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The Politics of Cosmotechnics: Imagination and the Borderlands

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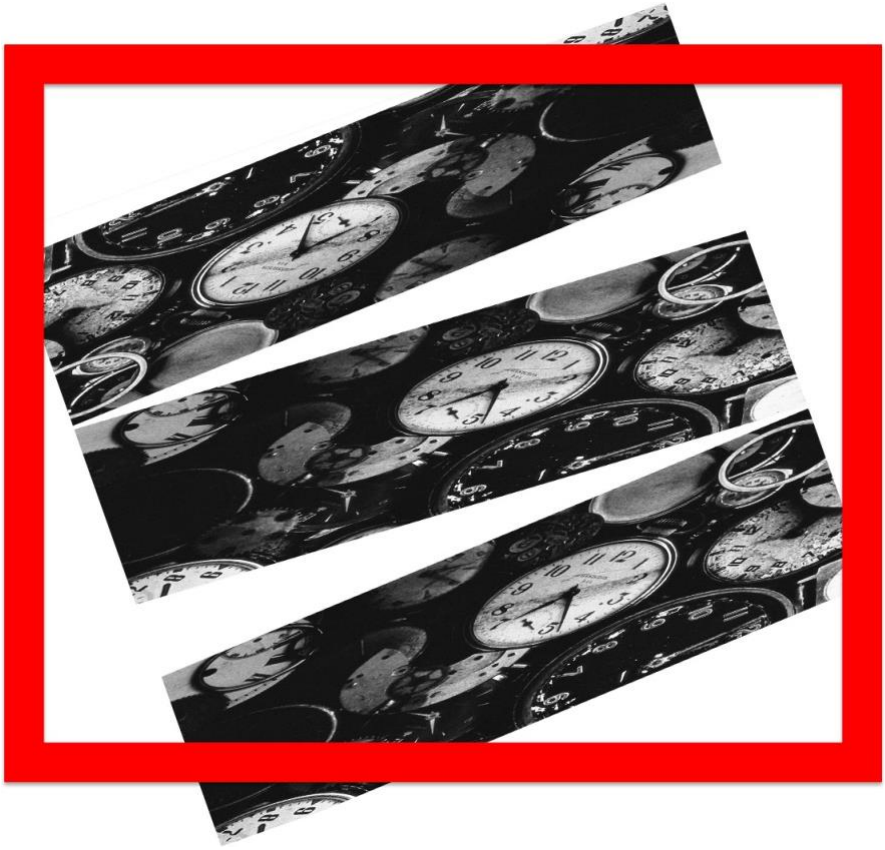

After placing what will be argued in the disjunctural time of the now, engagements with this moment will be presented in four parts. The first considers the problematics of the relation between the political, politics, and technology. In response, part two will outline the imperative of a new political imagination. Part three introduces cosmotechnics as objects and agents of political imagination that are directed at the technology/colonialism nexus in the context of the pluriverse. To conclude, part four puts forward the "borderlands" as the space of the political, action, and potential transformation via epistemological exchange and a nascent praxis. In response to this framing and the imperatives it details, cosmotechnics will be shown as historical grounds and future bases for the creation of a materiality of what will be concluded to be an "ecology of care."

. . .

When Hamlet said that "time is out of joint," he was expressing the view that the world was not sane and that things were not as they should be.[1] Jacques Derrida meditated on this declaration at length in the *Specters of Marx* (1994). But what is clear almost thirty years later is that the disjuncture Derrida drew from Shakespeare and brought to his present has now become more pronounced and serious. The insanity is more extreme, and any notion of returning to a world as it "should" be has gone forever.

Derrida also mused on how one is to translate the notion of "time is out of joint" (1994, 18). He recognized that "time and history" are disjointed and that so is the "world" (in its irreparability) (18). But for Hamlet, putting "thing" and "time" right was justice done, and this assumed a return to a condition of correct(ed) functioning. Things are different now: the current age is completely "disadjusted," and fundamental conditions essential to life have been corrupted. Wrongs now are not just of a moral order but are inscribed in the very condition of our species' material environments. They ever move toward, and beyond, biomalfunction, definable as the homeostatic imbalance of Gaia. So placed, the temporally plural, convergent effects of our species' actions affect the future of all of life. There are impacts of the moment that, environmentally and geopolitically, are destabilizing global conditions in the short term. But processes have been created, like the loss of biodiversity and the increase of deep-sea ocean temperatures, that will have serious and unpredictable consequences for decades and perhaps centuries—no matter what mitigation actions are now taken. Moreover, the consequences will be serious. These will not just be confined to environmental impacts but will also be economic in nature and impinge upon global security. Put bluntly, the worse the situation gets, the greater the likelihood of economic collapse and major conflict. Thus "time is out of joint" is "the originary corruption of the day today" as it extends into an endless tomorrow (22).

It also follows that "time is out of joint" presents a disturbance in how one views one's "being now." In particular, technology and politics are disjointed: they and "we" are not where they appear to be and are thought to have been historically placed. They are no longer "jointed to" the worlds in which they were formative agents. Technology is *dis- and mislocated*. It is a signifier with multiple significations. These are constantly evoked with the assumption of commonality, whereas how technology is understood within and between cultures varies according to a specific subject's knowledge, age, context, and exposure and proximity to technology's differential forms (mechanical, electrical, electronic, digital, chemical, and biological). Cosmotechnics are a particular way of understanding and naming differences of technology in emergent forms of the technopolitical. As such, they pose a particular problem when the agency of technology is appealed to, or when it is called up or upon, as if it were singular and coherent.[2] So while "technology" is often evoked as a totality, there is almost no shared perception of that totality. In significant part, this is because what technology "is" is epistemologically problematic. What "it" is depends on what a knowing subject knows and the discourse in which this knowledge is constituted.

In contrast, the political is not just "out of joint" but also out of time. Its moment is not of the situated now—its time especially lags in the institutionally reified structures of politics. As such, both technology and time are disjunctural elements of a crisis that, by global degree, has become intrinsic to our species' essence and in which every one of us, know it or not, is immersed and consequentially mis-in-formed. Crisis, technology, and the political are never of one convergent moment anywhere.

Worlds Out of Time

Imperialism, colonialism, and "development" were conjoined by modernity and as such deployed by forces of technology and political institutions. For more than five hundred years, modernity constituted and imposed the telos of a Eurocentric vision of a world on all worlds. First there was an intent to expropriate natural resources without regard for consequences. Then came the intent to make the entire world modern but with power retained by the "center." Now the idealism of this globalism has been abandoned. Historically, the impositional, globalizing project of late Euromodernity was exposed and resisted as just another example of development for and by the "developed." At the same time as this project was underway, a counter force was emerging. A reconfiguring of global power blocs (still underway) is most evident in China's global economic and military rise. Thus, any form of a global unification has become increasingly unlikely. Nevertheless, extractivism continues, as do attempts to maximize global markets, to extend supply chains, and to expand the commodity sphere—all with indifference to common interests and in conditions of growing global insecurity. Almost all of this activity has been weaponized in the contest for global power. All this is happening as the fiction of the "global community" is appealed to and rhetorically asserts a need to

reduce environmental destruction and redress the impacts of anthropogenic, accelerated climate change. The contradiction of this situation, and its representational tropes, is not external to the global crisis but elemental to it.

