in paradigmatic shifts. This article has dealt with the main implications of complexity theory for political economy from the two most widespread definitions of complexity in economics: dynamic and computational. In this way, we have elaborated a complexity political economy focused on cultivating the economic system rather than controlling it.

Complexity theory shows that central planning of the economy is impossible, due to the nonequilibrium, nonlinear, or even chaotic dynamics present in the economy. Ultimately, global controlling finds that: (1) optimal parameters cannot be computable due to the problem of selfreference, and (2) the emergent processes feeding economic dynamics are, by definition, not planned or controlled, but spontaneous or self-organized. These findings clash with neoclassical political economy, which beliefs in effective control of the economy due to its equilibrium and mechanistic approach to economic science. Consequently, complexity political economy moves away from mainstream political economy, from its focus on the control of variables, and puts the spotlight on the cultivation of an environment, of institutions and transpersonal mechanisms, which allow the algorithmic operation of the economy and the emergence of new processes. Cultivation, as the central concept for a complexity political economy, warns us that the economy is not a perfect mechanism that can be effectively manipulated without causing harmful consequences, drawing our attention to take care of economic institutions such as private property rights or money.

From this complexity political economy, we have analyzed the political economy of cybercommunism. As shown, despite relying on technological advances in computation and simulation and even sharing a computational complexity view of the economy, cyber-communism advocates 23 the control of the economy. In believing in global optimizations and computation, cybercommunist theory does not realize the noncomputability of optimal outcomes, the problem of self-reference parallel to Gödel’s incompleteness theorems, and the emergent, self-organized processes of the economy. At the same time, it does not recognize the importance of institutions such as private property rights or money and tries to manipulate them without accounting for the dire consequences their control may have for the operation of the economic system. Thus, cybercommunism appears closer to the mainstream, traditional political economy of control than to a complexity political economy of cultivation. Ultimately, complexity theory and complexity political economy show that any implementation of the cyber-communist ideal is doomed to failure.

This work also responds to a more general question: can advances in computer technology ease central planning? As shown, central planning or global optimizations of the economy are not possible in light of complexity theory, not due to a technological or practical issue, but due to ontological and epistemological reasons related to the nature of complex systems and the cognitive limitations of the human mind. In this sense, this article may prompt those who seek to control or model the economy through technology and computation from alternative perspectives to cyber-communism to consider the noncomputability of optimal parameters and the emergent dynamics of the economy, which cannot be fully anticipated. Additionally, the complexity political economy outlined here, emphasizing the notion of cultivation, can be used in future works on political economy aiming to consistently follow the principles of complexity economics. It can also support a great deal of research on the role of institutions as transpersonal mechanisms in the economy, such as agent-based models.

### AT: Don’t Need An Alt

#### They’re responsible for matching up the scope of alt solvency with the scope of their impacts. Presenting concrete solutions improves the alt’s critical purchase and avoids cooption.

Visoka, 19—Associate Professor of Peace and Conflict Studies at Dublin City University (Gëzim, “Critique and Alternativity in International Relations,” International Studies Review, Volume 21, Issue 4, December 2019, 678-704, dml)

Critical IR theory needs to make more space for self-reflexivity and to open up to an epistemic transformation. The preceding discussion demonstrated that although peace and conflict studies are more pluralist than other critical IR branches, they are still affected by paradigmatic and disciplinary divides within IR. They operate in a conflictual theorizing logic that disregards certain ontological, methodological, and epistemological alternatives in order to remain loyal to one particular disciplinarity. For Laura Sjoberg (2017, 163–67), “disciplinarity has a narrowing effect,” suggesting that “an undisciplined IR would free space for more radical critique and more radical experimentation.” Disciplinary encampment among different branches of critical IR has suffocated the search for achievable emancipatory possibilities across a different range of cases. Endorsing alternativity requires a fluid onto-epistemology that would make it possible to bypass the epistemological entrapments caused by rigid academic rules of thought and of knowledge production and by the academic research process. Nonconflictual pathways of research would be beneficial for overcoming paradigmatic contempt, bypassing methodological holism and individualism, and making space for conciliatory heuristics and reality-congruent inquires (see Archer 1995; Hamati-Ataya 2018). Searching for nonconflictual critiques that are embedded in postparadigmatic logic means generating conceptually novel and reality-congruent knowledge about conflict-affected societies and the broader politics of international interventions. This should not be seen as an attempt to discipline the discipline of peacebuilding studies. On the contrary, it would be an attempt to break away from disciplinary entrenchments that have impeded a better understanding of complexity in postconflict societies. It would also be an attempt to avoid the normalization of entrenched research programs and open up the politics of knowledge production on peace, conflict, security, justice, and development.

More broadly, alternativity in critical IR theory needs to be rescued from never-ending conceptual reifications, which have ended up making ontological assentation about the world become completely detached from the world. In this regard, there is a growing realization in IR that “critique is a necessary but secondary task; the priority is to return to practical theory as quickly as possible” (Levine 2012, 69). Recalibrating the purpose of alternativity in critical theory requires recalibrating knowledge production, not only to unmask power relations and the dynamics of dominance and to create space for a politics of resistance but also to generate practical knowledge for political action that challenges, confronts, and disrupts existing power relations and offers alternative solutions for reshuffling social relations on more emancipatory and inclusive terms (see Duvall and Varadarajan 2003, 85; Murdie 2017; Deiana and McDonagh 2018). A feature of critical peace and conflict studies is a congruence between the emancipatory and problem-solving perspectives, which should be predicated on the conciliation of knowledge, the expansion of onto-politics of peace, and the pluralization of epistemological and methodological approaches. The recent methodological work by J. Samuel Barkin and Laura Sjoberg (2017) on interpretive quantification is a promising move toward this much-needed pluralist fertilization within critical theory. In particular, a stronger linkage between criticality, alternativity, and practicality could help critical security, peace, and conflict theories to offer alternatives that would maintain critical impetus while simultaneously strengthening ties to practical and societal problem-addressing solutions. Genealogical studies would blend well with a critical analysis of conceptual and policy alternatives (see Milliken 1999). Statistical analysis with an emancipatory hypothesis coupled with critical analysis would contribute to subverting policy practices and would normalize alternative knowledge about peace, justice, and emancipation.

The recent practice-turn in IR offers new bridges between scholars and practitioners, making it possible to translate critical knowledge into practice without compromising the normativity and criticality of scholarly works (see Bigo 2011). A forum on pragmatism published in this journal has implicitly highlighted the importance of alternativity in understanding global politics and generating impactful knowledge beyond the existing epistemological and methodological divides (see Hellmann 2009). Friedrichs and Kratochwil (2009, 701) have argued for “the orientation of research toward the generation of useful knowledge.” Practicality is essential for generating alternatives. For instance, Jonna Nyman (2016, 142) argues that “a pragmatic, practice-centred approach . . . can help us gain practical knowledge of how security works and understand the value of security better, as well as help us to suggest alternative possibilities.” Similarly, Navnita Chadha Behera (2016, 154) argues: “theorizing in IR needs to step out of the rarefied atmosphere of its academe, develop a healthy scepticism toward its canonical frames, and open up to the possibilities of learning from everyday life and experiences of people and their living traditions and practices.” Practicality shifts the focus from abstract criticality and normativity to contextual critiques that account for everyday practices and interactions. This would be essential for rescuing critique from becoming a postempirical endeavor.

Critical knowledge that engages with policy alternatives “is not only pragmatic, it is also politically enabling: it forces us away from instrumental problem-solving perspectives towards a wider framework of pragmatic thought where narrow instrumental goals are overridden by wider normative and political concerns” (Kurki 2013, 260). Such grounded critiques are crucial in order to expand non-prescriptive alternativity and exploring practical possibilities for social emancipation and change. For Steve Smith (2002: 202), “the acid test for the success of alternative and critical approaches is the extent to which they have led to empirically grounded work that explores the range and variety of world politics.” This would also be congruent with Daniel Levine's (2012, 30) concept of sustainable critique, which entails thinking in both practical and critical terms at once so that “IR could create a sustainably critical perspective on global politics that might then be turned back onto, and made to inform, ongoing policy debates and discourses.” Behera (2016, 154) further maintains that the “state-centric ontology of IR has effectively ended up dehumanizing the discipline in a way so that normally it has little to do with human relations, human needs, and the larger imperatives of humanity.” Generating practical alternatives would therefore require endorsing situated knowledge as an epistemological and methodological basis for any engagement with the real world. The work of feminists such as Donna Haraway (1988, 584) on situated standpoints is also relevant here because they offer “more adequate, sustained, objective, transforming accounts of the world.” Situated knowledge is, mostly, nonrepresentational knowledge, in that it is not firmly mediated through preexisting discourses. In this regard, promoting subjugated knowledge discourses and practices could be central to rejuvenating the emancipatory commitment of critical theory (see Doty 1996).

Situated alternatives could derive from emplaced and embodied knowledge and could have a more emancipatory character as they “bring forth the importance of recognizing, valuing, and employing marginalized voices by working from this perspective, as well as by reshaping research to include marginalized communities as part of knowledge production” (McHugh 2015, 62). For Robson and McCartan (2016, 3), “real world research looks to examine personal experience, social life and social systems, as well as related policies and initiatives. It endeavours to understand the lived in reality of people in society and its consequences.” Milja Kurki's (2013, 245) recent study of democracy promotion has approached alternativity from the perspective of policy provocations, which focus “on not prioritising one or another perspective, but rather on encouraging self-reflection by all practitioners, which in turn is considered as a key condition of seeking adequately pluralism-fostering reforms in concrete policy frameworks.” Kurki (2013, 248–51) further maintains that “instead of relying on objective knowledge and criteria, policy process can and should be attuned to the logic of interpretive, politicised and participatory judgements.” Her study is an excellent example of pragmatic congruence between criticality and alternativity, whereby policy alternatives are not geared toward totally improving or enhancing the current system but openly promote more pluralistic, reflexive, and emancipatory policies for democratization and peacebuilding.

Moreover, for these new grounds of critical alternativity to be introduced in practice, knowledge production should be decentered, decolonized, and “de-methodolised” (see Lisle 2014). R. B. J. Walker (2002, 265) has argued that “the key achievement of supposedly alternative and critical literatures over the past two decades has been to open up at least some possibility of asking questions about the location and character of the political.” As elaborated in this study, knowledge production in peace and conflict studies is predominantly based on Western epistemologies, which are shaped by specific cultures of thought, self-perpetuated epistemological superiority, and codified academic practices. Most of the international scholarship on postconflict societies derives from an unrepresentative body of knowledge, which tries to mediate, deviate, reinterpret, and, consequently, construct a different social reality that is interpreted through different measurements, reference points, and analytical concepts (see Latour 2005). This has greatly limited the possibility for proposing realizable alternatives. Due to these epistemological anomalies, there are growing calls in scholarship to decolonize knowledge from Eurocentric and Western dominance and instead to pursue more pluralist and particularist modes of knowledge (Smith 2012). For instance, Acharya and Buzan (2010, 2) have argued that IR theory should be “an open domain into which it is not unreasonable to expect non-Westerners to make a contribution at least proportional to the degree that they are involved in its practice.” Similarly, Andrew Hurrell (2016, 151) has proposed that “the pathway to a global IR will need to look beyond ‘IR’ and is likely to require new models for organizing social science research and knowledge production.” Decolonized epistemologies of peace would reverse the order of knowledge, placing the local first and then the regional and international as spatial and ontological scales for understanding peace processes (Visoka 2017). They would not operate in isolation but would engage in shaping global IR knowledge. Therefore, a genuine search for achievable alternatives should try to decolonize peace knowledge from Western and Eurocentric frameworks, interrogate decolonized knowledge and agencies, and explore the joint constitution of international intervention and local resistance (see Smith 2012; Memmi 2006). Local scholars often have rich knowledge, but the primary usage of it is not for instrumental purposes or for transferring and sharing with audiences of outsiders. Local knowledge is very much used to respond to narrow practical and everyday interests and needs and, as such, is embedded in the logic of generating sufficient knowledge to respond to specific circumstances.

In the context of peacebuilding, as examined in this article, generating alternatives from the ground up has the potential to bring about more sustainable forms of peace and reconciliation for groups and societies affected by violent conflict. Situated alternatives for emancipatory peace are more prone to avoiding co-optation by positivist and problem-solving epistemic predators, resulting thus in developing pluriversal political and peace orders beyond liberal peacebuilding and other Eurocentric impositions. From this situated perspective, emancipation could take the shape of “the transformation of structures and relationships of vulnerability through localized political action, aimed at the creation of spaces in people's lives so that they are enabled to make decisions and act beyond mere survival” (Basu and Nunes 2013, 69). Emancipatory alternatives would not be universal in their applications because such an attempt is not viable. Rather the focus should be on searching for practical emancipatory possibilities within a given context, time, space, and place (see Fierke 2007, 24). In other words, critiques with an adequate dose of alternativity are more likely to generate globally understandable and locally impactful knowledge. Nevertheless, alternativity does not necessarily have to be predicated on representative views of the world—it can also be a by-product of performing hope and imagined possibilities in global politics. Shapiro (2013, xiv) argues that critical thinking helps to “create the conditions of possibility for imaging alternative worlds.” That said, as the purpose of critical theory is emancipatory change, any alternative theoretical and empirical observation in service of improving the human conditions should generate a morally and practically acceptable standpoint. Because any attempt to establish an alternative interpretation inevitably “empowers a particular social and political standpoint” (Price and Reus-Smit 1998, 261). According to Ní Mhurchú and Shindo (2016, 5), “critique can help us to develop different ways of talking about, evaluating, doing and interrogating the changing nature of politics, relations and experiences of the international in a globalising world.” Hence, critique is inevitably implicated in world-making and, with a much clearer understanding of alternativity, can steer the thrust for world-changing in a more emancipatory, just, and inclusive direction.

Conclusion

Emancipation is a central feature of critical IR debates, but scholars often fail to develop alternatives or solutions achieving emancipation in practice. This article has examined the relationship between criticality and alternativity in IR in order to shed light on some of the most contested issues of critical theory, namely, the epistemological pathways for identifying the inconsistencies and flaws in existing knowledge and practices and the extent to which critical knowledge should generate alternative emancipatory possibilities. The article has argued that alternativity provides an opportunity for critical scholars to remain relevant without being affiliated with positivist logics of inquiry. In unpacking the conceptual contours, the article first explored how different branches of critical IR engage with the episteme of alternativity. The analysis found that although alternativity is often affiliated with problem-solving epistemologies, it has played a major role in shaping critical knowledge in IR. While this is acknowledged and endorsed at the epistemological level by a branch of critical scholars who engage in normative and reconstructive modes of critique, other scholars embedded in deconstructive modes of critique have disregarded the merits of alternativity in IR. The article has argued that, contrary to what is often assumed, alternativity is not incompatible with deconstructive or reconstructive critiques across different subdisciplines of IR. Yet critical IR debates, which have now become the new mainstream in IR, have failed to engage with the episteme of alternativity in a more empirical and practical sense. They preach emancipation but fail to develop tangible emancipatory alternatives.

As a result, there is a growing realization that, without tangible alternativity, critical theory risks losing its normative impetus and its ethical and emancipatory commitment, potentially becoming a post-epistemological vocation without politics. Critical knowledge without a dose of alternativity may examine the causes and consequences of subject matters but could fall short of reaching out to the wider policy community and the affected subjects where power relations reside, thus missing the opportunity to transform the structural, discursive, and performative practices that reproduce violence, inequality, and injustice on human and nonhuman ecology. To bridge this epistemological gap, the analysis in the second part of this article examined how alternativity features in peace and conflict studies, a disciplinary field known for adding normative, empirical, and practical substance to critical IR debates. The analysis offered a conceptual scoping of three modes of critique and alternativity in peace and conflict studies. The three modes of critique showed that a conjunction between criticality and alternativity is possible and that it is necessary to renew the practical and emancipatory potential of critical theory in IR. The three modes of alternativity in peace and conflict studies expose a spectrum of different critiques, ranging from those perspectives that disengage completely from conceptual and empirical alternatives, to more pragmatic and prescriptive approaches.

Critique-without-alternative represents one strand, which tends to avoid offering normative and practical alternatives to their critical reflections aimed at maintaining the conservative and radical impetus of critical theory and dissociating from problem-solving and policy-relevant methods of inquiry. This mode of critique is committed to revealing the weaknesses of peacebuilding interventions but refuses to offer any emancipatory and practical alternative on how to build sustainable peace after violent conflict. If the end goal of critical perspectives is achieving emancipation, then critique should not only be directed toward problematizing dominant discourses, practices, and policies but also needs to envisage political and practical alternatives rooted in ideational and material elements. In turn, the lack of an explicit emancipatory agenda limits their social and political impact and unintentionally validates the existing order. In response to this challenge, a new mode of critique has emerged, namely, critique-as-alternative, which exemplifies the optimal approach. Proponents of critique-as-alternative have remained committee to critical analysis, but most importantly, they have taken up the challenge of offering emancipatory knowledge that has practical relevance for vulnerable societies in global politics. Their main flaw, however, has been their inability to elaborate sufficiently their practical and emancipatory alternatives—a flaw that has opened up space for epistemic contestation and policy co-optation. Finally, the third mode of critique—critique-with-alternative—which is embedded in a positivist, problem-solving, and policy-driven logic of inquiry, offers alternatives that seek either to verify existing knowledge and the existing interventionary order or to reject other critical alternatives.

Looking at different modes of critique through the lens of alternativity in IR's subdiscipline of peace and conflict studies has provided interesting insights on the promise and limits of critical IR in shaping global politics. The analysis found that existing modes of critique have failed to develop elaborative emancipatory alternatives at both the conceptual and the practical levels. To infuse critique-with-alternative with emancipatory elements, expand the epistemological scope of critique-without-alternative, and operationalize further the practical solutions offered by this mode of critique, substantial changes are needed. This article has suggested exploring postparadigmatic approaches of inquiry in order to avoid existing epistemological entrapments and limitations, reclaiming the practical relevance of critical theory through pragmatic, reflexive, and situated alternatives—across the conceptual, normative, and empirical spectrums—and promoting decolonized, bottom-up methods of knowledge production. The existing modes of critique require pursuing more nonconflictual and postparadigmatic epistemologies, embracing situated knowledge and reclaiming and expanding its practical relevance, breaking away from geo-epistemological hierarchies, and opening up to post-Western IR. To conclude, promoting alternativity has the potential to rejuvenate critical scholarship embedded in the ethos of impactful engagement with the world without being co-opted by the policy world. The next challenge for scholars should not be whether alternativity and criticality are congruent but how emancipatory alternatives can renew the social and political purpose of critical theory and make an impact in the real world.

### AT: Ethics/Human Meaning/Value To Life/Etc

#### Technics won’t subjugate humanity—we can adapt. Their impact is doomsaying.

Thierer, 14—senior research fellow at the Mercatus Center at George Mason University (Adam, “Muddling Through: How We Learn to Cope with Technological Change,” <https://techliberation.com/2014/06/17/muddling-through-how-we-learn-to-cope-with-technological-change/>, dml)

These critics worried about the subjugation of humans to “technique” or “technics” and feared that technology and technological processes would come to control us before we learned how to control them. Media theorist Neil Postman was the most notable of the modern information technology critics and served as the bridge between the industrial era critics (like Ellul, Spengler, and Mumford) and some of today’s digital age skeptics (like Evgeny Morozov and Nick Carr). Postman decried the rise of a “technopoly” — “the submission of all forms of cultural life to the sovereignty of technique and technology” — that would destroy “the vital sources of our humanity” and lead to “a culture without a moral foundation” by undermining “certain mental processes and social relations that make human life worth living.” We see that attitude on display in countless works of technological criticism since then.

Of course, there’s been some pushback from some futurists and technological enthusiasts. But there’s often a fair amount of irrational exuberance at work in their tracts and punditry. Many self-proclaimed “futurists” have predicted that various new technologies would produce a nirvana that would overcome human want, suffering, ignorance, and more.

In a 2010 essay, I labeled these two camps technological “pessimists” and “optimists.” It was a crude and overly-simplistic dichotomy, but it was an attempt to begin sketching out a rough taxonomy of the personalities and perspectives that we often seen pitted against each other in debates about the impact of technology on culture and humanity.

Sadly, when I wrote that earlier piece, I was not aware of a similar (and much better) framing of this divide that was developed by science writer Joel Garreau in his terrific 2005 book, Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies — and What It Means to Be Human. In that book, Garreau is thinking in much grander terms about technology and the future than I was in my earlier essay. He was focused on how various emerging technologies might be changing our very humanity and he notes that narratives about these issues are typically framed in “Heaven” versus “Hell” scenarios.

Under the “Heaven” scenario, technology drives history relentlessly, and in almost every way for the better. As Garreau describes the beliefs of the Heaven crowd, they believe that going forward, “almost unimaginably good things are happening, including the conquering of disease and poverty, but also an increase in beauty, wisdom, love, truth, and peace.” (p. 130) By contrast, under the “Hell” scenario, “technology is used for extreme evil, threatening humanity with extinction.” (p. 95) Garreau notes that what unifies the Hell scenario theorists is the sense that in “wresting power from the gods and seeking to transcend the human condition,” we end up instead creating a monster — or maybe many different monsters — that threatens our very existence. Garreau says this “Frankenstein Principle” can be seen in countless works of literature and technological criticism throughout history, and it is still very much with us today. (p. 108)

Theories of Collapse: Why Does Doomsaying Dominate Discussions about New Technologies?