From early to late modernity and until the present, a global complexity spawned from our species' transformative agency has created changes beyond the descriptive ability of any epistemological means of comprehension. The relational interactivity of environmental interventions, modes, and practices of Earthly habitation; the impacts of industries and technologies; the scale of a chemical footprint; conflict; the volume of atmospheric, terrestrial, and oceanic waste; *and more* has put our species and life in general at serious risk. Yet for all that is collectively known, the consequences of "our" unevenly created action evade "us." "We" do not occupy the single moment of time of "time out of joint"; rather, we exist as "beings out of joint" without a "sense of the world" (Nancy 1997). So set, change is sought while the fundamental attachment is to remain the same.

Part One: Misplacements—The Political, Politics, and Technology

No matter who or where "we" are, we live the failure of the politics of the end times as the end of progress and omnipresent uncertainty. In these times, the ontic, defuturing political forms of the materiality of the worlds of our collective life and fabrication are perceptually dislocated from institutionalized politics. But also, the directionality of "things" (a trajectory of consequences) mostly goes unnoticed. Meanwhile, the failure continues of all currently available politics to comprehend and address the scale and complexity of a plethora of global relational problems that are now jeopardizing life on this planet. This is a crisis marginalized by immediate pragmatic—especially national—political concerns. Overarching and indivisible from this condition of limitation is first a lack of political imagination by political leadership and political culture at every level, from the local to the global. Second is that current political philosophies are unable to deliver pathways to viable futures. This assessment includes democracy. It is not just that leaders lack either a vision of what a pathway might be or the means to deliver it but that they all realize that they cannot retain power if the dreams and desires of "the masses" they pander to are totally thwarted. It follows that it is vital to argue for, and work toward, a new political imagination able to generate a vocabulary of new concepts, ideas, and transformative practices that can enable *being futural* by constituting a nonutopian politics of tenable new desires and means, albeit in conditions of deep and potentially terminal crisis.[3] The seemingly impossible cannot blithely be taken to be so.

Configuring the Critical and Criticality

Any current discussion of "being now" is of being in crisis, variously named via, for example, the Anthropocene (dominantly recognized through the plurality of still-increasing climate change impacts and ongoing environmental devastation), the Sixth Extinction (already unfolding as a discernible loss of biodiversity and the normalization of an increasing frequency of pandemics), deepening geopolitical instability and the prospect of major conflicts, and the transhuman as just one marker of our species' fragmentation. Yet the sum of these crises fails to communicate the scale and complexity of the criticality of what still remains an unnamed, relational, compound problem: one that phenomenally defines life as unsettled in disjointed time. Depending on the degree that "we" are exposed to specific manifestations of the conditions of criticality and gain an informed knowledge of them, a sense of the situation dawns—incomprehension of the full complexity of the complexity notwithstanding. Unsettlement is experienced, the end of a telos is felt. Claims of technological progress do not equate with it, nor does a feeling that the developmental direction of our species and its forms of civilization are actually being sustained. The notion and objective of qualitative survival, as the sociocultural, progressive advancement of our species, is not evoked by contemplating an expanding technosphere. Life is now variously lived by many classes in the Global North and South in a condition of repressed futures. Abandonment, survival on a day-to-day basis, and the afterlife of the technology of another age coexist with the latest and most sophisticated. The example of the operation principle of the Jacquard loom makes the point:

The Jacquard loom, nineteenth century.
Image: Musée des Arts et Métiers, CC BY-SA 3.0, via Wikimedia Commons.

Head, Jacquard loom, India (2013).
Image by Tony Fry. Do not use without written permission.

Digital Jacquard loom, Norway (2022). This loom is used to prototype for automated loom production.
Image: Digital Weaving Norway.

The inequity and contradictions of the technological reality of the present is a specific example of *akrasia*, wherein what is historically known is ignored, and of chronophobia, which anchors "us" in the present and with an illusion of permanence. Both are normative psychologies. This situation is equally mirrored in capitalism's technocentric projection of productivity as it creates new forms of exploitation, wherein the latest technology exploits the earlier modes, and in contemporary, precious conditions of work. For example, data-driven, digital-platform businesses have created the ability to exploit preexisting infrastructure and minimize hiring, and in doing so transcend conventional limits to growth. Thus companies, as Uber illustrates, don't need to build factories or manufacture products. They just need servers, good marketing, and access to a volume market. More broadly, they are not constrained by a nation's level of "development" (Srnicek 2016).

Technology as Political

The political agency of the ontologically designing force of technology (in its every mode) is an extreme and particular example of *akrasia*. It's increasingly recognized that power is being ceded to technology, yet our species' belief that they control technology persists. This belief continually undercuts recognition of a technological construction of reality—as especially evident in those nations with advanced economies where technopower is hegemonic. This situation is not merely manifest in the omnipresence of technology and its ontologically designing power but in every aspect of economic, social, cultural, and biological life. It is also manifest in the naturalization of instrumentalization of operational systems of control that structure forms of compliance in almost the entire world of work, education, and, as Michel Foucault showed, in institutional disciplines and discourses. The degree to which all this became possible indicates a failure of the philosophy of technology to grasp the extension and existential consequences of life dwelt in the technosphere and its fusion with metaphysics.[4] Whatever the objectified appearances of instrumentalism might be, its fundamental locus is as an interiority. The ontological designing impetus of the material agents of instrumentalism, as Simondon recognized, was the displacement of the individual by individuation (2005, 191). This is to say, individuation, put in the broadest terms, registers the recursive character of our species' intergenerationally making a world of difference that makes "us" individuals.

While Simondon himself had no sense of technology having any particular evolutionary direction, he nonetheless viewed it as having a direct metastasis nexus as elemental to "nature in the human" (Barthélémy 2012, 113). While this is elaborated at length in his writing, the basis of Simondon's disposition toward technology and nature, as Francçois Lagarde makes clear, was lodged in his childhood.[5] This binary relation can be juxtaposed with a more contemporary notion of synthesis characterized by the "naturalized artificial" (Fry 1994, 79–86).

In a situation of technologically omnipotent mediation, prosthetic extension, and ontological designing, the notion that technology is a "tool" that we all command persists. Surprisingly, this view remains present in some philosophers of technology. Gilbert Simondon, one if its most influential thinkers, wrote in his celebrated PhD thesis of the misplaced fear of "the cultivated man" directed at "machines that threaten mankind" (1958, 3). To counter this view, he presented "man" in relation to technology as being "like the conductor of an orchestra in the midst of all that has to be brought into harmonic convergence" (4). This metaphor of control, if ever deemed to be true, no longer holds. It fell as cybernetics and the designing force of algorithms advanced. Yet its trace remains palpable, most noticeably in the political ambivalence of Bernard Stiegler's (2011) use of the concept of the "pharmakon."

Cybernetics and Ambivalence

In the Global North, the speed and ubiquity of (especially) communications, robotics, and nanotechnologies, all linked to artificial intelligence, outstripped serious, critical reflection of consequences in time. For those critical theorists who sought to interrogate these technologies, an ambiguous relation arrived, sliding between seduction and analysis. The problematic history of thinking such technology flows back into the arrival of cybernetics, as it became integral to the advancement of modern technology, and as such elemental to its essence with profound consequences.[6] Martin Heidegger recognized the problem early and rehearsed it in numerous texts. Over many years, cybernetics became the basis of technology beyond its physical incarnation. For this to become possible, metaphysics itself had to become technology (Heidegger 2003, 93). This in turn marked a terminal gathering of philosophy (99). In his infamous 1966 *Der Spiegel* interview, published after his death, Heidegger stated, "Philosophy dissolves into the individual science: psychology, logic and political science" (2003, 40). Then, when asked "What or who takes the place of philosophy?" he answered: "Cybernetics" (40). In his essay "The Question Concerning Technology" ([1954] 1977), he firmly stated that technology is instrumentalism—a remark that connects back to cybernetics and/as "steering." These views mark a distinct shift from the position he argued in the *Holzwege* in 1952, when he stated that "Philosophy in the age of completed metaphysics is anthropology" (2003, 99).

In the opening of the *Heraclitus Seminars 1966/67*—an exchange of views between Heidegger, Eugen Fink, and participants—there is a dialogue about Heraclitus fragment 64: "And thunderbolts steer the totality of things" ("thunderbolt" is also translated from the Greek as "lightning," which is the term they used). As a metaphor, it was discussed as an "outbreak of light" and a "bringing forth" from that which is in darkness to enable "movement" (Heidegger and Fink 1979, 10). This led to consideration of a relation between light, as illuminating the way, and steering, as coercion (a claim made by Fink, which Heidegger questioned and Fink restated). Then Heidegger poses a

rhetorical question, and in doing so makes a leap in thought and time by saying, "Isn't present day cybernetics itself also steering?" (12). Fink, a little later, brings information into the frame, understanding it as *informare*, meaning "stamping, impressing form" as well as "information" (13). Heidegger reiterates this view (*informare* is actually very near his notion of "enframing"[7]) and concludes the seminar by saying cybernetics become a means by which "human behavior becomes formalized" (14).

How cybernetics and/as technology are viewed cannot now be decided by a universal answer (various understandings compete, not least by the arrival of "second-order cybernetics"), notwithstanding its current embedded status. Yuk Hui states: "Cybernetics as a universal reflective thinking has displaced the role formally played by philosophy as reflective thinking" (2020, 58). He concurs with Heidegger in that cybernetics denote the end of philosophy, but as it was; it is now at the end of "the metaphysical dualism in ontology and epistemology" (58). While philosophy persists, it is not unified as discipline or discourse, as seen as "a new condition of philosophizing" (58) that is beyond Eurocentrism. Although Hui also poses this view, he does so in terms of a new inquiry into the question of ecology—effectively an inquiry that "general ecology" (Hörl 2017) problematically claims to have embraced as a critical field wider than and subsuming the universal status asserted by cybernetics.

Hui poses a crucial question: "Will cybernetics not be the solution to the ecological problems that we face today?" This he then links to a question of the long-standing, overcoming "shadow" (de facto consequence) of (Euro)modernity (58). Taking these questions in turn: the answer to the first is a definitive No. There are some (often instrumental) problems it can and may contribute to solving, but *cybernetics will not solve all of the multiple problems that constitute "the" problem.* The situation is such that some problems, like our species loss in the general context of lost biodiversity, don't have solutions. In other cases, where irreversible change has occurred, the only option is adaptation to the changed circumstances. More generally, there are problems beyond the capability of any technology. The question of overcoming (Euro)modernity posed by Hui via Heidegger is not reducible to "the mechanistic-technological triumph of modernity over nature" (54) or the overcoming of dualism or a turning away from false analysis. Rather, it is a question that historically centers on the binary relation between colonizers and the colonized, both of whom differentially experienced the environmental impacts of Euromodernity.

But this is only half the story. Violence, subjugation, and exploitation were not contained in a moment that can be overcome. This moment did not end; its effects continue. There is no postcolonial condition. Rather, there is an ongoing process of exposing the continuity of modes of colonization and recovering, revaluing, and remaking, when possible, devalued and often almost totally erased traditions and knowledge. In doing so, the aim is not to reinstate the past but to establish foundations on which to innovate as contributions to a viable future. This cannot be separated from exposing the history of transmogrified colonialism and the continuing, exploitive agency of "development" evident in extractivism.

The Technopolitical

Eric Hörl, citing Peter Haff, gives the name "technosphere" to the proliferation of technology across the globe, "a new stage in the geologic evolution of the Earth" (2017, 14) that we all occupy. He then concludes that the "technosphere becomes the milieux of milieux" (14). Such a Eurocentric generalization conceals the uneven distribution of cosmotechnical differences. It also overlooks our species' always having been technological, with *techne* elemental to "our" evolution. This relation emplaced a trajectory of varied practices of making, linking the natural and the nonnatural and prefiguring a synthesis between the natural and artificial that eventually dissolved any clear division between biology and technology (as genetic engineering illustrates).

Technologies have always been unevenly distributed in form and volume within, across, and between cultures and nations. Originally this difference was produced socioenvironmentally in relation to needs, environments, and material circumstances. Now, however, they are in the main politically, economically, and culturally created. More than this, global technological differences must now be understood as configuring different futures, values, situated challenges, and, above all, lifeworlds of worlds of difference within worlds fashioned by cosomization, design, and technology—this from the ancient worlds to the present via mythology, religion, and science (linear and coexistent) (Berger 1987). The past ever remains active in the present, with the construction of worlds of difference also always resulting from an engagement with, and a response to, climate and environment. Such a response, as a "process of adaptation and adoption," demonstrates "a reciprocity between the living being and its environment" (Hui 2020, 57). Such action became prefigured by idea and intent (design) and enabled by technology. This process was never neutral

but functioned within the dialectic of creation and destruction—a dialectic understandable as the ground of technology (and design as the political).[8] The act of technological creation cannot be divided from an act of destruction. So situated, the political either renders ethical justification, as an act, visible or invisible.

This dialectic lends a lie to the notion of technological evolution. Regressive consequences often travel with "progressive" attainments. Clearly technologies do performatively develop—but at the same time, so also do their impacts, as evidenced by, for example, climate change, microplastics in oceans, the pollution (and death) of rivers from phosphates carried by agricultural runoff, environmental contamination from nuclear power generation accidents and cancer from depleted uranium munitions, and artificial estrogen in water changing animals' hormonal balance. Clearly such changes are not evolutionary, although they produce mutations. What never arrives, and certainly what the generalization of the Anthropocene fails to communicate, is a composite picture of the direct and indirect defuturing impacts of technology.

Bernard Stiegler argued that "there is no human society that is not constituted by a technological system" (2017, 88). He suggested that such a system is traversed by "evolutionary tendencies" that induce change, which in turn necessitate "adjustments" in other systems, including social systems. These adjustments, he concludes, result in "the unity of the social body" (88). This view is problematic in terms of what is displaced, marginalized, futured, and defutured. It fails to acknowledge the historicity of cosmotechnics as forms of technics constituted within the cosmologies of ancient and Indigenous people, substantially erased by Euromodernity, as the contextual source of "the system." This observation goes beyond just Indigenous cultures and invites a critical consideration of the negation of universalism from a cosmological perspective, historically and futurally (Jullien 2014).