Indeed, in examining the way new technologies and inventions have long divided philosophers, scientists, pundits, and the general public, one can find countless examples of that sort of fear and loathing at work. “Armageddon has a long and distinguished history,” Garreau notes. “Theories of progress are mirrored by theories of collapse.” (p. 149)

In that regard, Garreau rightly cites Arthur Herman’s magisterial history of apocalyptic theories, The Idea of Decline in Western History, which documents “declinism” over time. The irony of much of this pessimistic declinist thinking, Herman notes, is that:

In effect, the very things modern society does best — providing increasing economic affluence, equality of opportunity, and social and geographic mobility — are systematically deprecated and vilified by its direct beneficiaries. None of this is new or even remarkable.” (p. 442)

Why is that? Why has the “Hell” scenario been such a dominant reoccurring theme in past writing and commentary throughout history, even though the general trend has been steady improvements in human health, welfare, and convenience?

There must be something deeply rooted in the human psyche that accounts for this tendency. As I have discussed in my new book as well as my big “Technopanics” law review article, our innate tendency to be pessimistic but also want to be certain about the future means that “the gloom-mongers have it easy,” as author Dan Gardner argues in his book, Future Babble: Why Expert Predictions Are Next to Worthless, and You Can Do Better. He continues on to note of the techno-doomsday pundits:

Their predictions are supported by our intuitive pessimism, so they feel right to us. And that conclusion is bolstered by our attraction to certainty. As strange as it sounds, we want to believe the expert predicting a dark future is exactly right, because knowing that the future will be dark is less tormenting than suspecting it. Certainty is always preferable to uncertainty, even when what’s certain is disaster. (p. 140-1)

Similarly, in his new book, Smarter Than You Think: How Technology Is Changing Our Minds for the Better, Clive Thompson notes that “dystopian predictions are easy to generate” and “doomsaying is emotionally self-protective: if you complain that today’s technology is wrecking the culture, you can tell yourself you’re a gimlet-eyed critic who isn’t hoodwinked by high-tech trends and silly, popular activities like social networking. You seem like someone who has a richer, deeper appreciation for the past and who stands above the triviality of today’s life.” (p. 283)

Another explanation is that humans are sometimes very poor judges of the relative risks to themselves or those close to them. Harvard University psychology professor Steven Pinker, author of The Blank Slate: The Modern Denial of Human Nature, notes:

The mind is more comfortable in reckoning probabilities in terms of the relative frequency of remembered or imagined events. That can make recent and memorable events—a plane crash, a shark attack, an anthrax infection—loom larger in one’s worry list than more frequent and boring events, such as the car crashes and ladder falls that get printed beneath the fold on page B14. And it can lead risk experts to speak one language and ordinary people to hear another. (p. 232)

Put simply, there exists a wide variety of explanations for why our collective first reaction to new technologies often is one of dystopian dread. In my work, I have identified several other factors, including: generational differences; hyper-nostalgia; media sensationalism; special interest pandering to stoke fears and sell products or services; elitist attitudes among intellectuals; and the so-called “third-person effect hypothesis,” which posits that when some people encounter perspectives or preferences at odds with their own, they are more likely to be concerned about the impact of those things on others throughout society and to call on government to “do something” to correct or counter those perspectives or preferences.

Some combination of these factors ends up driving the initial resistance we have see to new technologies that disrupted long-standing social norms, traditions, and institutions. In the extreme, it results in that gloom-and-doom, sky-is-falling disposition in which we are repeatedly told how humanity is about to be steam-rolled by some new invention or technological development.

The “Prevail” (or “Muddling Through”) Scenario

“The good news is that end-of-the-world predictions have been around for a very long time, and none of them has yet borne fruit,” Garreau reminds us. (p. 148) Why not? Let’s get back to his framework for the answer. After discussing the “Heaven” (optimistic) and “Hell” (skeptical or pessimistic) scenarios cast about by countless tech writers throughout history, Garreau outlines a third, and more pragmatic “Prevail” option, which views history “as a remarkably effective paean to the power of humans to muddle through extraordinary circumstances.”

That pretty much sums up my own perspective on things, and in the remainder of this essay I want sketch out the reasons why I think the “prevail” or “muddling through” scenario offers the best explanation for how we learn to cope with technological disruption and prosper in the process.

As Garreau explains it, under the “Prevail” scenario, “humans shape and adapt [technology] in entirely new directions.” (p. 95) “Just because the problems are increasing doesn’t mean solutions might not also be increasing to match them,” he rightly notes. (p. 154) As John Seely Brown and Paul Duguid noted in their excellent 2001, “Response to Bill Joy and the Doom-and-Gloom Technofuturists”:

technological and social systems shape each other. The same is true on a larger scale. […] Technology and society are constantly forming and reforming new dynamic equilibriums with far-reaching implications. The challenge for futurology (and for all of us) is to see beyond the hype and past the over-simplifications to the full import of these new sociotechnical formations. Social and technological systems do not develop independently; the two evolve together in complex feedback loops, wherein each drives, restrains and accelerates change in the other.

It is this process of “constantly forming and reforming new dynamic equilibriums” that interests me most. In a recent exchange with Michael Sacasas – one of the most thoughtful modern technology critics I’ve come across — I noted that the nature of individual and societal acclimation to technological change is worthy of serious investigation if for no other reason that it has continuously happened! What I hope to better understand is the process by which we humans have again and again figured out how to assimilate new technologies into their lives despite how much those technologies disrupted our personal, social, economic, cultural, and legal norms.

In a response to me, Sacasas put forth the following admonition: “That people eventually acclimate to changes precipitated by the advent of a new technology does not prove that the changes were inconsequential or benign.” This is undoubtedly true, but it does not undermine the reality of societal adaptation. What can we learn from this? What were the mechanics of that adaptive process? As social norms, personal habits, and human relationships were disrupted, what helped us muddle through and find a way of coping with new technologies? Likewise, as existing markets and business models were disrupted, how were new ones formulated in response to the given technological disruption? Finally, how did legal norms and institutions adjust to those same changes?

Of course, this raises an entirely different issue: What metrics are we using to judge whether “the changes were inconsequential or benign”? As I noted in my exchange with Sacasas, at the end of the day, it may be that we won’t be able to even agree on a standard by which to make that judgment and will instead have to settle for a rough truce about what history has to teach us that might be summed up by the phrase: “something gained, something lost.”

Resiliency: Why Do the Skeptics Never Address It (and Its Benefits)?

Nonetheless, I believe that while technological change often brings sweeping and quite consequential change, there is great value in the very act of living through it.

In my work, including my latest little book, I argue that humans have exhibited the uncanny ability to adapt to changes in their environment, bounce back from adversity, and learn to be resilient over time. A great deal of wisdom is born of experience, including experiences that involve risk and the possibility of occasional mistakes and failures while both developing new technologies and learning how to live with them. I believe it wise to continue to be open to new forms of innovation and technological change, not only because it provides breathing space for future entrepreneurialism and invention, but also because it provides an opportunity to see how societal attitudes toward new technologies evolve — and to learn from it. More often than not, I argue, citizens have found ways to adapt to technological change by employing a variety of coping mechanisms, new norms, or other creative fixes.

What we’re talking about here is resiliency. Andrew Zolli and Ann Marie Healy, authors of Resilience: Why Things Bounce Back, define resilience as “the capacity of a system, enterprise, or a person to maintain its core purpose and integrity in the face of dramatically changed circumstances.” (p. 7) “To improve your resilience,” they note, “is to enhance your ability to resist being pushed from your preferred valley, while expanding the range of alternatives that you can embrace if you need to. This is what researchers call preserving adaptive capacity—the ability to adapt to changed circumstances while fulfilling once core purpose—and it’s an essential skill in an age of unforeseeable disruption and volatility.” (p. 7-8, emphasis in original) Moreover, they note, “by encouraging adaptation, agility, cooperation, connectivity, and diversity, resilience-thinking can bring us to a different way of being in the world, and to a deeper engagement with it.” (p. 16)

Even if you one doesn’t agree with all of that, again, I would think one would find great value in studying the process by which such adaptation happens precisely because it does happen so regularly. And then we could argue about whether it was all really worth it! Specially, was it worth whatever we lost in the process (i.e., a change in our old moral norms, our old privacy norms, our old institutions, our old business models, our old laws, or whatever else)?

As Sacasas correctly argues, “That people before us experienced similar problems does not mean that they magically cease being problems today.” Again, quite right. On the other hand, the fact that people and institutions learned to cope with those concerns and become more resilient over time is worthy of serious investigation because somehow we “muddled through” before and we’ll have to muddle through again. And, again, what we learned from living through that process may be extremely valuable in its own right.

Of Course, Muddling Through Isn’t Always Easy

Now, let’s be honest about this process of “muddling through”: it isn’t always neat or pretty. To put it crudely, sometimes muddling through really sucks! Think about the modern technologies that violate our visceral sense of privacy and personal space today. I am an intensely private person and if I had a life motto it would probably be: “Leave Me Alone!” Yet, sometimes there’s just no escaping the pervasive reach of modern technologies and processes. On the other hand, I know that, like so many others, I derive amazing benefits from all these new technologies, too. So, like most everyone else I put up with the downsides because, on net, there are generally more upsides.

Almost every digital service that we use today presents us with these trade-offs. For example, email has allowed us to connect with a constantly growing universe of our fellow humans and organizations. Yet, spam clutters our mailboxes and the sheer volume of email we get sometimes overwhelms us. Likewise, in just the past five years, smartphones have transformed our lives in so many ways for the better in terms of not just personal convenience but also personal safety. On the other hand, smartphones have become more than a bit of nuisance in certain environments (theaters, restaurants, and other closed spaces.) And they also put our safety at risk when we use them while driving automobiles.

But, again, we adjust to most of these new realities and then we find constructive solutions to the really hard problems – yes, and that sometimes includes legal remedies to rectify serious harms. But a certain amount of social adaptation will, nonetheless, be required. Law can only slightly slow that inevitability; it can’t stop it entirely. And as messy and uncomfortable as muddling through can be, we have to (a) be aware of what we gain in the process and (b) ask ourselves what the cost of taking the alternative path would be. Attempts to through a wrench in the works and derail new innovations or delay various types of technological change are always going to be tempting, but such interventions will come at a very steep cost: less entreprenurialism, diminished competition, stagnant markets, higher prices, and fewer choices for citizens. As I note in my new book, if we spend all our time living in constant fear of worst-case scenarios — and premising public policy upon such fears — it means that many best-case scenarios will never come about.

### AT: K Isn’t Deterministic

#### It’s not just about their intent—their point is that the alt spills over in unpredictable ways, our point is that one of the more predictable ways is that it can all too easily tilt into deterministic pessimism!

Loeb, 21—Ph.D. candidate at the University of Pennsylvania (Zachary, “Theses on Technological Pessimism,” <https://librarianshipwreck.wordpress.com/2021/07/08/theses-on-technological-pessimism/>, dml)

Scratch its surface and it becomes apparent fairly rapidly that most technological pessimism has less to do with technology than it may initially appear. Of course, the objects and systems that are held up for critique may be clearly technological, but the goals of the critiques are to pierce deeper. Technological pessimism is social critique disguised as technological critique. Thus, what may appear as a tirade against nuclear weapons can most fully be understood as a tirade against the dangerous union of military and industry, what may look like a woebegone assessment of the technological forces exacerbating climate change can best be understood as a way of discussing the economic drives that led to the particular technological status, and commentary on social media platforms has less to do with retweets and likes than it has to do with an attempt to describe what happens to a society that becomes fixated on retweets and likes. Of course, technological pessimism is largely about technology (it’s right there in the name!); however, directing attention to a technology that appears at the surface level is a way of getting at deeper issues.

Whereas technological optimism focuses its hopes on the idea that technology provides an easy way of getting around complex social/historical/economic/political challenges, technological pessimism bases its dread in an understanding that complex social/historical/economic/political challenges cannot be instantly solved by new technology. Furthermore, technological pessimism draws attention to the myriad ways in which, far from being a panacea for social/historical/economic/political issues, new technologies have a tendency to reify and deepen these already existing problems. Rather than acting as though new technologies spring miraculously fully formed from the heads of benevolent Silicon Valley tinkerers (who had no history prior to unveiling the new gadget), technological pessimism fixates on the ways in which the technologies a society produces tend to be reflections of the social/historical/economic/political forces already at work in those societies. This can certainly box technological pessimists in, making it so that they are unable to perceive the ways in which the affordances of certain technologies can potentially challenge those powerful forces, but it maintains a starting point at which the assumption is that new technologies create a perception of change while simultaneously preserving the dominant relationships in a society.

Technological pessimism has much to say about the specific problems with particular technologies, but beneath the discussion of facial-recognition software operates an attempt to draw attention less to the technology itself and more to the ways in which this particular technology is a manifestation of, and will be used in order to, strengthen the already powerful forces in a society.

Like Toto in Oz, technological pessimism looks for “the man behind the curtain”

Technology does not “just happen.” Certainly, the crowd pleasing mythologies that tech companies like to spin often focus on serendipitous moments that led to something suddenly appearing fully formed in the mind of a programmer, engineer, or executive, but the history of technology is not one in which a person goes for a walk in the woods and discovers the laptop or the helicopter or the [insert whatever complex technology you like] sitting there waiting for them. The process by which technologies come into being is often a slow iterative process, frequently involving large teams of people who work on particular challenges with particular goals in mind. The stories that we are told about technological development in popular movies and high school textbooks sing the praises of the “eureka!” moments of lone inventors, but when we truly consider the history of many of the most significant technologies surrounding us the story looks a lot more like massive government investment flowing to a wide variety of individuals with much of this money producing relatively little of worth even as a couple of very well-publicized successes make it all seem worthwhile. This is not the time or place to fully recount the history of computer machinery (or the Internet), suffice to say the public version of that story could benefit from less focus on computer sages like Steve Jobs and more focus on the origins of computers systems like SAGE.

Technological forces, particularly powerful and complex technological forces, have a tendency to present themselves like a floating head surrounded by flames, speaking in a booming voice. These technologies appear mighty and complex, and cloak themselves behind arcane technical language that makes them appear unknowable except to a select few. Yet, technological pessimism, draws attention the ways in which behind the curtain you can usually find a man (or a bunch of men) pulling the switches.

Here technological pessimism often works to shift the attention off of the technology itself and onto the human beings who are behind the technology. When it comes to technology it can pretty much never be claimed that “it had to be this way,” instead it “is this way” as a result of the decisions that were made by particular people. These are not mystical, unknowable, reasons that can only be understood by a sagacious high priesthood, rather they have a tendency to be banal choices made by people who were interested in maximizing profit or fulfilling a government contract or just taking the quickest route to make sure that something would work. Granted, in many cases the answer to the question “why is it like this?” turns up a distressing answer insofar as the humans who were creating a certain thing just couldn’t be bothered to fully think through the potential implications.

The “good news” of technology is something that technological pessimism refuses to accept at face value, and as a result technological pessimism has a tendency to look for the human faces behind it.

Manifestations of technological pessimism reveal the anxieties of the particular moment in which they occur

Throughout much of the twentieth century the force that generated the greatest sustained outpouring of technological pessimism was concern regarding nuclear weapons. The sense that humanity had achieved godlike power without developing a similar level of responsibility fueled a sentiment that even if humanity were not to destroy itself with these weapons of awesome might, that the very existence of these weapons still meant that humanity now found itself in a changed world. And that was a world in which the survival of the species, and the survival of civilization, operated forevermore under the shadow of the destructive force of humanity’s technological achievements. As a particular set of technologies on which to fixate, nuclear weapons provided thinkers with a robust set of reasons for dread. For nuclear weapons represented technologies at the zenith of techno-scientific research, as the arms race meant that new developments in these technologies were constantly being pursued. To many people, the arrival of these weapons could be seen as representing a clear dividing line between the past and the present, and many people worried that the calamitous potential of these weapons quickly became normalized. After all, there might have been some military planners and defense intellectuals who argued that a nuclear war would not truly result in the destruction of all life…but even the optimistic predictions that one side could win a nuclear war were still couched in predictions of total annihilation of the other. Thus, nuclear weapons were a perfect foil for technological pessimism: a clear technological threat, to which more and more people gradually came to be inured. Furthermore, the fact that a nuclear war (thankfully) never occurred did little to genuinely diminish the underlying point: that should such an even happen the results of this technologically heightened conflict would be catastrophic.

Granted, in the twenty-first century we don’t hear quite as much about nuclear weapons. This is not to say that the danger has ceased to exist. Indeed, these weapons are still sitting in their silos, and the destructive power of many of these weapons is still mighty. And yet, they are no longer the object of technological anxieties du jour.

All of which is to say, technological pessimism largely responds to the prominent technologies of the day in which the particular manifestations of technological pessimism can be found. Post-Cold War the technologies that have occupied the center of technological pessimism tend to be the vast web of technologies that fall under the broad heading of information technologies (computers, the Internet, smartphones, social networks, and so forth). Though much technological pessimism also focuses its attention on the ways in which the climate crisis has been driven by technological forces. Importantly, this is not to suggest that no one cares about nuclear weapons anymore, nor for that matter is it to say that the technological pessimists of the mid-twentieth century were only concerned about nuclear weapons. It is essential to note that the technological pessimists of the mid-twentieth century wrote/spoke/argued extensively about the then nascent “computer dominated society,” technologically driven consumerism, and the ways that new media technologies threatened to undermine society. Nevertheless, in any particular historic moment, the particular technologies about which there is the most easily detectable manifestations of technological pessimism are going to be those about which there is already an ambient level of social concern and social awareness.

Technological pessimism and Luddism are not the same thing

Those who give voice to technologically pessimistic views quickly become accustomed to having their critiques met with accusations of “Luddite.” After all, the accusation that any criticism means that one is an enemy to any and all technology, that you really want everyone to go back to living in caves, and that you really just want to pull out a sledgehammer and smash the machines—are the types of popular retorts that blunt any criticism of technology by absurdly attacking the maker of the critiques instead of the content of those critiques. And there is no term of derision that a techno-optimistic society likes to hurl about more than “Luddite.” To be absolutely clear, the history of the Luddites is an important one to study, and the Luddite risings need to be placed into a broader history of “collective bargaining by riot” (to borrow Hobsbawm’s phrase). The Luddites were not a legion of uninformed fools, rather they were an assembly of skilled workers who resisted machinery not because they were opposed to all machinery but rather attacked specific machines in specific contexts because they recognized that these machines were to be used to destroy their standard of living. Or, to put it plainly, the Luddites were workers protecting their livelihoods. There have been many attempts throughout the years (including currently) to reclaim the mantel of the Luddites and to restore the Luddites to a place of honor in the history of labor—and such efforts are to be cheered.

Luddism is an important tendency in the intersection between labor history, the history of technology, and broader history. And Luddism may well be a potentially powerful force for resistance, but Luddism is not exactly the same thing as technological pessimism. Some individuals may find that their own beliefs can accommodate some mixture of both—as they are not fundamentally opposed beliefs—but they are not synonymous.

Granted, the problem here is largely related to the way in which the meaning of “Luddism” has become somewhat difficult to easily define at a point in time at which many different groups have sought to claim Luddism as their own. With a further complication lingering in the background being those who try to carefully use the term Luddism only to describe a particular set of ideas and beliefs held by specific people in a specific moment. Suffice to say, at risk of oversimplification, many manifestations of Luddism tend to be focused on technology as a site for labor and political struggles. Those who would fly the standard of General Ludd often emphasize that the Luddites were not opposed to technology (as such), but they were opposed to certain technologies being used in a way that all of the benefits flowed to the bosses instead of the workers. It is an indelicate point to make, but in many ways Luddism is technologically optimistic, for it often posits that the problem is not the technology itself but those who are in control of the technology. Indeed, one of the reasons why the Luddites have been appealing to many left-wing thinkers is the way in which they represent a legacy that asks “what if the machines were controlled by the workers, and used to benefit their lives instead of simply enriching the factory owners?” Even as technological pessimism pays attention to economic conditions, and recognizes the ways in which it matters who is in control of the machinery, technological pessimism takes an attitude wherein sometimes the problem really is the machinery. For technological pessimism, who runs the machines (and to what end) matters, but there are also cases where there are certain technologies that are themselves the problem regardless of who is using them. Of course, there are certain strands of Luddism that do advance exactly this argument (Winner’s “epistemological Luddism” seems to fit nicely into such a category), but not all of them.

Luddism and technological pessimism can peacefully coexist in a single mind and a single heart, but in discussions over what to do with certain technologies there is a not insignificant difference between saying “the workers need to run it” and saying “we need to dismantle it completely.”

For the most part, technological pessimism (and technological pessimists) would rather be called something else

Generally speaking, people don’t like to be accused of being pessimistic. There is a cultural bias (at least in the US) in favor of positivity, thinking hopefully, and believing that tomorrow will be better than today. We are told to smile more, not to frown more. Airport bookshelves are filled with bestsellers encouraging people to think how lucky they are to be alive today, with works pushing people to live their best lives, and jeremiads that success can be yours if you are just willing to master these seven habits! Such optimism is not only the domain of cloying books and social media posts that earn eye-rolls from the world-weary. Narratives that frame history as a story of slow (fragile) progression, council hope and warn against despair. While pessimism is framed as the great foe of activist movements and struggles insofar as it is thought that a pessimistic attitude leads to apathy and lethargy. Or, to put it bluntly, pessimists make bad party guests, they make bad dates, and they tend to make people feel bad by suggesting that things aren’t going to work out for the best. We are smart enough to scoff at the excessive optimism of the Panglosses of the world, but most of us would still rather share a drink with Pangloss than with someone who holds the complete opposite views.