Part Two: A New Political Imagination

Technology is deeply implicated in the process and history of colonization as it extends from the weapons and machinery of colonizers to the ontological, universalizing agency of psychotechnologies.This ontological process of colonization, as it contributes to a technological construction of reality, emplaces a form of cosmological knowledge (exemplified by cybernetics) that is postgeocultural and transideological. Rather than decoloniality being a delinking from the afterlife of colonization, epistemological colonialism, and Euromodernity, it now must become a means of dislocation from the reality of a universalizing technosphere. So framed, cosmotechnics offer a nascent mode of futuring otherwise, an opening of and entry into a borderland of situated, resistant engagements—this in a betweenness of histories, cosmologies, and contradesigning futures. To further elaborate this proposition, more needs to be said on technology and the political as connected to the issue of a new political imagination as a framing of a politics of cosmotechnics informed by an understanding of decoloniality.

Marie-Pier Boucher writes of Gilbert Simondon that his "thought holds a great potential to think—or rethink [. . .] the political relations entangled in the process of coupling life's material and processes with technology" (2012, 92). This process of coupling is as old as our species' engagement with technology itself. The moment of political entanglement is more particular, although still somewhat indistinct. Certainly, war is one example of this condition, but so also is colonialism—however, it means bringing cosmotechnics and decoloniality together. But doing so poses challenges for an extant understanding and positioning of "political relations" that are other than current configurations (be they with biotechnologies, robotics, digital media, defense, energy, medicine, and so on) as configured within a globalized, Western cosmology. Likewise, the cosmotechnics/decoloniality nexus runs counter to a teleological narrative of technological development presented by Stiegler and other contemporary theorists, which asserts that technology has gone beyond "disciplining bodies and regulating life processes" and is now starting to focus on the modeling and control of consciousness (Van Camp 2012) via psychotechnologies and a growing convergence between digital technology, capitalism, and hyperconsumerism (and with a claim of redressing a widening global "digital divide" as progress). This nexus also is indicative of a recoil from transhumanism and technologically inducing species fragmentation. One more fundamental difference is the technofix's political attachment to salvationism, of which "singularity" is the most perverse example and sustainable technologies the more familiar and banal. Against this backdrop, one can acknowledge that the modernized and modernizing cohort of "our" species manifests a continuous acquisition of knowledge and instrumental expertise that has been amazingly creative in bringing "things" and the world-within-the-world of our existence into being. But it has equally been extraordinarily unperceptive in comprehending the colonizing and (de)futural agency of what it has created.

There can be no simple appeal to either creativity or imagination. The failure to recognize the dialectic of creation deposits a huge, almost totally unaddressed ethical issue for creative practices, while any account of how imagination is understood emerges out of an enormous range of different historical circumstances that directly influence its form. While not having a mimetic relation to worldly conditions, imagination does have an often unexpected, observed, or remembered connection to them. All this is to say that imagination does not just emanate out purely mental contemplation. So framed, the formation of a new political imagination depends on the conditions of situated need, in which possibilities can start to be examined. In the context of political imagination, this includes establishing an epistemological environment that enables rethinking the very form and character of "the political" itself. Along with the cosmotechnics/decoloniality nexus, this cannot be delimited by Eurocentric and Euromodern perspectives. To do this means not only going beyond the limits of the current political philosophy and political discourse (including decoloniality) but also fully embracing a relational epistemology that does not respect the divisions of knowledge in which the political has been traditionally thought.

What the disjunctural relation between the national and international agendas and their horizons of time and political concerns fail to grasp, as indicated, is the complexity of the complexity of being now. This equates to a crisis of crisis coming from an institutional inability to represent rhetorically, politically, or visually the complexity of the compound crisis that folds back into crisis. The lack of relationality as a mode of understanding in political culture in general is one problem here. The overriding agendas of national political interest are at odds with critical conditions that are conceptually, spatially, politically, and materially uncontainable by currently available means of political representation and governance. Essentially, the crisis of this crisis is an inability to bring scale and interconnectivity of crises to presence. The time of crisis is thus out joint and step with extant political thought and institutions; hence a disjuncture and the imperative of a new political imagination. This situation evidences a seeming condition of impossibility, grounded in unknowing, that demands a redress that recognizes the scale and unavoidability of the problem. At the most basic, and globally, the politics of now is of the past and awaits a futural politics.

So said, a process that can lead to the making of a new imagination must commence, starting with confronting what has to be imagined as the object of essential overcoming, which in essence is our anthropocentric selves and our attendant thinking, together with the defuturing force of the life-negating relational elements that constitute the compound crisis. Such a confrontation must aspire to be uncompromising in presenting the scope and complexity of what threatens while also resisting a descent into nihilistic, dystopic despair. But equally, it must refuse digressions into the technosalvational or countercultural utopianism of dreams (de facto, fanatical objectives without means). To accept the difficulty and make sense of this situation while at the same time making sense of what "we" are becoming is itself generative of a process that requires navigating a path through an epistemological maze of competing knowledge that demands unlearning, relearning, and new learning—all in situated and increasing contexts of displacement and expansive time. By implication, this requires abandoning dis-associative theory and knowledge that, in its recursive abstraction, is unable to articulate thinking able to connect with *acting in time*.[9]

Besides the epistemological endeavor of making sense of the politically senseless, there is a task of negotiating narratives of gathering(s) of the political as broken. Here the heterodoxical thinking of Carl Schmitt (1986, 1996) can be brought to a collision with the breakup and breakdown of politics within and between nations whose futures are absolutely destined by the compound crisis. To cite just one projected example: climate change impacts will bankrupt many nations, whose failure will infuse and add to the compound crisis. Major cities will be lost, industries will be destroyed, and vast numbers of people will be displaced. This is already evident in cities as different as Miami and Jakarta.[10] These coming wastelands will lay impotent political institutions to waste and eviscerate democracies, render their body politic dysfunctional, and expose the hollowness of extant political ideologies.

To reiterate: new political imagination cannot arrive out of an asocial, abstract act of contemplation as a thing in itself. Imagination does not magically emanate from an innate spirit of creativity. Rather, it comes out of a situated context that constitutes the world of its (and our) formation in difference. This world now looms as crisis; thus, a new imagination may/could/should follow associated breakdowns and prompt action with an uncertain fate.

The postmodern and the technosphere imaginations, which are grounded in Euromodernity, along with those of post-Marxism, neoliberalism, and postcolonialism, are all unable to deliver an opening into a futural political imagination. Fundamentally, as indicated, they are grounded in values, interests, and agendas that are constituted by divisions of knowledge and political objectives that do not confront the nature and implications of the complexity of complexity. Here one has to draw a distinction between imagining what has to be imagined in a general sense and

actually imagining such complexity in its relational plurality. This requires a break with the politics of the status quo; hence the formation of a new political imagination not being a response to crisis but an emanation from it—this as it unfolds as accelerating breakdowns, signs of which are already existentially evident. Crises as now experienced, albeit as pandemics, megawildfires, superextreme weather events, and so on, are recognized here not as aberrant events but markers of an emergent, escalating, continuous pattern of change. In this situation, and without an investment in false hope, one should remember that the historicity/history of our species' being is replete with attaining what at the time seemed to be totally impossible.

Part Three: Cosmotechnics—Technology of Other Worlds

The history of Western colonialism includes a history of technological systems introduced in the name of and for the advancement of Euromodernity, which in practical terms initially meant clearing the land and eliminating or overwhelming the resistance of Native peoples. In this process of invasion and occupation, technology assisted conquest as it sought the destruction, displacement, or suppression of the Indigenous cultures and their social order and cosmology and its associated "cosmotechnics." Hui interestingly—but as we shall see, problematically—provides a preliminary definition of cosmotechnics as "a unification between a cosmic order and the moral order through technical activities" (2016, 19). What is not ambiguous is that the forces of destruction were unwilling and/or incapable of recognizing the value of what they were destroying with technical instruments of colonization.

It is important to make clear that the understanding of cosmotechnics employed here will be working with a somewhat different viewpoint to Hui. One cannot transpose categories (like morality) from one cosmology across all. The very notion of cosmology/cosmos is itself a product of particular epistemic-cultural constructs for which across difference there may or may not be equivalents. What can be taken as shared is the practice of making and the creation of means to make within a relational context (world). Even when the appearance of the made is similar, its use and meaning cannot be assumed to be held in common, although again it might be. So qualified, cosmotechnics are understood as formed in relation between how a world is made sense of, known, and fabricated materially and immaterially, all by abstracted, materialized, and/or embodied knowledge and accompanying practices and values.

What cosmotechnics register are not arcane beliefs, knowledge, worlds, and practices or redundant, romanticized ontologies but possible pointers to the plurality of situated differences of innovatory futural world-making/remaking. This on a planet that moderns have rendered as an increasingly inhospitable environment to themselves and to many other forms of life. So positioned, cosmotechnics offer a prospective recourse to a pragmatic of selective old, extant, and new applied knowledge. Cosmologies—many old, some new—exist in the specificity of the time of their cosmology. This view is in direct opposition to the neomodern universalism of Clive Hamilton, who asserts the centrality of technology directed by "our extraordinary power" and exercised by a responsibility to "deploy technology and management practices to reach a reconciliation, *to calm the Earth*" (2020, 118). Hamilton also claims a fifth ontology will be "built" out of Anthropocene science that recognizes that "humans are so powerful that we can change the geological evolution of the Earth" (118).[11] Central to his thinking is the notion of the Anthropocene as "solely based on Earth System science" (112). Besides the problem that the long-standing critique of systems theory presents of there being no external position of observation (von Foerster 2003; Luhmann 1986), a fundamental characteristic of planet Earth in any moment of stability ("calm") is bracketed by a past of often violent instability and a future of assured entropy and eventual destruction. This does not excuse hominoids' destructive propensity. But it does place the catastrophe of our acts of creation in the historicity of geological change, devoid of any evolutionary process but rather full of violent disruptions pre- and postlife, as it is known. So framed, the challenge our fragmenting species faces is not "saving" and sustaining the Earth but establishing the condition in which life, including our own, can be sustained.

Hamilton's argument is riven by many problems. For instance, his employment of ontology shows no recognition of its contested understanding within philosophy as elemental to, or other than, metaphysics. Equally misplaced is his claim that humans are "a new force of nature" and that "technology activity can be guided by conscious decisions on the part of humankind, or at least part of it" (Hamilton 2020, 114). And that fundamentally, the ontological character of our species' being is that it brings things into being without knowing what the consequences will be. And moreover, that the technological "nature" that has been created by "us" is no longer under "our" control points to the wider issue of an instrumental ontology unable to grasp the implications of acknowledging the complexity of complexity. Rather,

it exposes reason's insufficiency and more fundamentally carries the unknowing that is intrinsic to increasingly more of our species' unsustainability. It also must be said that speaking for humankind is an extraordinarily arrogant, Enlightenment-tainted utterance, one that ignores *anthropos* as an imposition of modernity upon the hominoids of cosmologies of difference, resting on the now recognized "groundless ground of universalism" (Jullien 2014, 21).

We are not one. We evolved from the animal to become the animal and its plural Others. Likewise, "humankind" is not one. It follows "it" has no means of collective organizational ability to prefigure and constitute a universal ontology. Even more significant, the historicity of industrialized humanity not only reveals the materiality of its creative power but also a corresponding, indivisible destruction that accompanied it. The consequences of this unknowing have always traveled in silence with knowing: defuturing ever remains bonded to futuring. Industrialized humanity is the most dominant, powerful, and out-of-control subset of our species. As such it overwhelmingly fails to recognize that the Indigenous Other simply does not (or did not) have not only a different way of life but another way of being and a scale of living.

Yuk Hui (2017a) poses a philosophy of cosmotechnics striving to overcome the Anthropocene not by heroic exceptionalism but through acknowledging ontological difference by recovering a multiplicity of traditional and contemporary ecologically grounded cosmotechnics. These are predicated upon recovering and remaking technologies from the past, along with new innovation. The example of the Chinese mulberry dike makes the point.

The original concept.
Image: People's Government of Nanxun District, Huzhou City, China (2017).

A modern commercial application: the mulberry dike fishpond system in Huzhou, Zhejiang, China.
Image: Huzhou City Council (2019).

The Zhejiang Huzhou mulberry dike–fishpond system was developed more than two and a half thousand years ago in numerous villages in China, especially in the south. They now arrive in what would be called an ecotechnology. Originally, villagers dug a fishpond and piled the excavated earth around it to form a bank. On this they planted mulberry trees. Once the pond was filled and stocked and the trees were established, silkworm larvae were introduced. As the larvae fed on the trees' leaves, their feces fell into the water and fed the fish. Each year, their silk was harvested and spun and became a significant part of the village economy. The pond was then drained; the water was used to irrigate crops, and the rich mud at the pond's bottom was used to fertilize the trees. Throughout, fish were taken to feed the village at regular intervals. There are three basic things to say about this example. First, it illustrates an adaptive principle to design. Second, as a method of production, it has survived and has been scaled up. And third, it indicates that, in practice, the notion of the "circular economy" is not new but very old.

What this kind of example also illustrates (along with so much of what lies latent within Joseph Needham's monumental, multivolumed *Science and Civilization in China* [1956–2004] as well as in his explorations of the technologies of Indigenous cultures) is that there are seeds of the future in the past. These technologies also register the inappropriateness of Clive Hamilton's disparaging remarks directed against "going to other cultures for answers" (Hamilton 2020, 115), underscored by Pieter Lemmens's comments on "going native ontologically" for "confronting problems of the Anthropocene" (Lemmens 2020, 3–8).

The Anthropocene is not a commonly understood, universally shared, or agreed-upon concept. Moreover, the condition it names does not necessarily denote the overall condition of the compound problem that is putting planetary life at risk. In contrast to Hamilton's affirmation of anthropocentric power to directionally change the fate of the Earth by technology, Bernard Stiegler sees the pharmakon and the Neganthropocene as concepts that displace the Anthropocene. The Neganthropocene mobilizes the notion of negative entropy, defined by Stiegler (citing Schrödinger, Stiegler 2018, 133–134) as an ability to "slow down the increase of entropy" as linked to the pharmakon which, as a mode of pharmacological action, "can be either curative or toxic" for "noetic forms of life" (308 n.438). This is to say that, even if conceptually the theory "makes sense," if it makes nothing, it has no change agency, no

practice. Thus, it becomes dis-associative theory. Likewise, little faith can be posited with the pharmakon; when applied, its consequences are indeterminate. Geoengineering is a simple example: it might reduce global warming, it might not, or it might have unpredictable, negative impacts. Such thinking fundamentally leaves the defuturing propensity of the anthropocentric ontology in place, along with the planet's diminishing resources, deepening geopolitical tensions, a failing world order, prospects of major conflict, an intractable and growing loss of biodiversity, and a population on the cusp of eight billion, heading for nine, with a significant portion heading toward displacement. In this structural condition of defuturing, the vast majority of people globally have no awareness of the Anthropocene. Their horizon of concern is fixed by their immediate circumstance, which includes its symptoms and other crises.