In other words, technological pessimism (and technological pessimists) tend not to identify themselves as technological pessimists or what they are engaging in as technological pessimism. For the mere invocation of “pessimism” is often enough to cause other people to stop listening, and because those who mention pessimism quickly tire of the Gramscian retort that pessimism of the intellect is all well and fine just so long as they remember to maintain optimism of the will. Perhaps this is why so many technological pessimists prefer to use the more anodyne descriptor of “critic,” for that is an umbrella term that can so comfortably include different viewpoints without resulting in immediate pigeon holing. The terms we use to define ourselves often become the terms that others use to box us in, and technological pessimists are right to worry that the “pessimist” label draws attention to their negative critiques while ignoring the positive elements of their views. You can be pessimistic about technology, but optimistic about social movements. You can be pessimistic about consumer gadgets, but be optimistic about cultures of repair and reuse. And you can be pessimistic about “authoritarian technologies,” while still being optimistic about “democratic technologies.”

As it is not a clearly defined ideology (you can’t really point to a manifesto for this), technological pessimism is a label that many individuals remain hesitant to genuinely embrace. This is not to castigate or ridicule individuals who would rather not call themselves, or what they do, technological pessimism—rather it is to note the simple fact that in cultures where techno-optimism is a belief system that permeates across the public and political spectrum, it isn’t really a surprise that people would prefer not to call themselves technological pessimists.

While technological pessimism is thoroughly political, it does not easily fit into “left” or “right”

Placing technological pessimism into the quadrant map of political beliefs is not an easy task. As a viewpoint that tends to be skeptical of the idea of progress, it might seem that technological pessimism is a right-wing set of beliefs. As a viewpoint that tends to focus on the way in which technological systems retrench already existing power relations, it might seem that technological pessimism is a left-wing set of beliefs. That technological pessimism worries about the way that technology has despoiled the planet—exacerbating climate change, and with the environmental cost being born most heavily by those who do not get to enjoy the benefits of these technologies, it might seem that technological pessimism is a left-wing set of beliefs. To the extent that this same level of environmental concern (matched as it often is with a certain pining for an idealized past of fewer machines) can devolve into a sort of romanticism, it might seem that technological pessimism leans to the right. And that technological pessimism dares to suggest that all is not well in the world, makes it quite clear that it does not belong to the political center.

Technology is a site of political contestation. And being the ideology that claims technology is much more complex than being the ideology that claims social media. At the present moment forces on the political left and forces on the political right are united in turning a distrustful gaze towards certain tech platforms out of Silicon Valley—but both political wings remain committed to being the side that can best steward technology. It is hard to easily fit technological pessimism into the left or into the right, but techno-optimism is a tendency that is on full display on the left, right, and in the center. As the dominant attitude towards technology, techno-optimism is a stance that left, right, and center all want to claim. After all, techno-optimism is what gives regular people the promise that they will be able to partake in the pleasure and privileges of technological advancement, and political forces on the left, right, and center all want to be the bestowers of those benefits. Couched in techno-optimism: the left puts forth a vision in which technological progress can be used to more equitably distribute power and the plenty created by technological systems; the right puts forth a vision in which technological progress can be used to maintain the power and authority of the dominant power groups (who it views as the only ones who can truly command technology), and the center holds the view that steady technological advancement is the best way of maintaining the delicate balance where the ship keeps sailing (without improving conditions in steerage). Technological pessimism does not fit in particularly easy here.

There is nothing apolitical about technological pessimism, but in a world in which most politics are infused with techno-optimism, it is impossible to easily shoehorn technological pessimism into one side of the political perspective. It may well be that the core focus on a critique of power (and the desire to center human beings) pushes technological pessimism towards the left, but goodness knows the last thing that many leftists want to be accused of is being pessimistic about technology.

There is a danger that technological pessimism can easily tilt into technological determinism

Simply defined, technological determinism is the belief that “technology drives history.” This is an idea that is not the property of any single group or ideology. Indeed, this sort of attitude towards technology is one that can be widely detected amongst a variety of groups in the world today as well as in the past. Granted, one often stumbles across a sort of crass technological determinism whenever one encounters headlines that say that a certain technology “will” do something in the next five years, that a certain technology “is” inevitable, or when the market juicing comments of a CEO regarding their companies next big product are echoed uncritically. Nevertheless, the basic idea of technological determinism is that technology is the autonomous conductor and it is driving this train speedily down iron tracks that are going in one very particular direction. Technological optimists have a tendency to believe that those tracks are going to take the passengers sitting in the cabin cars to a utopia of technological plenty, while technological pessimists have a tendency to believe that those tracks are going to take the passengers to either a high-tech dystopia of mass-produced distractions that hide authoritarian surveillance or a desolate wasteland.

Technological pessimism may seek to maintain a more critical attitude towards technology, basing much of its critique in a barbed response to the idea that technological forces are inevitably going to lead to paradise…but in the process technological pessimism can fall victim to the flipside of this same sort of idea of inevitability. With the main difference being that where technological optimists think that the high-tech paradise is inevitable, technological pessimists think that the wasteland is inevitable.

Vitally, this is not to claim that all technological pessimism (or all technological optimism) falls victim to technological determinism, but this is a major risk. Technological pessimism often draws attention to the complexity and contingency that can be found in the history of technology; however, sometimes this flexibility vanishes in order to suggest that certain technologies have made certain results inevitable. Granted, a major feature of much technological pessimism is to draw attention to the ways in which many technological systems have been constructed to be deterministic. The retort could take the form of saying that “it isn’t technological determinism to highlight the ways in which certain technologies have been designed to remake society in their own images.” And here technological pessimists could point to the ways in which a world in which nuclear weapons exists is one in which massive technical/political/economic/bureaucratic systems have been developed, and must be maintained, in order to oversee this technological order. Or, on a less apocalyptic note, the ways in which mass computerization eventually reaches a point at which participating in society requires individuals to make use of these technological systems (whether they like it or not). When a society reaches a point that it becomes a sign of privilege to opt out of a particular technology, it is usually a fairly decent sign of how that technology is playing a determining role in society. Thus, technological pessimism responds to charges of technological determinism by drawing attention to the ways in which technologies, as they grow in power, come to remake societies in their own technological image.

Noting the ways in which technologies, and large technological systems can themselves be deterministic is doubtless an important point, and a thorny matter with which to contend. And while much technological pessimism attempts to avoid the pitfalls of simplistic technological determinism, moments of frustration can easily give rise to treating as inevitable that which has not been carved into steel.

Technology is not itself the conductor, different humans in the engine car could still switch the tracks, or agitated passengers could still pull the emergency brake, and none can say with complete certainty if that haze in the distance is steam from the baths or smoke from the ruins.

### AT: IR Scholarship Ks

#### Rejecting IR scholarship as praxis creates openings for far-right cooption. There is no single disciplinary impulse within IR.

Michelsen, 21—Department of War Studies, School of Security, King’s College London (Nicholas, “What is a minor international theory? On the limits of ‘Critical International Relations’,” Journal of International Political Theory, Vol 17, Issue 3, 2021, dml)

The problem of synthesis stalks all self-defining Critical approaches to IR. Defining the terms of reference for intellectual dissidence in relation to IR’s ‘disciplinary crisis’, as the poststructuralists did in viewing critique as a function of disciplinary marginality, created conditions ripe for viewing any competitor theory as problematic to the degree that they can be deemed insufficiently minor (Whitehall, 2016). The idea that critique necessitates moving ‘beyond IR’ as an inherently majoritarian project has become a widely expressed trope. The result is that Critical IR theorists now engage in increasingly virulent disagreements over the political and ethical implications of disciplinarity itself. In perpetual abeyance, claimants to Critical IR become hostages to a continuous risk of being exposed as insufficiently pure of the (modernist, racist, colonial, patriarchal, heteronormative, positivist, capitalist) traces of ‘the major literature/discipline’. At the same time, Critical IR scholars who advocate for a disciplinary exit in search of ‘more Critical’ inter-disciplines have found themselves wrestling with the charge of pre-judgement: Since they appear to know what ‘Being Critical’ will look like after de-disciplinarisation, critique takes the form of testing whether other scholars meet these pre-given criteria (Holden, 2006; Howell and Richter-Montpetit, 2020).

This stream in contemporary IR scholarship ignores the manners in which minor theories, far from tending towards alliances, are often set to contradictory political and ethical purposes. And that the visions of world politics created by scholars ‘moving beyond’ disciplinary IR can be just as problematic as visions already settled within the discipline. Contemporary political and social movements borrow intellectual resources from various (once or still) minor theoretical traditions in IR to think against a ‘Globalist’ world order, incorporating the Gramscian position that ‘politics is downstream from culture’, the ideal of a transgressive emancipatory identity, and the critique of neo-colonialism (Love, 2017; Nagle 2017). The philosopher Alain De Benoist wrote his manifesto for the New Right in the year 2000 with the aim of challenging the oppressive implications of major international theories, especially Liberalism, borrowing widely from resources of minor intellectual critique (de Benoist and Champetier, 1999). This theory is marginal in disciplinary IR, but influential amongst populist politicians like Putin, Trump, Orban, Salvini and Le Pen, as well as online communities of Race Realists, western chauvinists, and white nationalists. It proposes that Liberalism destroys the autonomy of ethnicities and cultures, and that the history of the west has been one of ongoing cultural as well as political colonialism. De Benoist’s argument is that the project of decolonisation is incomplete, and continues through international aid and UN-led Liberal paternalism.

The answer proposed by the New Right is to restore a truly independent status to diverse cultures and indigenous world-views in International Relations, and suggest that people belonging to these ‘birth-cultures’ must actively work towards their national and cognitive emancipation from all the baggage of Liberal modernity, if necessary, through violently closing borders. The New Right claims its intellectual marginality vis-à-vis Liberalism or Globalism (understood as the ideological representative of modernism in international thought) is a marker of its virtue. The New Right is not, however, widely viewed as a ‘Critical ally’ of Decolonial IR theory.

A claim to minor theoretical status is also visible amongst reactionary theorists of gender, including online groups of men’s rights activists, western chauvinist militias like the Proud Boys, or traditionalist ‘family values’ movements (Nagle, 2017). These groups develop an operative concept of the radical intellectual margins as central to their understandings of critique, and of the emancipatory relationship which their critique has to hegemonic theoretical frameworks that they perceive as oppressing them: Liberalism or ‘Cultural Marxism’ (Nagle, 2017). These actors see their critiques of what they term ‘gender ideology’ as part of a necessary escape from the straightjacket of modernist categories, currently hegemonic in contemporary academia. In other words, the belief that transgressive or marginal theory is emancipatory has diverse advocates, whose antimodernism or anti-hegemonism comes with divergent attitudes to gender, race, culture, economics, social, political and international organisation.

The sociological implications of this point were anticipated, but not fully developed, by Katz (1996: 488), who noted that:

‘talk of exclusion can lead to an unsavory hierarchy of marginalization – a kind of competitive victimology – and even to the cul-de-sac of an essentialist identity politics. Notions of exclusion are all about, one might even say tautologically about, position, and if we are not careful they can lead to relativist accounts that offer little of practical value. And they can be disingenuous – proclamations of exclusion by scholars who are quite included’.

The historical moment facing critique calls us to recognise that minor theories infer no allied ethics or politics. There is no cohesive and abiding sovereign ‘logic of modernity’ that forms the superstructure of disciplinary IR, and gives assurance that the postdisciplinary avant-guard will share an understanding of virtue. The romanticism characteristic of self-describing Critical intellectual cultures that arose in IR in the immediate Post-Cold War context must now be reconsidered. Many of the same intellectual tools are now being effectively mobilised by reactionaries, racists and gender absolutists. Contemporary reactionaries have read their Deleuze, their Gramsci, their Derrida and Foucault (see Land, 2012), and they are cognisant of the discursive logic and rhetorical power of, for example, concepts of exclusion, identity, precarity, marginality, hegemony, the avant-guard, victimhood and indigeneity (see Michelsen and De Orellana, 2019).

The challenge facing scholars in IR who seek to write in the service of vulnerable groups, like migrants lacking a safe home state, those who do not fit with heteronormative gender roles, or the victims of racism, is that their reactionary theoretical interlocutors have recognised the power in claiming to be uniquely reflexive critics, intellectually marginal vis-à-vis dominant theoretical assumptions about IR. The category ‘Critical IR’ provides no tools by which to counter these relativistic arguments. In this context, the belief that ‘Being Critical’ requires a minoritarian exit from disciplinary IR may be a distraction from developing methodologically and epistemologically rigorous critiques, that can be communicated as such. Faith in the emancipatory intellectual margins brings to mind Latour’s (2004: 225) worry that self-describing ‘Critical’ scholars today are like ‘those mechanical toys that endlessly make the same gesture when everything else has changed around them’.

### AT: Liberalism Ks

#### Sweeping rejections of liberal knowledge miss the mark empirically and fall short even under their own framework. The alt is silent on critical questions of actor and mechanism, so it gets coopted to serve the reformist ends they critique.

Chandler, 17—Department of Politics & International Relations, University of Westminster (David, “The Pragmatic Critique,” *Peacebuilding: The Twenty Years’ Crisis, 1997-2017*, Chapter 2, pp 21–42, SpringerLink, dml)

At the core of the ‘pragmatist’ and ‘political’ critiques of ‘liberal’ peacebuilding was a critique of liberal universalist aspirations rather than a critique of the new international hierarchies and divisions based on the institutionalisation of the divide between ‘liberal’ peacebuilders and ‘non-liberal’ Others. The critique reflected the ease with which ‘liberalism’ had become a ‘field of adversity’, through which both policy reformers and radical critics could both stake out their positions. The construction of a liberal ‘field of adversity’ had little relation to policy realities. This was reflected in the fact that, while there was a consensus on the view that Western policies were problematic in that they were too ‘liberal’, there was much less attention to how the problems of the postcolonial world might have been alternatively addressed. Here, as discussed below, the discursive critique of liberal peacebuilding unfortunately had very little to offer and merely established the conceptual basis for today’s pragmatic consensus.

BEYOND THE CRITIQUE OF THE LIBERAL PEACEBUILDING?

It would appear that the ostensibly more radical or ‘political’ critics, those who drew out the problematic nature of power relations, in fact, had very little to offer as a critical alternative to the policies of intervention and peacebuilding, other than a scaling back of the possibilities of social change. The leading ‘political’ critics of liberal peacebuilding, like Mark Duffield and Michael Pugh – working through critical theoretical frameworks which problematised power relations and highlighted the importance of difference – suggested that the difference between the liberal West and the non-liberal Other could not be bridged through Western policymaking. For Pugh, as we have seen above, taking critical theory to its logical conclusion, capitalist rationality was itself to be condemned for its universalising and destabilising impulses. Similarly, for Duffield, it seemed that the problem of hegemonic relations of power and knowledge could not be overcome, making any projection of the ideals of development or democracy potentially oppressive (2007, pp. 215–34). Oliver Richmond systematised these critiques, bringing them within the radical pragmatist perspective, highlighting the problems of the disciplinary forms of knowledge of liberal peacebuilding approaches and suggesting that while it may be possible to go beyond them through the use of post-positivist and ethnographic approaches – enabling external interveners to have a greater access to the knowledge of ‘everyday life’ in non-liberal societies being intervened in – any attempt to know, rather than merely to express ‘empathy’, was open to hegemonic abuse (see 2008a, p. 157).

Without a political agent of emancipatory social change, the radical ‘political’ critiques of liberal peacebuilding, which drew upon the modernist perspectives of critical Marxist or Foucauldian theory, could not go beyond the bind which they had set themselves, of overcoming hegemonic frameworks of knowledge and power. In fact, it could be argued that these critical approaches, lacking the basis of a political subject to give content to critical theorising, ultimately took an uncritical approach to power. Power was assumed rather than theorised, making the limits to power appear merely as external to it. It was assumed that there was an attempt to transform the world in liberal terms and that the failure to do so could therefore be used to argue that liberal forms of knowledge were inadequate ones. The critique was amenable to being ‘co-opted’ into pragmatist frameworks and became one not essentially of power or of intervention per se but of the limited knowledge of liberal interveners. The alternative was not that of emancipatory social transformation but of the speculative and passive search for different, non-liberal, forms of knowledge or of knowing. This came across clearly in the conclusions reached by Duffield, Richmond and others, and highlighted the lack of a critical alternative embedded in these approaches.

The more ostensibly conservative pragmatic critics of peacebuilding, drawn largely to the policymaking sphere, had much clearer political aims in their critique of liberal universalism. This was manifest in their focus on institutional reform, understood as a way of reconciling non-liberal states and societies both to the market and to democratic forms. This, like the transitology discourse before it, was a radical critique of classical liberal assumptions. In their advocacy of these frameworks, discursively framed as critiques of liberal peacebuilding, they had a clear point of reference. Although, as highlighted above, this point of reference was largely a fictional one: a constructed narrative of post-Cold War intervention, which enabled them to ground the scaling back of policy expectations against a framework of allegedly unrealistic or ‘hubristic’ liberal aspirations.

This critique of ‘liberalism’ became more an apologia for interventionist policymaking, rather than a critique, the more policymakers were condemned for being ‘liberal’. Institutionalist approaches, which informed the interventionist frameworks of international institutions and donors in the 1990s and 2000s, were explicit in their denunciation of the universalist assumptions of classical liberalism. This critique of liberalism was however an indirect one, inevitably so, as the institutionalist critique developed at the height of the Cold War (see, for example, Leys, 1996). This is why, while the classical concepts of the liberal rights framework remained – ‘sovereignty’, ‘democracy’, ‘rule of law’, ‘civil society’ – they were given a new content, transforming the universal discourse of the autonomous liberal rights-holder from that of the subject of rights to the object of regulation (see Chandler, 2010). This new content was unfortunately of little interest to the more radical ‘political’ critics of liberal peacebuilding. But, in understanding the content of institutionalist approaches, it is possible to tie together the superficial nature of external engagement with the fact that it had a non-liberal content rather than one that was too liberal.

The institutionalist discourse of intervention and regulation was not one of liberal universalism and transformation but one of restricted possibilities, where democracy and development were hollowed out and, rather than embodying the possibilities of the autonomous human subject, become mechanisms of control and ordering. Institutionalisation reduced law to an administrative code, politics to technocratic decision-making, democratic and civil rights to those of the supplicant rather than the citizen, replacing the citizenry with civil society, and the promise of capitalist modernity with pro-poor poverty reduction (see further Chandler, 2006a, 2010; Foucault, 2008; Hay, 2007; Williams, 2000; Krastev, 2004). Critical conceptualising of this inversion of basic liberal assumptions and ontologies as ‘liberalism’ made the word meaningless at the same time as claiming to stake everything on the assumed meaning and stakes involved in the critique of ‘liberal’ peacebuilding.

CONCLUSION

The end of the experiment of international peacebuilding has been rationalised and accepted on the pragmatist basis that Western peacebuilding interventions were too ‘liberal’. The fact that ‘liberalism’ was to blame is allegedly revealed in the lack of success on the ground: in the failure to achieve liberal outcomes. For the pragmatist critics, the sources of this failure are held to be located in the non-liberal nature of the societies intervened upon. In the dominant policy framing of interventionist agendas, this failing is because of the lack of capacity of domestic societies and political elites; for more radical readings, the problematic impact of external policymaking is often re-read as the resistance of indigenous ways of life and knowledges, which should instead be understood and empathised with.

The critique of 1990s and 2000s policies of peacebuilding for their liberalism suggests that the self-image of the West was being projected where it could not take hold. As we have seen, this critique easily flattered the self-understanding of liberal interveners that if they were incapable of transforming the post-conflict societies and failing states, that they were engaged with, it was merely because they could not easily be anything other than liberal and that the societies being intervened in were not ready for liberal frameworks of governance. These critiques have thereby cohered and naturalised the reproduction of the ideological binary of the civilisational divide between ‘the West and the Rest’, which was seen to be confirmed the more interventionist approaches appeared to have little impact and to have to be scaled back.

There are obviously a number of problems with the critical pragmatic consensus of the failure of ‘liberal peacebuilding’. These stem not merely from the fact that the interventionist policies being critiqued were far from ‘liberal’. Of greater concern is the way that the term ‘liberal’ became an easy and unproblematic assertion of critical intent. The critique of liberal peacebuilding – and its ability to encompass both policy advocates and radical critics of intervention – revealed much more about the problematic state of radical and liberal thought than it did about the policies and practices of intervention and peacebuilding. The ostensible framework of liberal peacebuilding – of the transformative dynamic ontology of the universal rational subject – had already long since been critiqued and displaced by the framework of governance and regulatory power. It was peculiar, in these circumstances, that the dominant policy discussion and the radical discursive framing of post-Cold War peacebuilding should therefore have taken this form.

#### There is no genuine alternative to some form of liberalism that doesn’t empower global authoritarian violence.

Kurchling, 20—London School of Economics, Politics and International Relations Department, Graduate Student (Johanna, “Liberal Peace and Its Crisis: The Revival of Authoritarianism,” <https://www.e-ir.info/2020/06/16/liberal-peace-and-its-crisis-the-revival-of-authoritarianism/>, dml) [language modifications denoted by brackets]

The “crisis in confidence and credibility” (Cooper 2007: 605) of liberal peace has been a subject of much debate in International Relations. It has also led to the question of genuine and viable alternatives to liberal peace. Critics of these alternatives, however, suggest that they represent “espousing variations within” (Paris 2010) or a “problem-solving framework” for liberal peace (Nadarajah/Rampton 2015) rather than genuine alternatives. This essay argues that the only genuine alternative to liberal peace is illiberal peace, which is not viable. The rising illiberal challenge to liberal peace is, however, not included in the academic debate about the extent of the crisis of liberal peace and its viability and efficacy. Rather, the debate is centred around criticism of the core assumptions of liberal peace and whether emancipatory strategies present genuine alternatives or are still situated within a liberal framework and thus based on the same problematic assumptions (Nadarajah/Rampton 2017; Cooper, Turner, and Pugh 2011).