Other Worlds

Like concerns voiced (mostly from the Global North) about the Anthropocene, decoloniality is a discourse spawned by an academic elite that has now arrived as a critical discourse of engagement with enduring consequences for the afterlife of colonialism, which includes the ongoing epistemological authority, normative values, and installed material desires emanating from the Global North. What it has not recognized is the transposition of technology from an applied instrument of colonialism to a force in its own right, unevenly ontologically colonizing our very species' being via its construction of a postnatural reality. In this respect, cosmotechnics, as yet to become fully developed as futural, need to be seen as a kindred discourse to a reframed notion of decoloniality. So conceived and realized, cosmotechnics become a situated corrective and resistance to the inequity and ethnocidal violence that comes with the globalizing, hegemonic technology born out of the North.

Consider, for instance: there is no contemporary "Chinese technology," although there is clearly technology from China (as there is a historical plurality of technology, there is also a plurality of science in China and globally [Harding 2018]). This is because in order to modernize, China's antitraditionalists appropriated Western technology and technological knowledge from Britain in the nineteenth century. So, while China was never completely geographically colonized, it was epistemologically colonized via the instrumentalism of systems of a technology that displaced its cosmotechnology (Fry 2014; Hui 2016). What arrived with modern technology was the protoform of the design of the world (the technologically constructed reality) that it enables. Thus, cosmotechnology is not just another technology but the ground of a futural Other's design ethos. Here it is important to see the kind of changes illustrated by the Chinese mulberry dike example not as evolutionary but counter-evolutionary. Consider: Chinese craftworkers developed complex industrial processes and modular design systems thousands of years before the West (Needham 1964, 1970; Ledderose 2000). The external intervention in a technological system, and the appropriation of technology, is never purely technical or cognitive. It is also an ontological transformation of the experiential "human"/technology relation—the difference between "instruments of work and the division of labor" makes this clear (Arendt 1958, 118–126).

Uneven development has driven technological innovation in opposite directions: wealthy nations produce ever-more sophisticated technologies, while the very impoverished nations of the Global South buy outdated, used machines while also repairing and cannibalizing ones already in use to extend their life. A new cosmotechnology can arrive when cosmological difference moves from the loss of unquestioned tradition based on *inherited* values, beliefs, and practices to a situation (to become more prevalent) where technological bricolage becomes integral to gaining the means of material and cultural survival. It is important to understand that cosmology does not appear as a conscious object of reference but is integral to a practice. As such, it ontologically becomes directive of a technosocial construction of a local reality—one embedded in the habitus of a practice (wherein differences between culture, technology, and nature have no seen significance). Rather, the practitioner knows that what they are doing is contributing to the reproduction of a way of life under circumstances only partly understood and over which they have only limited control.

Placed in this setting, the question of whose and how cosmotechnics can be identified, communicated, and then generalized is not easy to grasp or answer because, as said, cosmologies are not self-revealing. To understand the concept, practice, and future of cosmotechnologies requires first understanding the relation between a cosmology and the technological practices as they are culturally inscribed. Eduardo Viveiros de Castro makes this clear:

> We count ourselves lucky when our natives display a blissful disdain for the practice of self-interpretation, and even less interest in cosmology and system [. . .] Simultaneously, the native's disinterest in cosmological

> order fosters the production of neat anthropological cosmologies in which societies are ordered according to their greater or lesser inclination towards systematicity (or doctrinality, or whatever). In sum, the more practical the native, the more theoretical the anthropologist. (1998, 215)

The implication of this thinking as brought to technical practice is that it is situated in the cosmology as it is ontologically elemental to the habitus of the technology's user—existing as a tacit knowledge, gained in the experience of engaging their received world. It is not of their consciousness. But it is not always so, as Hui (2017b) makes clear when discussing the intellectual history of Chinese cosmotechnical thought and the relation between it, New Confucianism, and a moral cosmology (or a moral metaphysics), which can be seen as creating reflective relation to practice. Notwithstanding this qualification, there are two perspectives guiding what is argued here. The first is historical and goes to the arrival of Euromodernity as a cosmotechnology embedded in a taken-for-granted logic grounded in the epistemological underpinnings of the means of technological progress, as it is taken as a means of modernization in general. The arrival of this knowledge, via instruction, worked to obliterate local thought and practice. Perspective two is that there was a contest (mostly muted) between cosmotechnics. So even when the Euromodern technology and work practices arrived and appeared to displace local methods and traditions, an active trace often remained as a modification of, or resistance to, the new (Fry 2014, 12–36).

In contrast to the pursuit of solutions to a mixture of unsolvable, ill-understood, and derelationalized problems that fail to go beyond Euromodern, anthropocentric ways of thinking, the advancement of cosmotechnics affords strategic, indirect, disseminated action that commences to make time for its makers. Commencement of this process, grounded in the agency of extant capabilities, is posed against the gestural claim of overcoming. Such action creates the ontological designing of individuation—grounded in conditions that advance localized means of sustaining futural abilities—that enable larger goals to advance, as will be seen, via indirect intent.

Cosmotechnics and the Pluriverse

Thinking cosmotechnics futurally requires doing so in the context of the "pluriverse." To do this, I will make a series of critical responses to an article by Thomas Mercier (2019). In opening his position, Mercier outlines an engagement "with the motif of 'the pluriverse,'" claiming that "it has increasingly been used in the past few years in several strands of critical humanities associated with the so-called 'ontological turn'" (2). Of this, he lists its presence in science and technology studies, critical geography and political ontology, cultural anthropology, decolonial thought, and posthuman feminism. He also partially lists theorists associated with the "turn." Next, he says that these "various iterations of the figure of the pluriverse constituted a loose network of textual traces, a supposedly new scene for 'humanities'" (2), one organized around what he understood as a pluralistic ontology. Mercier characterizes what the "discourse of the pluriverse presents" as a strategic response to the violence of universalism, which advocates "a multiversal ethics" that is "more aware of the multiplicity of worlds and world-making practices that make up the post-globalizing scene" (2). Based on his reading of the authors he cites (Bruno Latour, Eduardo Viveiros de Castro, Arturo Escobar, et al.), he argues that "pluriversality remains self-contradictory and self-defeating as long as it relies on an ontological representation of world/worlds in the form of copresence" (1). Mercier bases his critical position by drawing on "Derrida's deconstruction of the concept of world (*cosmos*, *mundus*)" (1). Such a text is useful, as it forces a questioning of the value of the pluriverse as self-evident. It begs those of us working on and with the pluriverse to go beyond generalized definitions and move toward a situated, qualified usage (as, for example, a linking to cosmotechnics can do). Martin Savransky (2021) does this by going back to a formative moment: "A Pluralistic Universe," a lecture given by William James in Manchester in 1909.[12] Taking issue with all the problems raised by Mercier, especially in relation to anthropology and political ontology, would digress too far from the task at hand; however, a number of these issues are deemed to be relevant to the cosmotechnics/pluriverse nexus and so do need to be addressed.

The logic of the pluriverse posited by the "ontological turn," Mercier suggests, accounts "for worlds and life-worlds exceeding the narrow scope of European humanities" (2). He then poses the question: "How are we to analyze the textual network that makes up the pluriversal 'scene'?" (1). Here, two reductive misrepresentations of the positions he engages undercut his assessment of the significance of thinking, acknowledging, and working with a recognition of the pluriverse. First is the desire to designate all who engage the pluriverse as sharing "a logic" just grounded in an "ontological turn," as based upon an overcoming of the dualist relation between nature and culture. This is a view that

takes nature as an idea of noncorrespondence layered over the biophysical. Mercier's criticism negates the differences of position and politics of those working with the concept. The "drive" to corral this difference into "a position" is academic gameplay that most, if not all, of this "community of concern" abhors. The reduction of the pluriverse to a "scene" is not only a misrepresentation of their work, cultural politics, and, in many cases, activism, but is also an unacceptable slur. Then there is the disingenuous and gross diminishment of the pluriverse, reduced to a textual network and the invented "we" assigned to analyze it.

The problem that travels with this kind of exchange is that it degenerates into a clamor for a position of academic and theoretical legitimacy that links to what I have called "dis-associative theory," when what is actually at stake is the relation between how one's world, and the world of the Other, is understood, seen, and made present as fabricated and plurally lived. In this context, what the pluriverse needs is recognition as the plurality of the commonality of the difference of viability futures (Sustainment), rather than the pluralism of what now pertains: a competition between futuring and defuturing world making-over, in which defuturing currently has the edge.

We also read that "the discourse of the pluriversal presents itself as a response to the challenge of the Anthropocene"(3). As argued earlier, the challenge to be faced is greater, is relationally plural, and exceeds what is gathered by the Anthropocene. (Which again itself is problematic, as was made clear.) This critique is predicated on the universality of *anthropos*, as the named figure of *humanitas* that overrides recognition of all others of our species and their cosmologies. Here is a failure to grasp that there are others who see themselves in another way and name themselves accordingly, and more poignantly are of the pluriverse. Mostly they are survivors of colonial violence who are simultaneously celebrated and marginalized as "Indigenous." These people are significant voices of the Global South that speak for the specificity of loci in the pluriverse. The notion that the worlds of these people can be entered by agents of the "ontological turn" to gain access to their ontologies, sidestepping the damage done by violence (political and epistemic), is nonsense. Moreover, this violence has not ended: it continues and is raw.

Other "world-making" is not discovered by anthropological disclosures resulting from traversing the ontologies of others, as Mercier suggests, but by an adaptive practice of necessity and internal struggle for marginalized people. What goes unrecognized by Mercier is that the pluriverse is not just a recognition of the cultural margins that survived Eurocentric, colonizing universalism but also a state of the world that pre-dated the globalizing practices of modernity and now postdates the end times. There is an imperative arriving out of *the compound problem* that everyone everywhere will face. Namely, to become futural implies—demands—other cosmologies based on bringing the defuturing cosmology of development/being developed and hegemonic instrumentalism to presence and the creation of difference. What this implies is the creation of new political imaginaries, cosmotechnologies, remakings, transformations, and new sociocultural formations that are not alternative, idealized futures but are the futures made in the wastelands wrought by the compound problem. These futures are formed in the borderlands between impossibility and possibility.

While Mercier ignores the lived reality of the pluriverse, by academic exclusion and textual induction he equally displays an inability to see the pluralization of "our" species. Even though he gestures critically to new materiality and interspecies relations, he fails to grasp the transposition of anthropocentrism into technocentrism as constituting conditions of "transhuman" ontologies traveling towārd a futural pluriverse populated by our species as pluralized. This pluriverse is not a theoretical or political option but a condition always underway, arriving out of the multifarious dynamics of oppression, redirection, innovation, social dynamics, and emergent cosmologies. All of which technofuturists ignore.

Clearly, bringing cosmotechnics and politics together, as a cosmological-techno-politics, begs being constituted as futural action posed against the history of the erasure of the technologies and cultural practices of cosmological difference by the forces (military, economic, social, and epistemological) of Euromodernity. In contemporary conditions of structural inequity, a trace of plural technologies remains. These practices were often environmentally integrated, seasonal, ritualized, collective activities based on distributed technical, climatic, and cosmological knowledge. Technology, so situated, was elemental to the construction, continuity, and understanding of a particular reality. In this respect, it is not reducible to one particular technique or practical instrument. Some traces of this damaged past are now commodified and romanticized as Indigenous arts (sometimes to the artist's economic advantage, but often as a commodity of cultural extractivism) or arrive as unaffordable craft, aestheticized out of everyday use. Futurally, the past invites exploration as the locus of triggers of invention. Even where these practices are materially absent, memories and stories associated with making and with commonplace and sacred objects can be

seen as a means of seeding new discovery rather than past recovery. Likewise, changing environmental conditions and proliferating breakdowns of structures of dependence will force pragmatic innovation. Realistically, utopianism is dead, and deeming the future a descent into nihilistic dystopia is a disabling fatalism. No matter what, the prospect is harsh, and the challenge it poses is unavoidable.

Part Four: Into the Borderlands

Hui is correct when he talks of a new agenda for mesology (2020, 57), understood as a milieu embraced by the structural conditions of human existence that Watsuji Tetsuro (1961) named "Fûdo" and illustrated by climate.[13] By implication, this idea goes well beyond Hui's acceptance of "cybernetics and its organismic model" as a key element of a transformative, focused agenda (2020, 59).

It is from this perspective that the locus and form of the borderland will be considered as milieu and mediance, thus an existential, structural condition of betweenness to think, engage, and explore the potency of a future cosmotechnics (as a locus of the cosmology of their creation and making). This does not imply this action can fully resist cybernetics; rather, it can contribute to exposing the ambivalence of their world-embeddedness. Such denaturalization can contribute to constituting futures of conflict and breakdown destined by the defuturing forces and their presence in the status quo. Heraclitus illuminates and prophetically steered "us" toward this moment in fragment 80: "One must realize that war is common, and justice strife and that all things come to be through strife and are (so) †ordained†" (Heraclitus 1987, 49). Cybernetics exist in a continuum with war.

In the Global South (in the South and with the displaced diaspora in the North), there is a residual cosmotechnical Otherness, as evident in the development of autonomous practices and collectives. The intent is not resistance but a self-directed means of survival in the interstice between the abject and hegemonic capitalism, where technobricolage converges with developing borderland epistemologies. This produces an "other" kind of "Otherness" that becomes host to a new proximity of thinking and making.

Walter Mignolo explains that border thinking "requires a shift in the geography of reasoning, a geopolitical conception of knowing, understanding and believing, a delinking from the assumptions of modern and postmodern epistemology, hermeneutics and sensibility" (2014, 174). But cosmotechnologically making in the borderland forces a situated "geography of reasoning" into the conditions of a mesology, whereby a betweenness becomes disarticulated from what it bounded between to become the locus of a becoming in difference.