This essay argues that even though the criticism of liberal peace is, in certain cases, valid, the lack of engagement with the rising authoritarian challenge to liberal peace is a blind spot [gap] in the academic debate surrounding liberal peace. Lewis, Heathershaw and Megoran (2018) argue that we see the rise of authoritarian practices and illiberal forms of conflict management characterizing state responses to internal conflict in places like Russia, Sri Lanka, China, Ethiopia, Rwanda and Turkey. Several studies in recent years have paid attention to these tendencies in domestic conflict settlements (Smith 2014; Lewis 2010; Russell 2014; Baglione 2008; Soares de Oliveira 2011).

This essay examines authoritarian trends in peacebuilding by using the example of the Syrian crisis. It argues that domestic tendencies towards a “victory peace” are being fostered by illiberal tendencies in the international sphere. Duncombe and Dunne (2018) suggest that the failure of the international community to intervene in the complex humanitarian emergency in Syria signifies the fragility of the liberal world order. Since the annexation of the Crimea, Russia has openly turned its back against the western liberal norms of international politics. In China, statism, paired with corruption, a lack of democracy and human rights abuses, enables its economic model to outdo the West and the rest. Smaller illiberal powers like Iran keep destabilizing their regions. Furthermore, illiberal populist forces are rising in the heart of the West. If the United States, a key international actor, is not expressing firm commitment to liberal values either in practice, or in rhetoric, anymore, the leadership of the liberal international order is fundamentally challenged. Thus, we might not only be witnessing a rise in illiberal modes of domestic conflict management, but also in illiberal internationalism. This is not how history was supposed to end (Fukuyama 1989). The Syrian crisis could be the final signpost that the crisis of liberal peacekeeping might after all have shifted from one of “perceived effectiveness” towards one of “empirical extensiveness and influence” (Cooper 2007).

With this autocratic revival, tackling the great problems of the 21st century will require more, not less, liberal internationalism. This leads to the conclusion that we might be well-advised in ‘saving’ liberal peace by engaging with its problem-solving frameworks to prevent genuine illiberal alternatives from becoming dominant. This is challenging, especially in the light of rising authoritarianism in the West itself, as the separation between ‘liberal’ and ‘non-liberal’ worlds inherent in liberal peacebuilding becomes more blurred (Nadarajah/Rampton 2017). As the debate on possible alternatives to liberal peace is centred about the question of solving its many problems and failures, and making peace sustainable, fair and holistic, the only genuine alternative to liberal peace, namely illiberal peace, is mainly left out of the discussion. This essay tries to bring it back in and argues that a commitment to liberal peace, how imperfect it may be, might be the only way to prevent illiberal peace from becoming more dominant.

This essay will first discuss the academic debate on liberal peace and its crisis. Then it will analyse proposed ‘alternatives’. Following the analysis, it will argue that although the literature describes the crisis as one of confidence rather than that of empirical evidence, we might be observing the emergence of a crisis of liberal peace in the form of authoritarian peace. This claim is further explored through the example of the Syrian crisis.

The Trajectory of Liberal Peace

With the end of the Cold War, the United States used the window of opportunity that the breakdown of the Soviet Union presented to adopt a policy of liberal hegemony. Liberal internationalism, however, is not a project that started in 1989; the historical trajectory of liberal peace can be traced back all the way to Kant, Locke or Mill who laid the philosophical foundation of liberalism. Throughout the colonial age, the liberal idea was represented in the ‘mission civilatrice’ (Paris 2002). Following the Great Depression in the 1930s, it morphed into New Deal liberalism to restore the prosperity of the United States to then rebuild the liberal order after World War II. It was challenged again by the rise of nuclear power and the Cold War in the 1950s and 1960s. In short, the history of liberal internationalism is one of struggle and counter-struggle. After 1989, however, liberalism had the chance to flourish, as the international order shifted from a bipolar to a unipolar world order under American hegemony.

Liberal peace, though a broad umbrella, can be understood as “the dominant form of peacemaking and peacebuilding favored by leading states, international organizations and international financial institutions” (MacGinty 2010: 391). The rationale behind this form of engagement is based on the ‘democratic’ or ‘liberal peace thesis’, which suggests that liberal states do not go to war against each other. Exporting liberal forms of state-building is therefore seen as peace-promoting activity (MacGinty 2010: 394). The conviction that liberalism is intrinsically peace-promoting has led to the increase in internationally sponsored peace interventions in the decades since the end of the Cold War, for example, in Bosnia-Herzegovina, Afghanistan or Sierra Leone. As western developmental, humanitarian and peacebuilding engagement in the global South has increased, liberal peace has become the dominant peacebuilding paradigm.

Though there is no agreed upon definition of liberalism, it is possible to identify central liberal values which have served to justify peace interventions throughout the last two decades such as “the primacy of the individual, the belief in the reformability of individuals and institutions, pluralism and toleration, the rule of law, and the protection of property” (MacGinty 2010: 393). In the contemporary world, liberalism can be summarized as “a formal and informal commitment to principles and practices of individual rights and responsibility in the context of equality of opportunity, the rule of law, freedom of expression and association, a mainly market economy and governments chosen in multi-party free elections” (Herring 2008: 48). The belief in the superiority of liberal values, combined with the democratic peace thesis, has encouraged governments and international organizations to display confidence in the ability of liberalism to offer salvation against war, poverty, disease and ‘terrorism’ (MacGinty 2010: 394). Nonetheless, this confidence has been questioned in recent years.

The Crisis of Liberal Peace

Proponents of liberal peace interventions, though not a homogenous bloc, argue that the core elements of liberal peace, security and stabilization, reinforcing states, democratic governance, and marketization, act to emancipate people (MacGinty 2010: 395). Critics, however, argue that liberal peace is doing little for the emancipation of the general public. Rather, liberal rhetoric seen as justifying the western-led peacebuilding project which is, in reality, an articulation of a new form of imperialism to reinforce Western hegemony through the promotion of neoliberal capitalist development (Chandler 2010; Cooper et al. 2011; Duffield 2011; Dillon 2000; Barkawi 1999; Pugh 2005).

According to critics, the intensification of liberal interventionism after the end of the Cold War has led to the creation of a problematic ‘power/knowledge nexus’, “constituted by a network of aid donor and recipient states, UN agencies, international financial institutions, NGOs, and myriad academic and policy research centres, that aligns diverse interests, calculations, and practices with an ethical, if not moral, problem-solving mission to end the various conflagrations in the borderlands and interstices of a now explicitly globalising liberal order” (Nadarajah/Rampton 2015: 52). This power/knowledge nexus is thought to be problematic as it reflects the practical and ideological interests of the global north. The central irony within liberal peace, which is pointed out by its critics, is that it often engages in illiberal means to promote liberal values. It is further criticized for its alleged ethnocentrism – the promotion of western values as universal liberal goals. Under critique is also the belief in the liberating abilities of the free market (Cooper et al. 2011). MacGinty (2010: 394) argues that liberal peace has become “neoliberal peace and engages in ‘aggressive social engineering’, whereby the private sector is privileged over notions of the common good, often with profound human consequences”.

Since the Global War on Terror and interventions in Afghanistan, Iraq and elsewhere, some argue that a crisis of liberal peace has emerged. These interventions have exposed the “violent, coercive, and militarised character of a cosmetically pacific liberal order”, and several problems, including “exacerbated conflict dynamics, developmental failure, and localized and transnational resistances” have become apparent (Nadarajah/Rampton 2015: 52). Cooper (2007), however, emphasizes that any crisis of liberal peace is one of “confidence and perceived effectiveness rather than one of empirical extensiveness” (Cooper 2007: 605).

While there is a crisis concerning what liberal peace can and cannot achieve, the principal focus remains on liberal peace as an instrument of hegemony. In contrast, this essay argues that an empirical crisis of liberal peace is emerging, which has been largely ignored in the academic debate surrounding liberal peace.

Hybrid Peace – a “Problem Solving Tool”?

The intensified critique of liberal peace has led to the emergence of varied ‘alternatives’ for peace promotion including hybrid, everyday, post-liberal, social democratic, republican and communitarian peace (e.g. Richmond 2011; MacGinty 2010; Mitchell 2010; Roberts 2011; Barnett 2006). The most popular of these alternatives is the ‘hybrid peace’ concept. It identifies the opportunity for a post-liberal, truly emancipatory form of peacebuilding in the ‘hybridity’ between liberal international and local everyday agency. This view contends that the statist, territorial logic of liberal peacebuilding can be overcome by interconnected hybrid formations of peacebuilding. Scholars researching hybridity acknowledge that peace is not a universal concept. Rather, they are interested in the space that emerges at sites of peacebuilding interventions when the goals, norms and practices of international actors collide with local, everyday activities, needs, interests and experiences. Within this space, an interface with a unique range of possible practices, responses and agencies forms. Studying this interface opens up political space between the ‘local’ and the ‘international’ and allows for attention to be paid to the ‘hybridity’ between them (Richmond 2012: 1). In general, literature on hybrid peace tries to emphasize the importance of local agency in shaping peacebuilding outcomes. The problems inherent in liberal peace, as described above, are sought to be overcome by the shift of focus towards hybridity.

In many ways, however, this approach is more a “problem solving tool” for liberal peace than a genuine alternative. It is seen as an “encompassment and folding into global liberal order of cultural, political, and social orders perceived as radically different and recalcitrant to its expansion” (Nadarajah/Rampton 2015: 58). First, it is argued that hybrid peace shares key assumptions, values and taxonomies with liberal peace through similar logics of inclusion and exclusion. Second, the approach is said to depoliticize and romanticize the everyday and local spaces by binarily constructing them in opposition to the international/global (Nadarajah/Rampton 2015). Paris (2010) argues that much of the criticism of liberal peace is actually representing variation within rather than genuine alternatives, as they are, themselves, based on liberal principles. He argues that there is no realistic alternative to “some form” of liberal peacebuilding strategy (2010: 340). He concludes that “the challenge today is not to replace or move “beyond” liberal peacebuilding but to reform existing approaches within a broadly liberal framework” (2010: 362). Cooper, Turner and Pugh criticize this argumentation stating all peacebuilding strategies have common core prescriptions of “neoliberal policies of open markets, privatisation and fiscal restraint, and governance policies focused on enhancing instruments of state coercion and ‘capacity building’” (2011; 2001). They argue that it would a more constructive approach is “to acknowledge and investigate the variety of political economies in post-conflict societies rather than measuring them against a liberal norm” (2011; 1995).

Though a legitimate critique, it does not provide an answer to the question of whether there is a genuine and valid alternative to liberal peace. In suggesting to open peacebuilding strategies to variable forms of political economy, thus transcending the neoliberal paradigm, they, however, fail to address whether or not such strategies will still fall under the ‘broad canvas’ of liberal peace. Therefore, Paris’ core argument that there is no genuine and valid alternative to liberal peace is not challenged by Cooper, Turner and Pugh. Also taking into account the critique of hybrid peace as a “problem-solving tool” rather than alternative to liberal peace (Nadarajah/Rampton 2015), it appears Paris is correct. The question of what a genuine and valid alternative is is dependent on how we define liberal peace as such.

The debate on possible alternatives to liberal peace is, to a certain extent, obscured by an unclear understanding of what liberal peace means. While critics often emphasize the neoliberal aspects of liberal peace, proponents focus on the broader meaning of liberalism. Paris, for example, highlights “individual freedom, representative government and constitutional limits on arbitrary power” (Paris 2010: 360) as the core principles of liberalism. While critics may view strategies diverging from the dominant neoliberal, top-down approach as ‘alternatives’, for Paris, the only genuine alternatives to liberal peace are inherently authoritarian. He identifies three possible alternatives – international agencies could either install permanent trusteeships; identify local leaders who rule as undemocratic strongmen; or rely on traditional or indigenous practices of peacebuilding. The first option would come close to a colonial-type control, the second lacks basic domestic legitimization and the third reinforces existing power holders and is not free from external influence either (Paris 2010: 357-359).

The study of authoritarian tendencies in peacebuilding and conflict resolution remains underdeveloped. Scholars tend to focus on negotiated settlements as the principal method of conflict resolution rather than military victories (Toft, 2010). However, some have argued that we might be witnessing a return to military victories which had been the norm for resolving conflicts before the ‘liberal moment’ (Kovacs and Svensson 2013).

The Syrian crisis exemplifies this trend. Instead of declaring liberal interventionism dead, because, allegedly, it was never more than “a combination of post-imperial nostalgia with crackpot geopolitics” (Gray 2007), we might be better advised in reforming liberal peace. Otherwise, in the absence of genuine alternatives, we risk leaving a vacuum that can be filled by illiberal forces, as it happened in Syria.

The Syrian Crisis – Towards Authoritarian Peace

In several recent conflicts like those in Afghanistan, Iraq, Libya and Syria, Chechnya or Sri Lanka, we can observe a growing trend in military victories, while liberal keystones of conflict resolution like an inclusive peace process, power sharing, third party mediation and security guarantees seem to lose importance. This form of ‘victory peace’ has not been given adequate scholarly attention. The debate still revolves around a post-liberal peace, problems inherent in liberal peace and emancipatory, hybrid forms of peace.

Gray (2007) argues that, in a “global crusade for human rights”, pre-emptive war would be used to create a new world order, which would lead to the rise of authoritarian regimes. Pronouncing liberal internationalism dead, however, seems premature, especially in the absence of valid alternatives. The example of Syria shows that the rise of genuine alternatives to liberal peace might be worse than what we had before. The crisis in Syria, starting in 2011, is characterized by a civil war entrenched in numerous realist interests and responses that undermine its resolution. What is emerging in Syria today is not any form of liberal peace induced by international agents or a negotiated peace deal. Rather, it is best described as an ‘authoritarian peace’ (Lewis 2017). Authoritarian tendencies are challenging liberal peace, not only in the domestic sphere, but also in the international. The return of Great Power Politics (Mearsheimer 2001) and illiberal forces in the Global North are furthering an “authoritarian peace” (Lewis 2017).

Lewis, Heathershaw and Megoran argue that what they term as authoritarian conflict management (ACM) constitutes “a set of coherent policies and norms, rather than merely an aberration from liberal norms of conflict resolution” (2018: 492). It entails “prevention, de-escalation or termination of organised armed rebellion or other mass social violence such as inter-communal riots through methods that eschew genuine negotiations among parties to the conflict, reject international mediation and constraints on the use of force, disregard calls to address underlying structural causes of conflict, and instead rely on instruments of state coercion and hierarchical structures of power” (2018: 491). They argue that policies within this framework deny grievances causing rebellion, instead locating the causes of conflict in greed of political opponents and the opportunities arising from state weakness. Therefore, these policies focus on reducing opportunities and resources for rebel groups. This form of authoritarian conflict management can be observed in the way Assad’s government clung to power and dealt with rebel forces from the start of the uprisings in 2011 until today. What began in 2011 with the Arab uprisings and people all over the Middle East protesting for democratization, freedom of speech, justice and freedom ended in Syria with a bloody civil war and a military victory for the regime.

The period of 2014 until 2015 can be mainly considered as a political and military stalemate in the conflict. While neither of the armed actors was strong enough to seize territorial control over a longer period of time, they were strong enough to continue the fighting. The conflict’s war economy continued to grow as the armed groups tried to secure material resources. The distinction between regime and rebel forces became more and more blurred as ISIS and other jihadist groups emerged together with Kurdish groups, the Free Syrian Army and others. The stalemate was fuelled, as international actors supported different armed groups. In 2015, the Russian military intervention introduced new dynamics into the conflict, not bringing it any closer to any form of liberal, emancipatory or local peace but rather towards an authoritarian, illiberal form of peace. Syrian government forces disregarded international norms of combat by deliberately attacking civilians and through the use of chemical weapons. By administering an airstrike against a Syrian airbase in response to the breaking of these norms, the United States tried to send a signal in defence of these norms.

Paradoxically, while Russian intervention has accelerated Syria’s humanitarian crisis, it has also paved the way towards a political peace process. In 2016, Iran, Russia and Turkey take over the peace process by implementing the Astana process and alienating the Western states and the UN. Both a ceasefire, arranged by the United States and Russia, and the Ashtanga Agreement reached in May 2017 have led to a weakening in the intensity of fighting between the various armed groups. The fight against the Islamic State of Iraq and the Levant (ISIS) in Eastern Syria, led by the United States and the Syrian Democratic Forces has, in the meantime, taken up speed. In March 2019 the Syrian Democratic Forces announced the final victory over the last ISIS stronghold after the liberation of Baghouz. In April 2019 the peace talks in the newly renamed Kazakh capital of Nursultan have continued into the 12th round. Due to diverging opinions regarding which steps should be prioritized, a breakthrough could not be achieved, however. While the military battle is coming to an end, the most brutal conflict of recent decades is turning into a fight about who gets to shape what is left after eight years of war. The battlefield is now more and more geopolitical.

Not only the Syrian government’s response to the civil war was characterized by “authoritarian conflict management”, also, the international responses had little to do with the promotion of liberal values. The increasing intervention of Russia, Iran and Turkey, and the stalling and replacement of the Geneva peace process by the Astana process is an indicator of a shift away from western liberal internationalism towards an authoritarian peace. The international competition for power and security has constrained states which could have intervened more effectively leading to the biggest refugee crisis of the 21st century. Yet, states have put their national security interests above their obligations under the Convention on Refugees and the Universal Declaration of Human Rights and ignored their responsibilities to guarantee asylum to the survivors of the Syrian civil war. In cooperation with the EU, Turkey, which presents the transit point for most of the refugees from Syria, has agreed to accept the refugees turned away by the EU. The international community has further greatly disregarded its duties under the Rome Statute, the Responsibility to Protect (R2P) and the Convention on the Prevention and Punishment of the Crime of Genocide. Their efforts to intervene have been blocked by Russia who is also acting to protect its own national interests. The realist core assumption of an anarchic state system, in which nothing is stopping states from ignoring their international obligations to please their national interests, seems to be confirmed by the Syrian civil war and international interventions. These realist interests and responses have been a restrictive force against peace efforts in Syria.

While the United States has been leading an international coalition against ISIS and other extremist groups since 2014, it has ended its military aid to the moderate rebel fractions like the Syrian Democratic Forces. Apart from the much-contended missile strikes in 2018, the United States and its Western allies have avoided direct contact with government forces. Its stance on the Assad regime is unclear, while Russia, Iran and Turkey have a much clearer picture of their interests in the Syrian peace process. The outcomes and the further developments are still to be seen, however. From what we know today, though, it is fair to say that Syria is the signpost of the real crisis of liberal peace in the contemporary world.

The Real Crisis of Liberal Peace

Even though we were celebrating the post-1989 ‘liberal moment’ not long ago, liberalism is in crisis again today. While the future seemed to be moving towards the direction of democratic-liberalism, the rock of modernity on which the liberal world order has been built on over 200 years seems to be crumbling now with the rise of non-western authoritarian powers, populism in the West and beyond, and the return of Great power politics. 1989, with the end of the bipolar order, produced the notion of a unipolar world under American hegemony, the triumph of free markets as the world opened up into a single world economy, and the establishment of the liberal world order with its belief in democracy and human rights and the building of new layers of global governance. These developments gave a new impetus for a Europe as a peace project. On a global scale it, at least on the outside, marked the end of organizing international relations by threats and power. 1989 was not so much a power shift, but a shift in the way in which power was organized.

Though liberalism has made inroads in states where it was least expected it to – as shown by the colour revolutions in the Ukraine, the Arab spring, and the Green Revolution in Iran – it is under threat in states where it was thought to be firmly established. A strong populist backlash in Europe and the United States is threatening the democratic liberal order in the west and beyond, and the whole context of the post-1989 liberal order has changed. “The unipolar moment”, as Krauthammer (1990/91) called it, is over. In the 1990s the primacy of human rights over state sovereignty had the consequence of the increase in humanitarian interventions. With the Iraq intervention, that idea has died. Responsibility to Protect is a remnant of the previous focus on humanitarian intervention in conflict zones, but it is not followed through with, as has become clear with the Syrian crisis. Russia’s contemporary foreign policy, the annexation of Crimea, and its Syria policy demonstrate the desire of greater international and regional influence, confirming its legitimacy as a great power.

In a world where the logic of power is reasserted, the core of liberal peace is challenged. In light of the comeback of victory peace, rising authoritarian modes of peacemaking, and the rise of illiberal power on the regional and international levels mark a crisis of liberalism, which brings with it a crisis of liberal peace. The academic debate, however, seems to focus on the insufficiencies of liberal peace and thereby fails to reflect on illiberal tendencies that are challenging the liberal paradigm as a whole. It does not consider post-liberal peacebuilding and fails to recognize that post-liberal peace might look very different to what it anticipated.

While we have seen a “crisis in confidence and credibility” of liberal peace during the wars in Iraq and Afghanistan, with the crisis in Syria, we might now be witnessing a real crisis of liberal internationalism. Syria, now moving towards an ‘authoritarian peace’ based on perpetual violence and away from the liberal model of peacebuilding, enacted a mode of “authoritarian conflict management” which “seeks to prevent, de-escalate or terminate violent conflict within a state through the hegemonic control of public discourse, space and economic resources rather than by the liberal model of compromise, negotiation and power-sharing” (Lewis, Heathershaw, and Megoran 2018: 499).

Furthermore, the involvement of Russia, Turkey and Iran in the peace process signal a shift away from the western liberal mode of international peacemaking. The Astana process is an example of the return to realist internationalism signified by the return of statism, territoriality and sovereignty, non-interference and non-intervention, proxy war, negative peace and militarism, with inherent illiberal and authoritarian tendencies. With the rise of illiberal populist forces in the West itself, the liberal moment of the post-1989 world order seems to be over.

This apparent crisis of liberal peace is, however, overshadowed by the perceived ‘crisis of confidence’ (Cooper 2007). The debate on possible alternatives to liberal peace is centred on solving its problems and failures and making peace more sustainable and emancipatory. The critical discourse around liberal peace thus obscures state-led authoritarian modes of conflict management and international interventionism, guided by national self-interest, by illiberal great powers. While the critical discourse heavily criticizes Western peacebuilding efforts in Afghanistan or the Balkans, it does not adequately capture the prevailing authoritarian tendencies in contemporary conflict management and peacebuilding.

The history of liberal internationalism is, however, one of struggle and counter-struggle. The current crisis, thus, does not have to signal its end. Considering that the only genuine alternative to liberal peace is illiberal peace, we might be better off by saving liberal peace itself. Critical scholarship should take note of authoritarian trends and the changed international environment and explore alternative routes to liberal peace within the liberal paradigm, an option that should be preferred over allowing illiberal forces dictate a new paradigm of illiberal peace. Making liberal peace more emancipatory and sustainable, for example, by paying attention to hybridity, might be our only chance to fight against authoritarian tendencies in conflict management and peacebuilding.

#### Liberal norms of law and sovereignty reduce international conflict.

Gill-Tiney, 22—Lecturer, Department of Politics and International Relations, University of Oxford (Patrick, “A Liberal Peace?: The Growth of Liberal Norms and the Decline of Interstate Violence,” Journal of Conflict Resolution, 2022, Vol. 66(3), 413–442, dml)

This article shows that liberal interpretations of sovereignty, which emphasize international law, interdependence, free trade, democracy and individual rights and freedoms, have become increasingly prevalent in UN Security Council resolutions since 1970. Given that two non-western states, Russia/Soviet Union and China, are permanent members, I argue that the content of these resolutions reflects broad consensus between major powers—both western and non-western—as how these norms should be interpreted. This is not the same as arguing that these states share preferences or interests, rather, substantial differences remain, largely along the cleavage between the United States, Britain and France on the one hand and China and Russia on the other (Einsiedel and Malone 2018, 156-58).1 Yet, the collective positions of these states have evolved over time, suggesting a shift in how sovereignty is understood. The dominant role that these states have in shaping the international order means that their collective understandings may be taken as representative of the normative structure of international society at any point in time, with the expectation that this impacts all states in the system.2

I argue that as liberal interpretations of these fundamental norms increase, the likelihood of a dispute participant resorting to violence decreases. Through content analysis of all UN Security Council resolutions between 1970 and 2014 I first create a measure of the strength of liberal interpretations of sovereignty. This is then utilized in quantitative analysis of dispute participants in the period to explain the variation in the level of violence employed. I find statistical and substantive support for my theory, showing empirically that the growth in liberal norm interpretations is negatively associated with the likelihood of a state resorting to violence in an interstate dispute.

This is not to argue that structural arguments are wrong, far from it, nor is it to reject the roles of conventional and nuclear capabilities in shaping interstate conflict behavior. Rather, state power does matter, that is why the collective interpretations of the permanent members of the UN Security Council are used to understand the system. Domestic veto players, intergovernmental enforcement mechanisms, and trade dependency all do shape the responses of policymakers during an interstate dispute. However, the intersubjective ideas they carry with them into disputes are also crucial to understand why some disputes escalate, and others do not.

This article contributes to our understanding of the role that ideas have in shaping interstate conflict in two ways. Firstly, I contribute to the large literature which has sought to understand the role which norms play in selecting for certain behaviors over others. Most of the work within this area has been qualitative and has either charted the development of specific bundles of norms over long periods (Keene 2012, 2013; Risse, Ropp, and Sikkink 1999; Sandholtz 2007) or focused on the life-cycle of specific norms (Eckstein 1988; Finnemore 2000; Finnemore and Sikkink 1998; Krook and True 2012; Nadelmann 1990; Sandholtz 2007; Sandholtz and Stiles 2008). I build upon these insights by arguing that the norm of sovereignty has been re-interpreted over time, and that the collective nature of reinterpretation means that it can be used to examine its impact in interstate conflict.

Secondly, this article provides an innovative means of exploring ideas in a quantitative framework. The quantitative interstate conflict literature has heavily favored structural and power-based explanations for actor behavior. This has come at the particular expense of norms. Whilst there is widespread acceptance that norms matter amongst these scholars, they have tended to set aside norm-based explanations given the difficulty of objective measurement. This difficulty revolves around the problem of having surety that multiple actors share an idea, that is, intersubjective understanding. The most obvious sources of data to assess this would be a survey of policymakers or the content of international legal documents. This first avenue is incredibly difficult to gain anything but anecdotal responses too. Policymakers are hard to get access to and may misrepresent their own thoughts and actions to show themselves in as best light as possible. Ensuring that any respondents have understood the survey in the same way is difficult given language differences, whilst response rates are likely to be so low as to prevent a non-random sample from being acquired, even if the potential pool of relevant participants is widened to include all senior politicians and bureaucrats, both incumbent and preceding.

Some of these problems are resolved by utilizing the texts of international legal documents. Given that these are generally carefully and cautiously written the researcher is more certain that the drafters actually share an understanding of the topic. Recent work by Allee and co-authors (Allee, Elsig, and Lugg 2017; Allee and Lugg 2016) have innovatively utilized content analysis of interstate trade deals to explore how much is replicated in subsequent deals, which sheds light on the relative power of the participants. This has certainly gained deeper understanding of the topic, but is not a suitable approach for this research questions for two reasons. Firstly, these deals are generally drafted by small numbers of states, that is, they may not be assumed to represent the preferences and interests of nonparties. Secondly, whilst interpretations are spelled out, these may be mechanistic rather than ideational, making it unclear what the broader normative position may be. This is made more acute by the drafting being down by bureaucrats and lawyers rather than policymakers themselves. Whilst some direction is no-doubt given by the latter, assuming a high level is problematic. Utilizing the content of UN Security Council resolutions addresses these problems because the documents may be assumed to be political, that is, though member states are represented by ambassadors, a high-level of involvement by their state governments is typical given the importance attached to security issues. Moreover, since the permanent membership is diverse in interests and preferences, and these members can veto unpalatable resolutions, they may be reasonably assumed to provide insight into intersubjective understandings.

Existing Explanations of Interstate Conflict and the Role of Norms

Two existing literatures are built on here, firstly, the broad democratic peace literature, including its offshoots and opponents, and secondly, scholarship on the evolution of international norms. The former literature initially focused upon regime type, and over time has been widened to include more fine-grained analyses of domestic political structures in any state (Bell and Quek 2018; Fearon 1994; Gries et al. 2020; Huth and Allee 2002; Tomz, Weeks, and Yarhi-Milo 2020; Weeks 2012; Weiss 2013; Weiss and Dafoe 2019). However, the approach in all of these works is to examine structures, that is, formal institutional constraints encountered by decision makers, rather than norms, that is, the role of shared principles, perceptions and expectations of behavior. The distinction between norms and structure is not rigid. This is most clearly seen in the term “institution” which is commonly used to mean both formal structures which limit the agency of decision makers, but also a set of norms, rules, and practices which govern a specific area. To clarify the distinction being made in this article, I adapt the nomenclature used by Reus-Smit (1999) who distinguishes between constitutional institutions, norms without which a society of states could not exist, and fundamental institutions, which facilitate cooperation. The former includes sovereignty, as well as the rights of self-determination and nonintervention, and the latter contractual international law and the organizations which enforce it (both internal and external to states). In this article, I term the former “norms” and the latter “structures.”

The democratic peace literature has spurred several offshoots, the most relevant of which are those which have argued that rather than regime type the “peace” is generated by economic factors including trade interdependency and level of development (Gartzke 2007; Hegre 2000; Kim 2014; Kinne 2012; McDonald 2009, 2010; Mousseau 2013; Schneider and Gleditsch 2010) or shared intergovernmental organization membership (Appel 2018; Kinne 2013a, 2013b; Prorok and Appel 2014). More general critiques have argued that any effect seen is due to the prior settlement of territorial disputes (Gibler 2012; Gibler and Tir 2014; Owsiak 2012), nuclear weapons (Waltz 1990), alliances (Kydd 2005), unipolarity (Monteiro 2014) or military power (Layne 1994; Rosato 2003) instead. With the exception of the latter critiques, this debate has broadly accepted the importance of norms (Doyle 1986; Moravcsik 1997; Owen 1994; Russett and Oneal 2001), especially as the “good” functioning of domestic and international structures, particularly veto players, requires political actors to have the right norms.

This relationship between norms and structures has been more closely addressed through the focus on contracts, that is, to hone in on specific economic norms and structures characterized as allowing an economic market to function “with extensive and regularized transactions among strangers that require an element of trust” (Mousseau and Xiongwei 2018, sec. Emergence Contractualist Peace). This literature argues that the relationship between peace and democracy is spurious, and rather, that both are explained by “contracturalist” norms and structures (Gelpi and Grieco 2008; Mousseau, Hegre, and O’Neal 2003), which builds upon the work of (Acemoglu and Robinson 2006; Dahl 1997; North, Wallis, and Weingast 2009). Yet, the literature still relies upon operationalizations which are essentially structural, that is, whilst recognizing the importance of norms, the empirical testing has fallen short.

A comparatively small subset of the literature has examined norms as an explanation for the democratic peace. For Deutsch (1957), though NATO is understood as a structure, a security community is more crucially formed around shared values (norms). Kahl argues that the basis of the democratic peace is collective identity rooted in liberal democracy interlinked by intergovernmental organizations (1998). For Risse, the influence of NATO allies upon the foreign policy of the United States demonstrates the importance of liberal norms, through a mechanism which relies upon the similarity of domestic political institutions in these liberal democracies and coalition-building (1995). Though valuable additions to the literature, and in Deutsch’s case systematic in its treatment of the subject, these works fail to tackle the question of whether the democratic peace is structural or norm based since the two are entwined throughout. The difficulty in conceptualizing, isolating and operationalizing norms is a clear problem. Broadly, it is hard to isolate a norm from either the structure in which it exists or from other norms for analysis. It is also a challenge to show that any norm is truly intersubjective in understanding or to measure its effect upon some outcome of interest. Yet, without attempts to do so we are left with a partial picture, particularly for those emphasizing the importance of structures—be these domestic or international—for reducing interstate conflict. In short, the existence of a domestic legislature, independent judiciary, or interstate treaties, is only relevant if the individuals which employ them do so appropriately. To understand this necessitates exploring the ideas in the heads of these individuals, and particularly, how these ideas are shared.

In contrast to the large, predominantly quantitative, literature which has examined the democratic peace and wider questions linking regime type to the onset, conduct and termination of interstate disputes and wars, the broader literature on interstate norms has tended to be qualitative and highly focused. This has resulted in detailed work on human rights (Risse, Ropp, and Sikkink 1999), humanitarian intervention (Wheeler 2000), and nuclear weapons (Rublee and Cohen 2018; Tannenwald 1999). There is no doubt that this has contributed to our understanding of interstate relations, yet the clear shortcoming is generalizability. That is, the specificity of these approaches, necessary to make any form of causal claim, is in a sense also the undoing.

In this article I focus on the reinterpretation of the sovereignty norm by powerful states. I argue that they have a dominant role in shaping the normative landscape of the international system by being tasked with the interpretation of norms and the maintenance of international society (Hurrell 2007; Wight 1978; Saunders 2006). Operationalizing this, I utilize UN Security Council resolutions as a means of assessing what the consensus position of the permanent members is. Content analysis is used to examine the normative framing of resolutions, allowing both an exploration of change over time, and quantitative measures of the relative strength of these ideas to be derived which can then be used in regression analysis.

The Constraining Effect of Liberal Interpretations of Sovereignty

Norms are dynamic, and undergo processes of evolution, creation and destruction. Change may occur gradually as actors shift their understandings towards an alternative, or suddenly through systemic, and thereby social, change. In international relations, the latter is tightly linked to sudden shifts in great power authority, which has typically occurred due to defeat and a subsequent realignment of international order. War, and its aftermath, can lead to substantial rearrangements of international order, meaning both a new distribution of power, but also a re-interpretation of international society. In examining change in understandings of sovereignty I term gradual change “evolution” and sudden change “tectonic.”

Interpretations of Sovereignty

The post-World War Two era allows examination of both evolutionary and tectonic change in understandings of sovereignty. Evolution occurs during relative peace, whilst tectonic change is part of major realignments of international order. The end of the Cold War, though non-violent certainly led to significant power shifts, resulting in a tectonic change. The pre- and post-Cold War eras are eras of evolution. Assessing rivalrous interpretation of norms is crucial to understanding these changes. I outline a divergence between traditional and liberal interpretations which are used to examine change in norms, and the effect upon international conflict.

Over the post-World War Two period two interpretations of sovereignty have existed, firstly, that emphasizing territorial sovereignty and non-interference in the domestic affairs of others, and secondly, that emphasizing international law, interdependence, free trade, democracy and individual rights and freedoms in international affairs. I term the former approach to sovereignty “traditional,” and the latter “liberal.” A liberal interpretation of sovereignty, therefore, is one which places emphasis upon the actions of states, particularly those between a government and its citizens. Sovereignty in this understanding implies not only the exercise of power over a territory and people (as in the traditional understanding), but also that there are limits to the exercise of power and duties to a people (Sandholtz and Stiles 2008, 287-88).3 This has been most clearly stated in the Responsibility to Protect doctrine. I examine the relative balance between these two interpretations over time, arguing that this balance alters how sovereignty is understood, and thereby is related to the likelihood of escalation in interstate disputes.

My expectation is that the relative balance between these two modes of interpretation has shifted over the post-World War Two period to favor a liberal interpretation. This does not mean that traditional interpretations are irrelevant, rather, that they have been de-emphasized in international discourse relative to the latter. A spectrum in which purely traditional and purely liberal interpretations mark the poles is conceived of as existing, with great powers occupying positions between the two. The effect that this shift toward a liberal interpretation of sovereignty has occurred on international conflict escalation is now examined.

Understandings of Sovereignty and Conflict Escalation

How understandings of sovereignty impact international disputes may be explored in terms of the conflict life-cycle, that is, why a dispute emerges, why violent conflict breaks out, and how the conflict ends, or in terms of participant conduct during war. Here, I examine the effect of change in the collective understanding of sovereignty upon escalation, meaning that I assume the prior existence of international disputes. Whilst the effect of norms upon the onset of disputes is an important question, very few disputes result in the use of violence, that is, though onset is a necessary condition for violence, it is far from sufficient. I examine escalation from a nonviolent dispute to a violent dispute—the use of armed force in international relations—because this is of greater substantive significance to state leaders and their citizens. Moreover, whilst reducing the likelihood of dispute onset would likely result in less international violence, the more normatively important question is how to avoid escalation, as this reduces the costs of war: human death and economic destruction.

This is not to trivialize dispute onset, and logically we might expect the growth of liberal understandings of sovereignty to also reduce onset rates as well as escalation likelihood. However, there are two reasons why we may doubt the substantive significance of this, firstly, dispute onset is a relatively low threshold, and secondly, onset is often triggered by events beyond the direct control of a state. To this first point, a dispute simply means that two or more actors disagree over something, oftentimes the behavior of the other side or the distribution of some good (for instance, territory). This article utilizes Militarized Interstate Disputes as the operationalization of dispute, and many disputes are comparatively minor events, with the threshold being that one of the two parties has a minimum level of militarization as part of the dispute (for example, the issuance of a deterrent, or compellent, threat). A focus on onset, therefore, would prevent observation of substantively more important actions, that is, the actual use of force against another. Secondly, many disputes begin due to accident and/or the decision making of low-level military commanders or political officials who are neither in the position to consider national interests nor strategic interactions. This means that onset may essentially be an apolitical decision which takes little or no account of the broader strategic landscape nor the structural and normative context. It is after onset, that is, when escalation is considered by policymakers, that the stakes are higher and when causal mechanisms common to this topic are most active.

Escalation then, is a political decision. In making the choice to escalate, or not, policymakers are impacted by a range of strategic factors, but crucially, are also constrained by norms. The use of force in international relations must be justified, and since 1945 the UN Charter specifies just two: self-defense and collective peace enforcement. To this, we might also add humanitarian intervention, though this remains contested. As a baseline, therefore, when faced with dispute onset, policymakers must justify their actions with reference to one of these reasons. Moreover, in making the decision to escalate, policymakers are also constrained by liberal values which emphasize diplomacy, cooperation, international law, international organizations, the rights of the individual, and to question the legitimacy of the march to war. Taken together, this slows the decision to escalate, since legal justification is needed, diplomacy is necessary, and potential economic and human costs understood, calculated and defended. A shift toward liberal interpretations thereby means a reduced probability of escalation to violence, tacitly assuming that the risk of a dispute arising in the first-place is unchanged. This leads me to my first hypothesis, which relates to the evolution mechanism of change:

Hypothesis 1: Given an international dispute, the risk of escalation decreases as liberal interpretations increase.

An alternative explanation is that any impact of normative change is actually a result of the end of the Cold War, that is, the redistribution of power between great powers, typically resulting from system-wide conflict results in qualitative differences in interpretations of fundamental norms between peace-periods. Whilst the end of the Cold War did not involve a system-wide war, it did mark the end of sustained rivalry between great powers. The pre- and post- periods can thereby be compared. Given the rivalry of the United States and Soviet Union during the Cold War, and the relative dominance of the United States post-Cold War, we might expect qualitative differences in conflict behavior to be observable in the two time periods, attributable, perhaps, to a greater emphasis upon liberal interpretations in the post-Cold War era. The dramatic change in the distribution of power triggered a significant change in the consensus surrounding interpretation of fundamental norms of international society. This leads me to my second hypothesis, which captures the tectonic change mechanism:

Hypothesis 2: The risk of dispute escalation decreases given a systemic increase in liberal interpretations of sovereignty attributable to the end of the Cold War.

Method

I use multiple logistic regression to estimate the effect of change in the normative landscape on the use of force by dispute participants. To address the underlying selection problem, that is, that dispute onset is non-random, I also estimate maximum likelihood and twostep Heckman selection models. Substantive significance from the logistic regression is then explored utilizing the observed values for predicted probabilities approach (Hanmer and Ozan Kalkan 2013). Standard errors are robust and clustered by year, where model specification allows (that is, not in the Heckman twostep model). This is to take account of the data structure since years differ by the number of Militarized Interstate Disputes (MIDs) which onset and the number of participants in these MIDs. Because the independent variables are annual values, the same value is given to all dispute participants in the same year. If standard errors were not clustered by year then there would be substantial withincluster correlation.

This paper models the hostility level of interstate disputes as a monadic phenomenon. Much of the literature on democratic peace theory utilizes a dyadic setup, either directed or undirected. I opt for a monadic structure for three reasons, firstly, because many of the theoretical explanations for the democratic peace are in essence, monadic explanations, with a dyadic version layered on top. For instance, the core claim of much of the literature is that democracy reduces the hostility of foreign policy, a monadic claim, because leaders are accountable to citizens who have a low tolerance for the costs or war, and because legislatures and a free and independent media provides greater scrutiny of policymaking, slowing the march to war. The dyadic version of this—the interaction of joint democracy—relies on the signals that these same processes provide to another actor. It is puzzling, therefore, that empirical findings have tended to show support for the latter, but not for the former. Secondly, the difficulty in finding empirical support for any monadic explanation means that a higher threshold is being set here by using a monadic approach. Thirdly, the argument I make, that liberal norms reduces the hostility level of interstate disputes, may have varying effects according to the regime type of dyads. However, that claim is not made here, rather I argue that these norms exist for all in international society, not for a subset, and that they act directly upon policymakers, not only when policymakers interact with their international counterparts.

### AT: Realism Ks

#### Balance-of-power concerns structure state behavior, even if they can’t explain everything states do.

Blagden, 18—Senior Lecturer in International Security at the Strategy and Security Institute, Department of Politics, University of Exeter (David, “Realism, Uncertainty, and the Security Dilemma: Identity and the Tantalizing Promise of Transformed International Relations,” *Constructivism Reconsidered: Past, Present, and Future*, Chapter 12, pg 205-216, dml)

The previous section documented how social variables might be taken as having the potential to transform international politics. This section now turns to an explanation of why it is so hard to fulfill such seeming transformational promise. Running throughout is the argument that while playing a particular social role or expressing a particular cultural identity are certainly state interests, they are necessarily subordinate to political survival (as a sovereign entity with control over its own foreign policy), “physiological” security (the safety from death and harm of the state’s population), and economic prosperity (a baseline level of which is necessary to ensure physiological security). Put simply, if a state and its population do not exist, it cannot achieve anything else—such as fulfilling a social role or expressing a cultural identity—either.36 And since survival, security, and prosperity all have a material base—as Wendt recognizes via his “rump materialism” (he simply does not think the material base yields determinate outcomes)—so too must states necessarily put the defense of such interests ahead of social role fulfillment if they want to be in a position to play any sort of role in future.37 That is not to suggest that states do not sometimes—or, indeed, often—make ideationally driven foreign policy choices that are detrimental to their other interests. It is simply a description of states’ incentive structure, which much of the time they end up following.

It is necessary at this point to defend the notion that there is, in fact, a material base independent of the social world and that characteristics of that material base can yield causal outcomes. After all, military technology does not descend as manna from heaven, but rather is created via human agency in response to perceived threats, and thus it necessarily contains a dose of military culture and broader social identity from the outset. The same goes for the overall share of national economic resources allocated to defense, and indeed, money itself is a socially constructed store of value, albeit one premised upon underlying materially underpinned wealth.38 Any assessment of strategic priorities is necessarily filtered through the strategic-cultural lens of the institution(s) doing the assessing; asking one’s navy for an analysis of the relative merits of sea denial versus power projection, for example, necessarily delivers an answer infused with that navy’s historical trajectory, its sense of its role in the nation and the world, its internal politics, and so forth. The broader question of whether the sea— like other geographical features—constitutes a strategic barrier or a highway similarly requires cultural interpretation.

Even technologies with such seemingly self-evident destructive power as nuclear weapons are not self-evidently “good” or “bad,” either morally or strategically, absent social interpretation. One might see them as “bad” because of the potential humanitarian consequences of their use (or because of the constraints they impose on conventional military options), or “good” because of the casualties in conventional war they prevent (and deterrence that they enable at low relative cost). Their political meaning is thus socially constructed, even if the physiological effects on human bodies of their detonation have only one possible outcome. If military technology and resources require a social component to be both developed and meaningfully deployed, then Wendt’s contention that there is indeed a “rump” material base but that it is simply indeterminate—in the absence of a friend/enemy distinction—as a cause of international outcomes becomes alluring.39

Crucially, however, each of these social choices involves a decisive material effect that is not open to interpretation. It may be debatable whether nuclear weapons are “good” or “bad,” but the effect that one will have on the city and its population of frail, carbon-based human animals over which it detonates represents a single, determinate outcome—and a state facing another state armed with them must therefore make certain necessary calculations based around that capability.40 In the same vein, while the strategic threat/opportunity constituted by geographical features, such as the oceanic moats enjoyed by the United States and United Kingdom, may be a matter of interpretation, the underlying material factor—humans’ inability to cross water without spending resources on capital (ships) that could otherwise have been spent on further ground forces—yields certain necessary outcomes. Indeed, the very foundation of relations between major powers after 1945—secure second-strike nuclear deterrence and its disincentivization of conventional aggression41—rests on a physical “fact”: the relative impenetrability of water to the electro-magnetic spectrum and the associated survivability that it provides to ballistic missile submarines.

The same goes for the decision over what share of national economic resources to allocate to defense. Choosing a proportion may indeed be a socially and ideationally informed political choice, but the underlying size of the resource pools—and the military potentiality that they underpin— rests on the total size of the state’s capital stock (both human and physical), which is not a matter of social interpretation. And while military technology is indeed developed in response to human agency, it is done so from within the technical bounds of the feasible. Such rebuttals apply more widely: while the balance of power, including resources and technology, is indeed necessarily interpreted through states’ social lenses, it nonetheless conditions the bounds of the possible even in the absence of social content. And when those possibilities include hostile use, certain behaviors are necessitated by prudent states seeking survival for their populations.

Realists should indeed be castigated if they infer predictions solely from the balance of currently existing military hardware—a thin and intellectually impoverished understanding of relative power—and critics are correct to point out that a large stock of materiel is not the same as being able to compel another to do that which they would not otherwise have done, in line with the behavioral output understanding of power commonly associated with Dahl (as distinct from the input understanding).42 But viewing total state power in terms of overall assets, defined as the state’s total stock of physical,43 financial,44 and human capital,45 does a better job of first encompassing all the relevant resources—equipment, stores of value, human bodies and brains—and, second, providing an effective measurable proxy for the underlying causes of behavioral power (given that the latter can only be observed ex post, and is therefore not an effective predictor of outcomes). None of this is to deny that there is a social element to the construction of all these power resources, or indeed that the “material” itself involves a large dose of social input, and this chapter is therefore not attempting to “settle” the debate over the precise nature of the relationship. It is simply to point out, rather, that states’ power resources and their effects are not wholly socially constructed and that the nonsocial element produces certain effects.

Turning to specific arguments over states’ pursuit of status, the notion that achieving a particular elevated status and thus fulfilling a certain international-social role might be a goal of states is relatively uncontentious.46 For instance, one insightful recent constructivist work on Britain’s pursuit of international status suggests at the outset that states’ social roles are not the same as their interests, ambitions, values, or capabilities.47 Yet the same work later asserts that social role actually produces national interests, thus implying that states cannot in fact have interests besides those constituted by identity.48 Such conceptual tensions are symptomatic of a theoretical dilemma: the more minimal former assertion is the harder to refute, yet the more ambitious latter claim is necessary if constructivists are to escape the realist retort that fulfilling a social role is merely an interest of states—and a subordinate one to materially underpinned survival at that—rather than the interest. Escaping this retort is in turn necessary if constructivists are to be able to claim that anarchy is indeed what states make of it socially, since transforming the prevailing culture of anarchy would require states to lower their guard against each other—and thus accept higher risk to their survival, at least while the hoped-for transformation was taking place—in pursuit of an international-social value.

The less contentious point—that playing a particular social role is one of multiple interests—opens the way to conceding that the most fundamental state interests remain “political” survival (of state territory and institutions), “biological” security (of the citizenry’s bodies), and preserving some baseline level of economic prosperity, since a state that cannot survive cannot achieve anything else. But if that is the case, then from these materially underpinned vital interests follows a need to be capable of defending them against potential foes—and that, if it comes to it, means accomplishing certain military missions.49 Such military capability is necessarily underpinned by material resources, even as it also has a socially constructed dimension. Such capability can be provided independently (internal balancing), via allies (external balancing), or through some combination of the two—prudent strategy, including eschewing avoidable confrontation and aligning with the preferences of powerful allies, is a key aspect of state success50—but either way, it rests on some friendly actor’s underlying resources. And reliance on external balancing brings its own dangers, as recently experienced by European NATO, when one’s allies turn coercive.51

In short, such an analysis—while conceding that social role and status are important to states, all else held equal, and that such concerns sometimes drive them to act in imprudent ways—nonetheless suggests that hedging against abandonment, coercion, or outright destruction via balance-of-power positioning is likely to remain pervasive. This is not to say that there will not be variation in the extent and severity of such competition. All manner of ideational variables might exacerbate or reduce tensions, as discussed above, and even in the absence of such social forces, overt, intensive competition may yield self-destructive outcomes if it increases another side’s insecurity and causes them to adopt a more offensively capable strategic posture in response.52 The point, rather, is simply that conflict will never be a wholly absent possibility and that that reality must condition states’ calculations—often to the point of some level of defensive hedging, if the state has the resources and technology to make that feasible—even in times of broadly cooperative relations.

A similar retort can be made against the claims that threat perception and military doctrine are both so fundamentally skewed by culture that they may be commonly and wholly disconnected from balance-of-power concerns, and which subsequently allow for an end to military balancing, mutual threat, and security competition. While this short chapter is clearly not the place for an extensive review, the success of many states— particularly resource-rich ones—in aping military technological and professional best practice would seem to suggest that much of the time states are able to achieve what Gray, borrowing from marketing theory, dubs “good enough” force postures in the face of strategic uncertainty.53 Similarly, when states do “die” in the face of foreign aggression—a rare occurrence in post-1945 international politics—it is more often as a consequence of their relative military weakness and geographical vulnerability than as a consequence of a failure to perceive a looming threat.54 Indeed, a key contribution of the neoclassical realist research program has been to demonstrate that while domestic-political variables may filter strategic behavior in multifarious and often nefarious ways, there are still underlying balance-of-power structural pressures at the international-systemic level that states usually respond to, even if they do so belatedly or imperfectly.55 In short, while Waltzian “socialization” toward accurately perceiving threats and formulating effective military doctrine may frequently be hindered—and sometimes terminally compromised—by cultural factors, as a description of the workings of the international system as a whole (as he intended his theory to be), realist predictions of enduring concern and possible competition over the distribution of material power are not undermined by this recognition.56 Tellingly, despite their strong ideational commitments toward democracy promotion and human rights enforcement under the banner of upholding international order, Western states have recently had the reprioritization of balancing against increasingly capable rivals forced upon them by developments in the balance of power, whether that be China’s rise in Asia for the United States or Russia’s (partial) resurgence in Europe for the rest of NATO.57

Finally, even national identity and the nationalism it engenders—the ideational “master variable” underpinning the nation-state system—is itself forged by the interaction of political group identity and the survival imperative under structural anarchy. To paraphrase Tilly, war makes the state, and the state makes war.58 Modern nation-states may have originated as political groups of individually weak human beings with some shared identity connection, but their choice to form states as protective war machines capable of generating the military power necessary to defend against similar political units, and the subsequent mutual reinforcement of national identity and state strength, is very much consistent with realism’s predictions of the consequences of international structural anarchy. Indeed, as noted earlier, Mearsheimer uses these grounds to argue that nationalism and realism are mutually supportive theories.59 In the post– Cold War world, moreover, mutually threatening political groups’ need to generate the military power necessary for security under anarchy—the security dilemma, in short—helps to explain the explosion of ferocious ethnonationalist and sectarian conflict within and between the new states emerging from the collapse of previously multiethnic communist federations, secular Middle Eastern autocracies, and so forth.60 Such conflict has in turn forged the identity of the states and state-like entities emerging from it. In short, while it is certainly not impossible for national identities to shift, as noted above, the process of their generation nonetheless suggests that they are endogenous to—rather than readily capable of exogenously shifting to transform—international systemic security competition and balance-of-power positioning, that they are as much a dependent variable as an independent variable.

Uncertainty and the Menacing Shadow of the Future

The previous section outlined why some of the otherwise most convincing constructivist variables at work in international politics nevertheless cannot promise to transform international politics away from a world of “realist,” security-motivated balance-of-power positioning. This section turns to discuss why this is something that social variables will continue to struggle with as long as there is an international system.

The principal barrier to states ever setting aside their inclination to guard against each other and instead embrace each other as “friends”—no matter how strong their leaders’ or citizens’ desire to transform the culture of international anarchy—is uncertainty over others’ intentions, particularly their future intentions.61 Following the logic of the prisoners’ dilemma, a state62 that trusts that another means it no harm while the other state concludes that it now has an opportunity to pursue advantage may be punished severely for its complacency, rendering such trust perilous, particularly in security affairs, where defection from cooperation could result in the end of the “game” for one party.63

The meaning and implications of this “uncertainty” assumption merit consideration, however. Human beings are constantly trying to impose certainty on a contingent world via cognitive heuristics and neural shortcuts, for the sake of their own mental well-being.64 Indeed, since humans derive meaning and value from the self-imposed certainty of ideational reinforcement, so too they can derive benefit from the entrenchment of both amity with and enmity against “others,” even when this creates other complications and dangers.65 As a result, much of international politics is influenced by habit, both the habit of friendship and the habit of animosity.66 “Uncertainty” also means different things to different people: for realists, it is a condition from which to infer fear about others’ possible behavior; for constructivists, by contrast, it may simply refer to the inherent indeterminacy of information until it is imbued with social content.67 It may be possible to build trust in others’ benign intent over time and thereby escape security competition, meanwhile, through their costly signaling: forgoing capabilities and policy options that a potential aggressor would not want to do without.68 States can also have the certain “friendship” of those with whom they are balancing against a third-party threat, and if that threat is long-lived, then so too may be the certainty of alliance.69

Illustrating this “uncertainty about uncertainty,”70 consider one of the highest profile oft-invoked security dilemmas: the Cold War escalation of U.S.-Soviet hostility, during which the most seminal security dilemma theorization took place.71 Robert Jervis—one of the concept’s foremost progenitors—subsequently questioned whether the Cold War can be understood as a security dilemma after all, understood as a tragic cycle of mutual threat between nonrevisionist security seekers driven by uncertainty over the other’s intentions. Neither side was “uncertain” over whether the other was an adversary. And as subsequent archival revelations document, each side did want to destroy the other, and correctly inferred as much of its opponent.72

Jervis’s “recantation” of the Cold War-as-security-dilemma is itself bounded, however, and this bounding sheds light on the ways in which varieties of uncertainty can still operate even between states with “certain” mutual intent. “Greedy” states versus “security-seeking” states are themselves binary ideal types that mask an underlying spectrum. Practically all states are greedy, in terms of wanting to improve their lot, if the costs are low enough.73 Conversely, few states are greedy to the point of total unconcern for security; not even Nazi Germany desired limitless global war. While there may not have been uncertainty over each side’s Cold War intent, therefore—enmity-driven desire to defeat and ultimately destroy the other—there was still uncertainty over underlying motivations. 74 A desire to exterminate an enemy population may entail quite different behavior than a desire for ideological supremacy, for example, and the two may therefore merit different policy responses, even though both fall within the domain of “hostile” intent. Such doubt over motivations—even within the cognitively “certain” domain of U.S.-Soviet enmity—still added up to a variety of security dilemma: the most salient question for Americans was not “is the Soviet Union an enemy?” but rather “what might Moscow do about situation X, in Y circumstances, at time Z?” The same is evident in major power politics today. Washington is not “uncertain” over whether or not China and Russia are its “adversaries,” defined in broad and obvious terms, but there is a high degree of uncertainty over what types of rivals they represent and their associated future strategic choices. Recognition of uncertainty’s nonbinary nature, in short, does not undermine the argument that states’ inability to know others’ future behavior with perfect reliability incentivizes them to worry about possible future dangers. Realists disagree over prospects for avoiding security competition through signaling motivations, of course,75 but all variants are united by recognizing the enduring significance of the balance of material power.76

On top of these qualifications to the uncertainty-over-intentions assumption come disagreements over the most appropriate response to such uncertainty. Conceding that we can never know another state’s future intentions with mathematical certainty, and therefore that the worst-case outcome—surprise attack by a concealed aggressor—will always remain a hypothetical possibility does not necessarily imply that security is maximized by treating such a scenario as likely. Provoking war for fear of possible future war is like committing suicide for fear of death, and given the balancing often generated by hostile behavior, provoking others into uniting against oneself through attempted power maximization can ultimately reduce one’s security.77 While worst-case contingencies always merit consideration, policy planning—particularly decisions over how much of the national resource base to devote to defense (“guns”) versus consumption and productive investment (“butter”)78—necessitates probabilistic calculations of the relative dangers of overarmament (provoking balancing alongside domestic economic immiseration) versus underarmament (attack by a better-armed adversary).79 Intense security competition can therefore be an irrational and self-defeating response to mere uncertainty over future intentions, in the absence of other threat data.80 Both “realist” and “constructivist” variables can feature among this threat data and therefore play a crucial part in determining the optimal strategic response to such intentions uncertainty, and that in turn conditions whether the potential threat posed by each side’s capabilities, be they latent or realized, manifests itself as a security dilemma. For many realists, the offense-defense balance of technology and geography determines whether uncertainty over others’ intentions merits military confrontation and determines the (in)stability of states’ strategic relations.81 For constructivists, the solidarity/enmity borne of sociocultural similarity/difference may be equally decisive.

But neither of these observations—that uncertainty neither carries a single meaning nor prescribes a single strategy—undermines the core claim that survival has a material base that necessitates continual security-motivated concern for one’s position in the balance of power. Survival may indeed be “multiply realizable,” with social/ideational variables informing the path taken, alongside various “realist” variables. But given all states’ need to safeguard a materially based hierarchy of interests without wholesale reliance on others’ politically contingent (and therefore capricious) benevolence—whether that be potential abandonment by erstwhile allies, potential attack by erstwhile neutrals, or potential coercion by either—their position in the balance of power will always remain relevant to their future security. And given that situation, the conditions for mutual threat and an associated security dilemma to re-emerge are unlikely to be permanently expunged, despite such a deterioration going unrealized indefinitely in many cases due to other overlying factors.82 Fear of future conflict—at least against some state, if not against any specific state—thus remains an endemic feature of international politics. And much of that is still down to the enduring concerns of structurally based realism: international-systemic anarchy, its absence of a reliable sovereign enforcer of global peace, and the associated dangers of offensively capable peers of unreliably benevolent intent.

Tellingly, while many contemporary states have achieved mutual “friendship,” they have rarely sustained it once the strategic factors holding them together—such as alliance against a mutual threat, shared membership of a great(er) power’s dependency network, or some other mutually beneficial exchange—have disappeared. This suggests that such “friendship” is as much a dependent variable (an outcome of realist balancing behavior) as an independent variable (a transformational force in international politics).83 Even within the zone of friendship that had come to characterize the European “community” by the late 1980s, for example—probably the deepest case of intersubjective recognition, cooperation, and sovereignty pooling to date—Britain and France still worried intensely about the potential power imbalances created by German reunification, and they were not content until reunified German power was subordinated via a restated US commitment to NATO.84 As noted previously, moreover, via both Trump and Brexit—ideationally motivated shifts in foreign policy orientation85—Euro-Atlantic security relations have recently displayed a dramatic backsliding, raising the specter of alliance breakdown and coercive confrontation. The relative power of all sides is critical to their ability to resist/dispense such coercion and safeguard future security even in the possible absence of alliance support. Even within the EU, the ability of members to resist or dispense coercion comes down to relative power: witness Greece’s experience at German hands in the context of the Eurozone crisis, and contrast it with the lack of sanction for Franco-German breaches of EU rules.86 And between NATO and Russia, a 1990s moment of optimism over developing friendship has retrenched to coercive confrontation as an outcome of each other’s choices.87 All these developments—which can be interpreted as negative movement along the spectrum between cooperation and conflict—illustrate the continuing centrality of relative power to safeguarding a hierarchy of national interests without dependence on the changeable commitments of others.

As a consequence, the base conditions for the security dilemma will always exist between sovereign states under anarchy, even if it lies wholly dormant for most states most of the time, thanks to overlying factors. Interstate friendship does not render deterioration to a security dilemma impossible, and neither does interstate animosity preclude stable and durable cooperation.88 So while identity—which in any case is “sticky” and slow to change—certainly matters to security relations, it is unlikely to trump some combination of power and informational variables.89 Of course, if international relations were transformed by the emergence of a single world-state, the system would no longer be anarchic and the units-formerly-known-asstates would not need to rely on relative power for their security, and thus such competition would end.90 That requirement, however, does not look likely to be fulfilled anytime soon.

Conclusion

Conflict and cooperation is not some binary “either/or” condition, but rather a spectrum. So too the security concerns borne of uncertainty over motivations are not some irreversible “on/off” switch, be that permanently severe or permanently solved. There is certainly far more peace in the world than the most pessimistic readings of realism would seem to imply,91 and ideational similarity and solidarity—as well as the power and informational variables beloved of realists—clearly have something to do with this. Interests within the parameters of continuing to survive are socially constituted, and even the route to survival itself represents an ideationally informed choice. But the need to safeguard a materially underpinned hierarchy of interests if states are to continue to exist—a necessary prerequisite to performing any kind of social role—still incentivizes them to value their position in the balance of power as a safeguard against future dangers. Of course, states can and do disregard certain incentive structures in favor of others.92 But until all states are known to have done so—a high bar indeed—the potential for security competition to re-emerge in the international system will continue to exist. And knowing that, states will continue to prize the capabilities to provide for their own security . . . and so on, creating enduring conditions for security dilemmas to one day reappear, even though they go overlain by other factors in most international relationships most of the time.

Both realists and constructivists therefore have work to do, in terms of both refining their paradigmatic cores and recognizing the necessity of analytically eclectic cross-pollination to explain many of the most pressing questions of real-world international politics. Realists must do more to incorporate identity as a variable that produces systemically significant variation in behavior rather than as some adjunct bolt-on, whether that be via the post-1990s boom of neoclassical theorization or attempts at microfoundationally elaborated structural realism.93 Porter’s work on the interaction of power and habit in determining US grand strategy is a good recent example, while—as noted earlier—Snyder’s Myths of Empire remains a key benchmark.94 Constructivists, for their part, must continue to investigate the relationship between states’ potentially infinite array of socially constituted interests, their materially underpinned hierarchy of core survival requirements, and the enduring concern for relative power that the latter generates. Along the way, both sides must be circumspect in their appeals to allegedly “smoking-gun” examples. For realists to claim that structure alone explains World War II or the Cold War, for example— missing the universalist ideologies of German Nazism, Soviet communism, or US liberalism—would be a stretch indeed. Equally, constructivists’ most beloved examples—amicable US-Canadian relations along an easily passable land border, the relative underarmament of Germany and Japan, greater American fear of a few North Korean atomic bombs than hundreds of British thermonuclear warheads, the rise of European Union, and so forth—can all be readily explained with reference to balances of capability and information. “Analytic eclecticism” is easy to profess, but the most pressing contemporary questions of world politics require that theorists practice it too.

For those not interested in resolving paradigm wars or “isms” debates, meanwhile, the intersection of material-structural pressures on state behavior with socially constituted foreign policy preferences provides ample scope for investigating crucial real-world questions of our time. Viewed in rationalist terms, this might involve investigating the role of social variables in informing leaders’ utility functions, and thus their preference orderings under the overall structural constraint of needing to ensure continued survival. Just how far could the United States meddle in the Middle East at the behest of domestic interests, for example, before it critically harmed its power position vis-à-vis China? Extending the previous point, has US unipolarity created unique space for a “crazy” foreign policy that disregards the balance of power—both by the United States itself and by close US allies—and will this change if or when unipolarity wanes?95 Relatedly, just how far can the likes of Germany and Japan sustain their pacifistic foreign policy orientations in the face of US relative decline or disengagement and the likely associated need for them to provide more for their own security? Changing tack, how does a small power like Sweden—say—make its trade-off between providing mobile forces for an EU Battlegroup (a cause it values), on the one hand, and maintaining large amounts of conscripts and armor on its eastern border to hedge against Russia (a threat that it cannot be rid of), on the other? Are UK efforts to rebrand as an “aid superpower” facilitated by a nuclear deterrent and the US alliance, say, providing leeway to follow an ideational foreign policy under the cover of a “good enough” military umbrella? In short, there is scope for any number of midlevel theories of foreign policy under the constraint of still recognizing that interstate balance-of-power considerations continue to structure the international system.

### AT: Research Agendas

#### Centering research agendas locks debate in the ivory tower.

Sterling-Folker, 15—University of Connecticut (Jennifer, “All Hail to the Chief: Liberal IR Theory in the New World Order”, International Studies Perspectives (2015) 16, 40–49, dml)

Alternatively, we could become even more radical in our diversities and challenges, by rejecting participation in all forms of disciplinary practice and/or staging a full-frontal assault on the liberal analytical edifice. Doing so remains true to alternative normative and epistemological commitments, but prior frontal assaults (by IR postmodernists and feminists, for example) do not instill much hope in successfully shaking the foundations. As Taliaferro bluntly observes, “by waging war on positivism, rationality, and realism, postmodernist scholars have marginalized themselves” so that “instead of engaging” with postmodernists, “most scholars (even their fellow constructivists) are quite content to ignore them” (2001:260). This outcome is as much about the epistemological and normative commitments of the discipline as it is about postmodernism and, in any case, it is a pattern of all post-Cold War IR theorizing, not just postmodernism. As Sylvester notes, “debate, once thought of as a disciplinary sport, is now mostly confined to within-camp issues” and “collaboration across camps is not the norm” (2013:615). The result, as she observes, is that, “ironic as it might be, the professional IR camp scene today can seem conservative even as it is liberating: there is a whiff of neoliberal privatization and self-aggrandizement in its smoky air.” Hence, radical assaults are defused by becoming disciplining camps themselves, inwardly focused and thereby ensuring their own marginalization within the larger disciplinary context dominated by liberalism.

### AT: Science Ks

#### Science and tech have liberatory potential—researching and debating their nuances enables sustainable futures. There’s no offense—we don’t uncritically invest in them, but refusing to engage makes their worst outcomes more likely.

Voulvoulis and Burgman, 19—Professor of Environmental Technology at AND Director of the Centre for Environmental Policy, Imperial College London (Nikolaos and Mark, “The contrasting roles of science and technology in environmental challenges,” Critical Reviews in Environmental Science and Technology, 49:12, 1079-1106, dml) [ableist language modifications denoted by brackets]

Science has a role to play in helping us understand why we are where we are (State A), and how far this is from where we should/desire to be (State D), as defined by society. The complexity of environmental problems denotes that understanding is a prerequisite for solving (Pavlovskaia, 2014). Beyond appreciation of diverse knowledges, ideas and values of sustainability, there is a need to “take plural pathways seriously,” as no matter how specific the context, there is never only one relevant, viable path (Scoones et al, 2018). To allow for this and enable the appropriate technology, Funtowicz and Ravetz (1994a) proposed extending the peer community to include scientists together with industry, government, citizen groups and environmental organizations (Funtowicz & Ravetz, 1993; Funtowicz & Ravetz, 1994a, 1994b, 1994c).

This way of looking at sustainability allows the distinction between science and technology and reveals the important role society needs to play in the process of change (Bengtsson, Alfredsson, Cohen, M, & Schroeder, 2018). It also explains how technology could potentially serve as an instrument for control and domination when the desired state is not defined by the many but a few (de la Sablonniere, 2017). Environmental policies require public participation and engagement to define the desired state and goal for technology, offering the opportunity to integrate multiple perspectives in policy-making and environmental governance (Steyaert & Ollivier, 2007). To some extent, public participation in policy formulation and decision making (Wright, 2005) can also alleviate problems of poor communication (Cummins, Kintsch, Reusser, & Weimer, 1988; Lindenmayer & Likens, 2010; Bråten, Braasch, & Salmeron, 2016) or lack of public engagement (Jenkins, 1994; Wooden, 2006). For this, the public needs to be able to understand, be informed and be given access to all the evidence (Evans & Durant, 1995). Communication of science is about policy, ethics, politics, identity and power (Fischhoff, 1995). Messages of apocalyptic peril and emotional appeals might be effective in addressing public apathy and inspiring change but could also engender distrust or disenchantment (Wynne, 2006), and deliver short-lived results. Efforts to isolate the technical or scientific issues often falter because of their narrowness and the ways in which the resulting communication is disconnected from human experience (Slovic, 1999).

Science’s potential to empower lies in participatory practices that encourage shared knowledge, collaboration and shared ownership (Elcock, 2014). The relationship between science and the public does not need to be one of blind [uncritical] trust. Scientists are not and should not be seen as modern priests, experts who pronounce on all manner of things with scientific knowledge as the ultimate authority (Martin, 1991; Walton 1997). Contrary to popular depictions of science, science does not rely on authority as an indicator of truth (Hardos, 2018). Results should always be subject to challenge from experiment. Science is liberating if it produces knowledge that empowers people to challenge dogma and beliefs. “Knowledge itself is power” said Francis Bacon in 1597, and in the same vein, in 2003 Nelson Mandela stated that “education is the most powerful weapon we can use to change the world” (Baggaley, Calleja, Marum, & Marum, 2013). There appears to be a pressing need for people not simply to accept and implement new policies but to understand and appreciate the need for the change and the benefits it delivers.

Addressing environmental challenges requires looking at all relevant research, understanding socio-ecological context, integrating diverse evidence, and engaging with the public to solve problems or make policy. Engaging with dialog can reach more useful and appropriate outcomes. Environmental technology has a distinct role, applying science, policy, engineering and social change to address environmental challenges and deliver sustainability. Environmental issues require a new generation of technologists who have the ability to mediate, understand social context and constraints, and orchestrate participatory activities that engage and empower people (Clark, Steen-Adams, Pfirman, & Wallace, 2011). These innovators should have skills that go beyond disciplinary expertise (Table 1) and be equipped with tools to reach across cultural, political, and disciplinary boundaries. They will facilitate public participation in environmental decision making about what should be achieved and how, increasing problem ownership and thus the chances of both proposition acceptance and implementation success. They will enable people to understand and better define sustainability challenges based on the available science and empower them to respond by inducing the appropriate necessary changes.

5. Discussion

The distinct roles of environmental science and technology in addressing humanity’s sustainability challenges, can be better understood when considering the different nature of science and technology. The contribution of science, as a curiosity-driven endeavor, and that of technology, as invention and the application of knowledge (Smith, 1994), have resulted in numerous discoveries that have improved the quality of human lives (Bradford, 2015). Science is driven by curiosity, and technology by utility, both are necessary and interdependent, and while they clearly complement each other, they can become dysfunctional when they converge (Linden, 2008). Science is more than a source of technology, and technology cannot solve environmental problems just by applying scientific knowledge. To ensure that scientific progress delivers benefits, we need to invest in systematic ways to apply scientific knowledge to the many challenges we face, to invest in technologies that not just address sustainability challenges but create sustainable futures for all. Many “scientific” solutions have failed when experts applied explanations and solutions out of context to physical conditions or social behaviors (Forsyth, 2011).

The environmental science-technology convergence we see today, limits both science’s potential to deliver knowledge and technology’s to deliver change, and leaves the public confused in terms of what to trust and believe. The pressure on science to serve environmental policy and deliver fast, tangible, and useful results to industry or society, can shape scientific agendas (Koppelman, Day, Davison, Elliott, & Wilsdon, 2010), compromising curiosity-driven research, threatening the autonomy, impartiality and neutrality of environmental science and biasing research design (Parkhurst, 2016). Scientists are increasingly under pressure to communicate their research better, to interact with the public, and prove the “societal impact” of their work (Cairney, Oliver, & Wellstead, 2016). They are often criticized for being unable or unwilling to demonstrate the impact that policymakers demand, industry requires, and society needs. While many resent this, they nevertheless have engaged more with industry and policymakers (Poppy, 2015), who are no longer willing to hand over billions of pounds of taxpayers’ money in exchange for a vague promise that something good will come from it (Dudo & Besley, 2016). Still, many scientists view themselves as neutral, disinterested and objective. They aspire to fill the role of the rational and authoritative arbiter of environmental disputes, often potentially unaware that they are also prey to a host of psychological and contextual frailties (Burgman 2015b). Despite the shared ambitions of many scientists and policy-makers about the role of science in environmental policy, the evidence environmental scientists produce often is not what policymakers require (Burgman, 2015a). University-based scientific research is rarely tailored to policy-makers’ objectives and constraints (Fleming & Sorenson, 2001; Burgman, 2015a). The majority of environmental science research has failed to engage with the political nature of decision making and environmental scientists rarely influence how evidence is used (or misused) (Parkhurst, 2016). On the other hand, when scientific opinion becomes irrefutable, it generates what Walton (1997) called a culture of technical control. In this paradigm, the solution to decisions about new technologies, for instance, is seen to be through public education so that the correct scientific solution is transferred directly into correct policy (Burgman, 2005). There is a naked assertion in this situation that the identity of the proponent warrants acceptance of the proposal (Walton, 1997).

Then again, when environmental science is driven by policy its reputation in many contexts relies on its ability to deliver successful outcomes on environmentally pressing issues. It is increasingly considered to be more reliable and valuable when enhanced by social, industrial and government influences, rather than when protected from them (Sarewitz, 2016). Concerns have diminished that this reflects a gradual shift from scientific freedom towards an emphasis on objectives, designated by the economy or society’s current requirements (Pinto, 2015). The view that the primary aim of science is to seek the truth, is often considered the “myth of purity,” in contrast to the idea of a “well-ordered science” whose principle intention is the satisfaction of social preferences, or the protection of the natural environment in the case of environmental science (Kitcher, 2001). This has led to concerns that environmental science’s internal quality control mechanisms could be impaired by political and economic incentives (Berg, 2010; Stephan, 2012) or ideologies such as environmentalism. The economic benefits derived from the development of novel, successful technologies, contrast with broad-based “curiosity” oriented research (Karle, 1995). Policy makers should not drive scientific agendas, and academia should avoid proselytizing, instead providing vital substance for discussion and debate (Bell, 2017).

The line between environmental science communication and advocacy is diffuse. Ideologies are a means by which people organize themselves to attempt to make the world a better place (Gee, 2015). Unfortunately, scientific training does not always guarantee rational, bias free, evidence-based reasoning. Kahan (2013) observed in debates about climate change and biological evolution that many people adopt a position, one that accords with the views of their peers or their social context, and then select scientific arguments to defend that position. A person’s scientific or technical training do not protect them from post-hoc rationalization. Instead, technical training only serves to help them to use selective scientific evidence more effectively. Climate scientists have been challenged on their objectivity, by skeptics within politics, the media, and the public (Skoglund & Stripple, 2018). While most evidence indicates that such accusations may be overstated (Bromley-Trujillo, Stoutenborough, & Vedlitz, 2015), with no strong indication that the scientific community is blurring the lines of scientific objectivity, there remains a risk that a significant increase in advocacy by scientists could be an unwelcome change, decreasing the likelihood that their discussions of the risks of climate change would be believed.

A key accelerating factor for this is public scientific literacy. Arguably, education is the most important application of science, the technology with enormous potential to address the challenges facing humanity. But the convergence of science and technology has had a profound effect on education too. It has become an instrument for economic progress, moving away from its original role to provide context for human development (Kromydas, 2017). Producing graduates for both science and technology markets’ needs is a challenge, as the skills of scientists are not the same as those needed to address environmental challenges (Table 1), and for society to progress sustainably it needs both. Science funding increasingly encompasses a cycle that moves from discovery to invention to adoption and back again; a model that aims to break down disciplinary walls (Jasanoff, 2010), but does not acknowledge barriers to collaboration. Effective collaboration depends on training in interpersonal skills including building trust, communication, listening, leadership, creative problem solving, decisionmaking, and conflict management. Successful translation of science depends on systems that encourage lasting personal relationships; shared research agendas and priorities; mutual respect that arises from working closely together to deliver research outcomes; reciprocity and personal interactions between policy-makers and scientists (Burgman, 2015a). Most scientists are unlikely to cross this divide unassisted. Instead, immense pressures on scientists arise from the commercialization of scientific research, measures of performance that generate perverse incentives, and economic or ideological drivers shaping scientific agendas. These predispose scientists to conditions that lead to the erosion of public trust (McGarity & Wagner, 2008).

The process of turning knowledge into change cannot be undertaken without significant effort (Ostrom et al., 2010). An American Association for the Advancement of Science review (2016) showed that a lack of knowledge undermines public support for science as an institution, promotes opposition to action to address problems like climate change, and fosters reservations about scientific advances and emerging technologies (Nisbet & Markowitz, 2016). Others have also reported that civic science literacy is positively associated with public support for scientific research and for federal funding for science and technology (Lee, Scheufele, & Lewenstein, 2005). Thus, science may have a critical role to empower the public to engage in change (Kirkman & Voulvoulis, 2016).

Science is a deliberate, rational process, but for those seeking to understand, manipulate or build systems, their “complex” nature often demands approaches that go beyond reductionist scientific models or traditional engineering design methods because of their unpredictability, non-linearity, interconnectivity, hierarchy and “emergence” (Bale, Varga, & Foxon, 2015). For environmental solutions to be effective, interdisciplinary research should couple human and natural systems. Technological change is a multi-layered process that unfolds unevenly in time and space, often beyond individual scientists’ perspectives (Sorensen, Bloch, & Young, 2015).

While there is a clear role for environmental science in the production of knowledge, environmental technology has a distinct role in facilitating social change. There is a need for a new breed of professionals who are able to make practical use of results, bring public understanding to the support of science, teach, negotiate, facilitate and deal with complex ethical and policy issues (Tobias, 1997). They will apply knowledge delivered by science, bridging the gap between science and society, without putting academic freedom at risk. Environmental technologists will engender participatory thinking together with a more holistic understanding of the ways we depend on nature and the ways nature is affected by people, informing technology assessments and developments. They will engage with policy makers, stakeholders and the public, to better define environmental problems, and support society to implement the integrated, interdisciplinary and holistic solutions required to deliver real change. This process may require transformative innovations, changes of industrial practices, and new environmental policies. Environmental challenges require a new contract between science, technology and society, one that recognizes the importance of all three and delivers synergies enabling all of them to reach their full potential.

### AT: Tech Controls Desire

#### Cybernetics don’t overdetermine the psyche.

Beardsworth, 10—Head of the School of Politics and International Studies and Professor of International Politics at the University of Leeds (Richard, “Technology and Politics: A Response to Bernard Stiegler,” Cultural Politics (2010) 6 (2): 181–199, dml)

Just as Stiegler gives us a technological reading of political economy, so he also gives a technological reading of libidinal economy. (They are obviously one and the same reading given his synthesis of both to describe the specificity of cognitive capitalism; I have broken them down here for analytical purposes.) Since the 1990s Stiegler re-thinks the Freudian problematic through technics (see Stiegler 1996b). Technics constitutes the condition of sexuality qua desire. This critique of Freud inscribes the whole of the psychical apparatus within the technical history of epiphylogenesis. It is clear that human sexuality has both evolved and is altered through technical developments. Stiegler is right to insist, with the paleontologist Leroi-Gourhan and Gilles Simondon, that hominization is a technical process of evolution and psychic and collective individuation. That said, sexuality is not reducible to technics. Human sexuality, together with the problematic of desire that it underpins, both transcends technological determination and is itself dependent on many variables. There are depth psychological constants (for example, the Oedipus complex) that determine the transgenerational legacy of the id beyond technical evolution. To argue otherwise (as Stiegler does; see 1996b) is not to engage with the autonomy of the depth psychological. What with the neurosciences' penetration into the mind–body complex, we are probably only now beginning to under stand this autonomy and multi-causality.

Stiegler is therefore correct, following Herbert Marcuse, to place technics within the evolution of sexuality and the vagaries of desire. There would be no Oedipus complex, specific to human animals, without the technological evolution of the human. But he goes too far when he makes the relation between technics and desire one of unilateral determination. The above argument that the “psychotechnologies” are attempting “to control the id,” if not “the psychical apparatus in general” (2009: 31), is one consequence of this unilateral determination. This is another technologically determinist judgment. It makes a background condition (technology) into a radical determination of the psychic apparatus as a whole. Such determinism tempts Stiegler into arguing for a general “crisis of spirit” at the moment of cognitive capitalism.

Let me recall in this context that, for Freud, sublimation (the turning of desire into law) constitutes a complex process that is dependent on many contingent factors. In distinction to all other animals, humans sublimate because they are diphasic: we undergo the latency period and, therefore, puberty—due, without doubt, to our technological specificity. As a result of this diphasic nature, the human animal turns its love of its protectors into an identification that, with the reversals of puberty, comes to structure and occupy the space of the superego. Identifying with our parents (and their parents, etc.) or taking distance from them constitutes, from the beginning, a complex process of love and hate that may lead, from puberty onwards, to too rigid a superego or too dissipated a one (or rather, to variations in-between). Freudian psychoanalysis suggests that it is very difficult to generalize with regard to this development. The absence of identifiable, recurrent, and protecting love can indeed create an uncoordinated psyche. It leads, in this case, to other forms of parental identification that are always ongoing in the infantile years precisely because the id transcends technically organized memory. Until the nuclear family is literally dissolved and not replaced by another form of social organization, we cannot consequently speak of a new generation that has lost its primary identifications and, therefore, following the Freudian logic of sublimation, lost a sense of the future, of law, and of justice. There are too many variables at play within the depth psychological dynamic of infantile protection and care for Stiegler to be so clear. Under new conditions of technology, one must be proactive and prudently regulate Internet flows (regarding collective security, obscenity, etc.). One must, however, wait to see what new forms of parenthood adopt the hyperindustrial support and what new forms of sublimation will come to structure the coming generations' sense of conscience. These new forms may be weaker than either traditional or modern forms of the close social bond. But this cannot be a cause of excessive concern—unless this polemical pitch is judged to be the right means to attract political concern and change public policy (and even here, I am unsure that it is). Ontologically speaking, these forms may lead to more innovative and creative behavior as much as to destructive and self-destructive behavior. I am arguing that we cannot know at this very early stage of our hyperindustrial age, although Stiegler is nevertheless right to call for critical synthesis. The political adoption of the hyperindustrial support will take time—as did monotheism to adopt non-orthographic writing and the social contract to adopt the alphabetical word.

The above uncertainty regarding the direction of the contemporary technology–human symbiosis constitutes, in Stiegler's terms, the “ambivalence” of technology. In Freudian terms, it is more simply the complexity of the human mind–body complex (on these themes, see Beardsworth 1996b). In these processes there is a constant dialectic between “negative” and “positive” sublimation: here, the reduction of law to capitalism on the one hand, and the embedding of capitalism within artistic and legal forms on the other. Stiegler cuts the knot of this ambivalence too quickly, or rather, generalizes too fast from almost exclusively French examples of de-sublimation (see Stiegler 2008a, esp. on the advertising techniques of Canal J.).

Regarding Freud, I would argue, in sum, that Stiegler gives a strong, original reading of contemporary affective life through the bridging of technology and the psyche. Conversely, it is a technological re-reading of Freud that flattens out the vagaries of human affect and human conscience, preventing a nuanced, comparative account of the relation between contemporary consumerism and normative thought and behavior. As a result, public education may be posited too quickly by Stiegler as the right political response.

This is not to deny the need for change in public education: far from it. The Internet clearly poses a problem. As the contemporary teacher knows, Internet-surfing produces a form of consciousness that is adept at “copy and paste,” but finds synthesis and judgment increasingly difficult. Stiegler's politics of critical reflection, with its emphasis on the vital role of education, is in this sense persuasive. That said, I would wish to keep a sense of global perspective. As is well-known, use of the Internet was crucial to the election of Barack Obama: it helped create a cultural transformation that proved strong enough to shift the American political landscape to the center. The use of mobile phones has transformed the electoral process in West Africa. The Internet is, in other words, already highly creative politically. Education must certainly help to supplement this emerging creativity with the art of judgment. Obama's domestic fate regarding healthcare reform since the campaign has shown, at the same time, how powerful the traditional media remain in shaping political perception and interests. Progressive liberal politics in one of the most technologically savvy of countries depends as much today on restructuring the power-bases of the traditional media as it does on providing an education in response to capitalist-led technological transformation of human memory. Stiegler would not disagree with this last point. As I said at the beginning of this paper, his political voluntarism was in the 1990s singular on the French theoretical continent. It means, to my mind, however, that philosophico-political reflection should consider the political adoption of technology at several levels of analysis and of policy, in a spirit of prudence, and with a sense of intellectual limits.

Conclusion

I have addressed the work of Stiegler through the names of Marx and Freud. In doing so, I have attempted to suggest that his work goes too quickly over what puts a break on the destructive side to capitalism. The future political project of democracy is, without doubt, to embed capitalism at the world level. And democratic freedom means that one must renounce gratifying one's immediate desires. This means political institution and self-restraint. Stiegler focuses rightly, and sometimes brilliantly, on the urgency of the political today, and on the importance of a political adoption of contemporary forms of industry within a general intellectual framework of retentional finitude. This latter framework of analysis is theoretically innovative and disciplinarily rich. Not to analyze the forms of institutional change at the appropriate level and not to give credit to the specificities of sublimation within capitalism tend, however, to make capitalism's field and dynamic too uniform, and Stiegler's responses to it too unilateral and too general (if not, too French). As a result, his theoretical world turns too quickly, at the precise moment when a slower speed and a finer set of distinctions are needed. Not that there is not enormous danger in our present world, not that a sense of urgency is not vital. Our description of it requires, however, theoretical terms that exposit it in its complexity so that theory can provide, precisely, the occasion for suitable political adoption and decision.

### AT: Unsustainable

#### Tech innovation doesn’t doom liberalism, it makes it sustainable. We control uniqueness because abandoning liberal epistemologies cedes technology to authoritarians.

Crawford, 21—founder and CEO of Roots of Progress (Jason, “Why Liberals Should Care About Progress,” <https://symposium.substack.com/p/why-liberals-should-care-about-progress?s=r>, dml)

The case for a free society is a broad integration across many subjects, including history, economics, and moral philosophy. Central to this integration is the topic of human progress—specifically, the scientific, technological, industrial, and economic progress that has been dramatically raising standards of living around the world for over two hundred years. Understanding the history, nature, and causes of progress should be a focus for anyone who wants to defend philosophical liberalism, for three reasons.

First, the history of progress is a validation of the modern world and its institutions.

Since about 1800, most of the world has escaped from poverty. In the industrialized world, the average person, who once lived without refrigerator, toilet, or running water, now has all of these conveniences; many also enjoy a vacuum cleaner, dishwasher, and microwave. Working conditions have improved as jobs moved from farms to factories to offices and as machines took over physical labor, while working hours declined from over 60 hours per week to under 40. Famine, once relatively common, is only a distant memory in most of the world. Where almost 1% of mothers once died in childbirth, and half of all children died before the age of fifteen, child and maternal mortality today have plummeted by orders of magnitude. Speedy powered transportation and instant electronic communications have connected the world like never before, to the benefit of commerce, science, education, and cultural understanding. And the ability for the majority of the globe to access virtually the entirety of world art, literature, and philosophy has enabled unprecedented intellectual and spiritual enrichment.

These benefits have not been shared evenly, but they have been shared broadly. Every country on Earth today has a life expectancy higher than any country did in 1800. Every continent has now achieved a food supply of over 2,600 calories per person per day. And global poverty is declining by almost any metric you choose—not only in relative terms, but by many metrics, in absolute terms as well. (And no, it’s not just China.) All of these metrics still have a long way to go, but they have come far in the last two centuries—further than they had in all the millennia before.

These grand achievements are due at least in part to liberalism: free markets, free trade, free migration, and most fundamentally the free and open exchange of ideas.

The enormous economic growth was due in large part to increases in productivity which were brought about by private enterprise: the spinner and weaver left their cottage industry to operate machines in factories; the farmer traded his horse-drawn plow for a gasoline tractor; the blacksmith laid his hammer down upon his anvil and took up the steel rolling mill and press. But for such enterprises to thrive, old institutions had to be dissolved: the restrictive guild system, which often opposed new techniques; the arbitrary granting of royal monopolies; the corvée system of forced labor. More importantly, new and better institutions had to be created. The railroads, representing a massive buildout of transportation infrastructure, depended on the new legal form of the limited-liability corporation to raise the required capital. And inventions, from the cotton gin to recombinant DNA, depended on the protection of the patent system.

Industrial civilization is also founded on science: the thermodynamics of engines, the electricity that powers lights and computers, the chemistry that fertilizes our crops, the antibiotics that cure disease. The birth and growth of science, starting around the 16th century, was based on a new epistemic principle: a commitment to reason and empiricism. But it was also based on a new social principle: a commitment to free and open debate. To embrace reason and empiricism, the leaders of the Scientific Revolution needed to shove aside tradition and authority. Scientists had to be free to speak against revered but mistaken theories, from Aristotle’s physics to Ptolemy’s geocentric astronomy to Galen’s “four humors.” The motto of the Royal Society, Europe’s premiere scientific institution of the 17th century, was nullius in verba—“on no one’s word.”

Both free enterprise and free thought were aided by the free movement of people between nations. Migration protected heretics: If during the religious wars they were persecuted in a Catholic country, there was often a Protestant country happy to take them in, and vice versa. Descartes wrote his Meditations in the Netherlands when religious intolerance was growing in France; Hobbes wrote Leviathan in Paris during the English Civil War. Later, during the rise of capitalism, migration brought economic opportunity. Many of the most successful entrepreneurs were immigrants, from the Scottish-American Andrew Carnegie, who brought cheap steel to America, to the Turkish-German founders of BioNTech, Uğur Şahin and Özlem Türeci, who brought a COVID vaccine to the world.

The dramatic rise in global living standards, then, is a vindication of freedom in all its forms.

Sadly, not only is this achievement rarely celebrated, it is not even broadly known or believed. A 2017 survey asked people whether they thought global poverty over the last 20 years had halved, doubled, or stayed the same; only 5% of US respondents, and less than 10% of those in the UK, correctly answered that it had halved. And in 2015, fewer than 10% of people polled across several countries believed that “the world is getting better”.

Some even claim that technological and industrial progress have not on the whole been good for humanity. They argue that progress has destroyed jobs, that it ruins the environment, that it has created looming existential threats to our species, that it doesn't actually make people happier, and that in any case it is unsustainable. So Jeremy Caradonna asks “Is 'Progress’ Good for Humanity?,” Jared Diamond calls agriculture “the worst mistake in human history,” David Barash calls modern civilization a “Ponzi scheme,” Kate Raworth and Naomi Klein call economic growth an “addiction,” Clive Hamilton and James Gustave Speth call it a “fetish,” and Giorgos Kallis advocates an entire “degrowth” movement. On the right, religious traditionalists rail against the supposedly empty and thoughtless “materialism” of our wealthy, industrialized society.

If this were a fair assessment of progress, it would indeed be high time to overthrow liberal values and institutions and to replace them with a revolutionary new model for society.

Thus, a defense of liberal philosophy requires a defense of progress. It requires showing that, despite the real problems it has created and the challenges that lie ahead, material progress has been on balance a massive good.

The second reason why progress is central to the defense of philosophical liberalism is that the story of progress points us to a positive vision for the future. We can use science, technology, and industry to create a better world. We can cure heart disease, cancer, AIDS, obesity, mental disorders, genetic diseases, and even aging itself. We can design self-driving cars that will save time, eliminate road deaths, and make personal transit affordable to many more people. We can shrink the world further with supersonic passenger travel, going from New York to London in under four hours, or Seattle to Tokyo in under five. We can end air pollution and control the climate. We can colonize the solar system, and perhaps one day the galaxy. We can even reverse extinction and bring back the wooly mammoth (though maybe let’s pass on the velociraptors). We can “grow the pie” and make it possible for everyone on Earth to attain today’s highest living standards—and then continue to raise them.

But to achieve these things, we must set our sights on them. We must recognize that just as we today are fantastically wealthy compared to past generations, so too our descendants, generations hence, can be fantastically wealthy compared to today. This positive vision, beyond just a conservation of the values and institutions of the past, should be a large part of what motivates a defense of liberal philosophy.

Finally, the lessons of progress point the way to the solutions to the real problems of the modern world, the failures of its institutions, the justified criticisms of its elites.

The progress lens helps us see that in broad terms, almost none of our problems are new. Job loss, information overload, technology accidents, and environmental damage are all challenges we have tackled before. The solution to these problems—even the ones created by progress itself—is more progress. We can address climate change with new energy technologies (including nuclear and geothermal), carbon capture, and geoengineering. We can (and will) create new jobs to replace ones lost—and we can make reskilling easier and otherwise improve job mobility. Information technology gave us distraction, but better information tools can enhance focus; it took away our privacy, but it can also give us encryption and other tools to rebuild privacy stronger than ever. And we can obtain gene safety through responsible processes, thoughtful standards, and safety technologies such as those being developed by the Safe Genes program at DARPA.

Credible approaches to these concerns must be clearly articulated within the framework of liberal principles, and soon—or “solutions” will be offered from elsewhere on regressive or authoritarian principles. A deeper study of progress, especially how similar challenges have been dealt with in the past, can inform and inspire new solutions for the future.

More broadly, the growing attack on philosophical liberalism is fueled in part by a feeling that the world is in decline. This is reinforced by an increasing distrust of elites and institutions—including the ones that helped make the modern world, such as entrepreneurs and venture capital, scientists and universities, even courts and the rule of law. The feeling is that elites, institutions, and liberal values have failed us, that they offer no vision for the future, and no solutions to the problems they created.

The truth is the opposite: liberal philosophy has worked. It has created abundance, empowerment, and safety for all. It offers a compelling vision for the future, and the solutions to our problems and fears. Explicating this argument is central to defending the values of a free society.

#### Growth is sustainable—newest data that doesn’t link to their Ks.

Pearce, 22—environment and development correspondent for the Breakthrough Institute, writing regularly for Yale Environment 360 among others, citing Narasimha Rao, Associate Professor of Energy Systems, Yale School of the Environment (Fred, “Green Growth Won’t Kill the Planet,” Breakthrough Journal, No. 15, Winter 2022, dml)

Rao’s findings ought to have a profound impact on the divisive discourse on climate change, which continues to pit the attempts of developing countries to eliminate poverty by mimicking Western modes of development against many in the West who see this path as ruinous for the planet and ultimately self-defeating for the poor. They are both wrong. In truth, there need be no incompatibility. Ecomodernists are right: humanity can have its cake and eat it, too.

Rao, who grew up in a middle-class family in Mumbai but with poverty around him, is now at Yale University and the International Institute for Applied Systems Analysis (IIASA), an Austria-based intergovernmental think tank. He has spent years as what he calls an “interdisciplinary scholar,” addressing both technological advances and social equity and how they might interact.

He says that, until recently, little climate-change analysis, social research, or futurology has seriously addressed whether climate and living standards can be fixed together. Ecomodernists stepped in with strong belief in the power of transformative technology to both deliver abundant energy and break the umbilical cord linking prosperity to pollution. But theirs is a predominantly supply-side and top-down perspective, which can lead to a presumption that the benefits of prosperity and abundant energy will trickle down to deliver decent living standards for all.

Critics like Anna Walnycki and Tucker Landesman at the International Institute for Environment and Development say a top-down perspective risks increasing social and economic inequality unless “policies are shaped around the needs of ordinary citizens,” especially those in low-income urban communities. Moreover, as Rao points out, energy inequality around the world is even greater than income inequality. And by some measures, more income seems to only increase energy inequalities, according to analysis by researchers at the University of Leeds.

To grapple with such issues, Rao’s work, centered in the Decent Living Energy project, takes a bottom-up approach. It starts with an assessment of the hard material needs for eliminating poverty—particularly for the billion-plus people living in informal urban settlements without decent housing, sanitation, water, and other basic services—and does the work of separating out the energy needs for eradicating poverty from those to meet the demands of affluence.

In this way, Rao has added real numbers to the idea of a decent living, upending past global measures of poverty, which were removed from the real lives and material needs of the poor. The most widely used is based on the single metric of daily income per head. Once a dollar a day, the cutoff has now become $1.90 per day for extreme poverty, with a higher threshold of $5.50 per day used by the World Bank for upper-middle-income countries. Almost half the world’s population does not achieve this standard. But what you can buy with those dollars varies vastly round the world, as does what you need to purchase to achieve a decent standard of living. Other measures have looked to well-being outcomes, most influential among them being the UN’s Human Development Index, which is based on life expectancy, years of schooling, and income. But it does not set a threshold level, or measure what material requirements are needed to get to an “acceptable” (different from “good”) outcome.

Rao, with his colleague Jihoon Min, attempts to do better by identifying a shopping bag of material requirements, or “satisfiers,” that are as near as possible universal prerequisites for a decent modern life. They call these requirements “material conditions that people everywhere ought to have, no matter what their intentions or conception of a good life, or what other rights they may claim.”

Those material needs fit into 10 broad indicators of basic human well-being: nutrition, shelter, living conditions, clothing, health care, air quality, education, access to information and communication services, mobility, and freedom to gather and dissent. A person who achieves them does not necessarily have a life that a wealthy person in the West would recognize as comfortable. But they would have a life that could be called decent and dignified.

Many of these requirements derive from widely accepted benchmarks, but others go further. For instance, nutrition requires not just sufficient calories, but also vitamins and minerals and a refrigerator to store food safely. There’s also the need for a cooker that does not fill the home with smoke, part of the air-quality category.

Shelter and adequate living conditions require not just a roof over your head, but also sufficient floor space (depending on household size, typically 30 square meters per person), durable home construction, and sufficient heating and cooling equipment for “thermal comfort.” Also required is “sufficient clothing to achieve basic comfort” and access to a washing machine.

Health care and living conditions requirements include on-premises sanitation and water supplies (50 liters per head per day), plus access to adequate health care facilities and a minimum of one physician per 1,000 people.

The social well-being criteria include not just nine years of education, but also access to communication networks including one phone and one television or computer per household. These new needs, Rao and Min say, may not appear essential to life, but are “globally desired by an overwhelming majority of people,” so not to have them risks social disengagement and ostracism. The electronics need not be personally owned, they note, but access is vital.

The same holds for mobility, which they regard as necessary for social engagement and employment or selling wares. The decent living requirement is set at access to motorized transport, such as a bus or motorbike, sufficient for an average of around 25 kilometres per person per day.

Rao and his colleagues’ analysis of needs is often surprisingly granular. Current thinking holds that households of a similar income level around the world generally want the same appliances. His household surveys nuance that. While most people in most places do want a TV, cellphone, and refrigerator, his study with Kevin Ummel found washing machines are less universally desired, and ovens and tumble driers even less so. Race, culture, and religion are all factors. Patterns also differ depending on whether people live in urban areas and on the status of women; urbanity and greater equality both drive up demand for appliances connected with cooking and washing. People who consume a lot of milk products—such as Sikhs in India—want a refrigerator more than those who do not.

White people, Rao and Ummel note, are more fixated on white goods—that is, large electrical appliances. But they care less about motorbikes and some cooking equipment such as rice cookers, which are much more widespread in Asia.

It is impossible to say what proportion of the world’s population meets all Rao’s standards—or none. Some places far outstrip the basics. The average American has almost six times the “decent” level of floor space and consumes almost seven times as much water. Germans average four and 2.5 times those “decent” levels, respectively. But Rao’s estimates suggest that only two-thirds of people have attained half of them, with nutrition the most achieved and mobility the least. In fact, “the majority of the global population does not currently have decent levels of motorized transport,” coauthor Jarmo Kikstra of Imperial College London, has pointed out.

All this confirms findings from Rao and his colleagues’ analysis published in the September Environmental Research Letters that “more people are deprived of DLS [decent living standards] than are income-poor.” Worldwide, more than three billion people lack access to clean cooking options, space cooling, sanitation, and transport, and more than two billion lack cold storage, decent housing, and proper access to clean water.

In sub-Saharan Africa, over 60 percent of people do not have access to eight of the requirements for a decent standard of living, with deficits for cooling, sanitation, transport, water access, cold storage, housing, television, and clean cooking. In South Asia, over half the population lacks adequate sanitation, transport, cooling, clean cooking, water access, and cold storage.

Most standards are almost universally met in rich nations. Yet the data also show that a third of North Americans and 44 percent of Western Europeans miss out on transport needed for mobility, while in both regions about a tenth miss out on decent sanitation. This means that, around the world, in every corner of it, hundreds of millions of people need more, and no green transition that denies it to them could be considered sustainable or just.

The Cost of Decency

But can the gaps in access around the world be filled—and without crashing the climate?

To be sure, creating a world where everyone can have a decent living standard will require new public infrastructure and more private energy use. As Rao points out, much of the progress will only be achievable collectively—through public water supply and sanitation services, clinics, schools, public transit, cellphone networks, and so on. Much else will be best secured—and with lowest energy needs—collectively as well, with better public transport rather than an automobile in front of every house, for instance.

But the great takeaway is that truly essential needs are, as Rao says, mostly “cheap in terms of energy.” Doing some calculations based on the information in Rao and his coauthors’ Environmental Research Letters article, the infrastructure needed to meet decent living standards worldwide by 2040 will add less than 4 percent to current consumer energy demand. Half of that will be for improved housing, a quarter for public transit systems. Annual requirements to sustain those living standards would add a further 17 percent, making a total increase in energy needs to meet decent living standards of the world of just around 20 percent. That compares with an expected increase in energy demand, without ensuring decent living standards for all, of around 50 percent.

Put another way, these authors say, “essential energy needs to meet everyone’s basic needs . . . could constitute a small share of projected energy growth, namely, around an order of magnitude lower than current US energy demand.” And their analysis, the authors point out, assumes “only modest efficiency improvements, rather than relying on an ideal, high-tech future.”

The energy needed, in other words, may be even less than the headline figures suggest. For the poorest billion or so on the planet, reductions in deprivation will often come with reductions in energy use and environmental impact. Marta Baltruszewicz and her coauthors at the University of Leeds have recently shown from studies in Nepal, Vietnam, and Zambia that the households with higher well-being indicators used more energy than households with lower well-being. Without access to electricity or gas, the researchers found, low well-being households burned more firewood and charcoal than their higher well-being neighbors, resulting in more pollution and deforestation. And lacking clean drinking water, they were forced to constantly boil dirty water to make it safe. Overall, the study found that “households achieving well-being have 60%-80% lower energy footprint of residential fuel use” than the average in those countries.

The bottom line, according to Rao’s coauthor Alessio Mastrucci of IIASA, is that “we do not have to limit energy access to basic services. . . . even under very ambitious poverty eradication and climate mitigation scenarios, there is quite a lot of energy still available for affluence.”

Just how much, of course, matters a great deal for those of us in the rich world with energy-intensive lifestyles and a social conscience. But even before considering any energy technology transformation that can provide more power with fewer emissions, there is hopeful news.

The affluent still consume most of the planet’s resources, with the wealthiest tenth of the planet’s population consuming 20 times more energy than the poorest tenth. But there has been increasing discussion about whether some rich nations are reaching “peak stuff,” a tipping point beyond which material needs no longer rise with wealth—and may even fall. For example, Jesse Ausubel of Rockefeller University has long argued that Western societies in general are starting to dematerialize.

And the evidence is growing, as studies increasingly call into question the presumed ratchet linking wealth and energy demands. For example, Europeans consumed 18 percent fewer raw materials in 2020 than they did in 2008, according to the European Commission. The British government’s Office for National Statistics calculated that the personal materials footprint of the average Brit—in food, textiles, construction materials, metals, fossil fuels, and so on—fell from 24.2 metric tons in 2001 to 13.4 metric tons in 2020.

Some of this decoupling is due to long-standing trends in improved technological efficiency, combined with more recent digital innovation. A single smartphone replaces a computer, a compass, a newspaper, and an alarm clock—not to mention a radio, a camera, a magnifying glass, a flashlight, and a music player. One optical fiber can do the work of a thousand copper phone wires. Global digital camera sales have declined by 87 percent in the past decade, as cameras in phones take their place.

Both public and private consumption patterns are changing in other ways, too. In the public domain, the assembly of infrastructure tends to peak as economies rapidly industrialize, and then falls. (That is why China has, in recent years, consumed 20 times more cement than America, and around eight times more steel too.) Even US president Joe Biden’s trillion-dollar infrastructure plans may not reverse this, since those appear to have less to do with cement and steel structures than broadband connectivity and power grids.

And American consumers are increasingly spending their money on experiences rather than on disposable material goods, according to McKinsey & Company analysts. Their findings suggest that, whereas prior generations defined themselves through their possessions, we now define ourselves more through our experiences, both real and virtual. The new car in the driveway matters less than the vacation you take with it. We don’t eat more, but instead go to more and better restaurants. We don’t buy ever more cheap furniture; we buy quality. Other modern lifestyle choices may also drive down material and energy requirements: eating less meat, going to the gym, and meeting up remotely rather than in person, for instance. People were driving less even before the COVID-19 lockdown.

If such trends continue, and if energy becomes less carbon-intensive, it would not be a stretch to imagine a world that can achieve decent living standards for all with few environmental tradeoffs.

#### If we win this, it’s offense—sustainability’s only possible with the commitment to innovation that the alt rejects.

Crawford, 22—founder and CEO of Roots of Progress (Jason, “Can growth continue?,” <https://rootsofprogress.org/can-growth-continue-ignite-talk>, dml) [images omitted]

One argument against long-term growth is that we will run out of resources. Malthus worried about running out of farm land, Jevons warned that Britain would run out of coal, and Hubbert called Peak Oil.

Fears of shortages lead to fears of “overpopulation”. If resources are static, then they have to be divided into smaller and smaller shares for more and more people. In the 1960s, this led to dire predictions of famine and depredation:

But predictions of catastrophic shortages virtually never come true. Agricultural productivity has grown faster than Malthus realized was possible. And oil production, after a temporary decline, recently hit at an all-time high:

One reason is that predictions of shortages are based on conservative estimates from only proven reserves. Another is that when a resource really is running out, we transition off of it—as, in the 1800s, we switched our lighting from whale oil to kerosene.

But the deeper reason is that there’s really no such thing as a natural resource. All resources are artificial. They are a product of technology. And economic growth is ultimately driven, not by material resources, but by ideas.

In the 20th century, the crucial role of ideas was confirmed by formal economic models. The economist Robert Solow was studying how output per worker increases as we accumulate capital, such as machines and factories. There are diminishing returns to capital accumulation alone. A single worker who is given two machines can’t be twice as productive. So if technology is static, output per worker soon stops growing:

But technology acts as a multiplier on productivity. This makes each worker more productive, and creates more headroom for capital accumulation:

So we can have economic growth if, and only if, we have technological progress.

How does this happen? Another economist, Paul Romer, pointed out the key feature of ideas: In economic terms, they are “nonrival”. Unlike a loaf of bread, or a machine, an invention or an equation can be shared by everyone. If we double the number of workers we have and double the machines they use, we will merely double their output, which is the same output per worker. But if we also double the power of technology, we will more than double output, making everyone richer. Physical resources have to be divided up, so as the population grows, the per-capita stock of resources shrinks. But ideas do not. The per-capita stock of ideas is the total stock of ideas.

So we won’t run out of resources, as long as we keep generating new ideas. But—will we run out of ideas?

Romer assumed that the technology multiplier would grow exponentially at a rate proportional to the number of researchers. But another economist, Chad Jones, pointed out that in the 20th century, we have vastly increased R&D, while growth rates have been flat or even declining. This is evidence that ideas have been getting harder to find:

Does this mean inevitable stagnation? Maybe we have already picked all the low-hanging fruit. Maybe research is like mining for ideas, and the vein is running thin. Maybe inventions are like fish in a pond, and the pond is getting fished out. But notice that all these metaphors treat ideas like physical resources! And I think it’s a mistake to call “peak ideas”, just as it’s always been a mistake to call peak resources.

One reason, as Paul Romer pointed out, is that the space of ideas is combinatorially vast. The number of potential molecular compounds, or the number of possible DNA sequences, is astronomical. We have barely begun to explore.

And even as ideas get harder to find, we get better at finding them. As the population and the economy grow, we can devote more brains and more investment to R&D. And technologies like spreadsheets or the Internet make researchers more productive.