What is being intimated here is the arrival of a particular nascent world in the pluriverse as an extension of existing potentialities brought into convergence in the space of betweenness (actual, conceptual, and epistemological). Border thinking, on the other hand, breaks out of disciplinary boundaries, crosses borders, and becomes nomadic. As such, it is dislodged from ownership and institutions of power. Cosmotechnical *making in the borderland* can be understood as futurally transitional at the materialization of a point of beginning—one generative of the advancement of its own cosmology. A limit point now arrives: what is yet to be created cannot be described. But the imperative to advance folds it back into, and makes a demand upon, the creation of a new political imagination.

The Politics of Betweenness

For cosmotechnics to become truly "the political" as a cosmological-techno-politics and to have distributed and situated agency requires a mode of development beyond currently available political theory, culture, and practice. Hence why it needs to be understood as part of, and a contribution to, the formation of a new political imagination. Such an understanding directly connects the new political imagination to the advancement of conditions of Sustainment—a postsustainability intellectual and practical project that gathers and directs the diversity of futuring, if there is to be a future for life as currently known.

Unlike Stiegler's (2017, 95–96) notion of the paradox of the pharmakon as an intervention that can by measure lead to death or recovery, the act of creation is indivisibly also one of destruction. In this respect, the planet was viewed as a "standing reserve" to exploit with impunity; that is, until the cost of destruction started to be understood as defuturing (still a very partial recognition). Recognizing that every act of creation calls up an ethical dilemma is still a long way from a general acknowledgement of what is to be created justifying what is to be destroyed. Conversely, the act of destruction is warranted, in the service of Sustainment, when its object of engagement is a form of the unsustainable.

However, an appeal to the pharmakon is a problem on several counts. To make this clearer, it is appropriate to take Stiegler's use of it back to his source of the idea: back to Derrida and his extensive treatment of "Plato's Pharmacy," and specifically the fourth section of part one of "The Pharmakon" in *Dissemination* (Derrida 1981, 96–116), originally published in France in 1972.

The discussion of the nature of the pharmakon was posed in relation to global, compound problems causing the "malady of the world" to be seen as a terminal condition (variously and inadequately named in different discourses as the "end times," "structural unsustainability," "entropy," an "extinction event," etc.). The pharmakon is evoked in this context, as already said, as that ambiguous, toxic agent with the ability to kill or cure. But as Derrida pointed out, "there is no such thing as a harmless remedy" (1981, 99) in life without inflicted damage: "The pharmaceutical remedy is essentially harmful because it is artificial [. . .] it goes against natural life" (100). One can understand this view, as it was drawn from Plato, by bringing it to the present with the example of treating cancer (the natural) with chemotherapy (the artificial). If well administered, it is therapeutically harmful while arresting the disease, but if used in excess, it kills. With such treatment, remedy displaces the claim of a "cure," and as Derrida points out, this cancels the ambiguity of the pharmakon (97). Politically positing hope/faith with the pharmakon—but with its underlying ambivalence—brings a resignation that things could go either way. Which is what it is recognized as always having been claimed (Abbinnett 2014, 67). However, there is a more basic problem when bringing technology, as pharmacological, to the compound problem, for the problem contains much that cannot be solved or cured: it arrives with much for which there is no remedy. This includes, for instance, the lost biodiversity, melted glaciers, inundated cities, and acidified oceans, all evidence of a cause grounded in a process that has taken on an ongoing life of its own, even if its generative source (like greenhouse gas emissions) is arrested. Even so, such actions will be, and are, misrepresented and claimed as a cure. The arrival of climate stability may arrive as a claim sometime in the future. But change is intrinsic to climate; the critical issue is the rate and level of change. Relative stability may come, but if it does, it will be centuries away (as this is how long it takes for the planet's thermostat—deep-ocean temperatures—to adjust). Additionally, a second consequence coming from the still ill-defined forms of treatments, like geoengineering (a form of the "toxins"), is still unknown. The other issue of bringing technology to the pharmakon goes back to the problem of how it is understood, as was mentioned at the opening of this essay. Technology cannot be mobilized as a totality. There is no agent to do this, especially in a world of geopolitical instability. Its pharmacological qualities are not uniform.

So framed, technology arrives as a treatment to administer. But in the recognition of its pharmacological ambiguity, there is no guiding hand of administration or available measure for the application of the means of the hoped-for cure. Geopolitics will not solve the problem. It has not shown any evidential ability to direct and overcome pressing global problems, which are themselves only symptomatic of the decentered anthropocentrism of *anthropos* (its lack of interest of the collective). Such thinking, of course, carries an error. It implies the problems are adequately understood and that technology is an externality that our species controls and administers. Notwithstanding this erroneous thinking about the technological, it remains a dominant view. But more than this, our species has always been technological—Heidegger knew this; so did Simondon, and thereafter many others, including Stiegler—thus any full objectification of technology is impossible, especially now that it has become metaphysical (as seen with cybernetics). Not only has the existential condition of technology become extremely complex, it is also increasingly uneven within and between nations. A point of technological inequity has now been reached that is directly linked to our species' fragmenting: at one extreme is the emergent technohybridity of the proto-/transhumans. At the other are technologically impoverished, neglected, dispossessed, and abandoned Others. Here is a situation where the ethnocentricity of the discourse of posthumanism, and its teleological view of the future of the human, completely overlooks the nonhuman designation of our species-being by the cosmologies of Others, as does the rhetoric that is addressed to the Anthropocene.

Cosmotechnics, as the political, are essentially what Georges Canguilhem describes as "a 'knowledge of life' as a specific form of life capable of caring for itself, treating itself" (cited by Stiegler 2017, 94). As such, it is the externalization of the intuitive condition of everyday survival that we exercise all the time (when we drive, cross a road, climb a ladder, and so on) that Heidegger called the "care structure." As process, this can be understood as an ecology of a form of life with the ability of "caring for itself" (94). Such an ecology of care needs to be understood in a recursive, ontological relation between acting with care, intuited knowledge, and the agency of caring things in the world caring for the caretaker who acts with care.

So positioned, cosmotechnics are elemental to redirective practice as an enacted mode of the political. Fundamental to this practice is the recognition that the scale of the unsustainable as inscribed in the extant, fabricated world cannot be displaced by the new ("sustainable architecture," for example). Rather, what already exists has to be redirectively transformed; it thus becomes an active reworlding of cosmological difference rather than cosmopolitan (in all its forms) unity. What does this redirection look like?

One answer to this question is found the remaking of cities pragmatically in response to the coming greater fragmented conditions of being in the world in changed enviro-climatic and geopolitical circumstances. The possibilities of doing so are rehearsed in presenting the concept of metrofitting (Fry 2017) and in forms in which cities will be relocated (Fry 2021). Such action will also most certainly be elemental to cultural transformations generative of new cosmologies. In the end times of terminal progress, fragmentation, political disjuncture in worldly complexity, and breakdown of order and system, redirective practice—as and beyond cosmotechnics—is politically available.[14]

Concluding Remark

My argument rejects utopian idealism, dystopic fatalism, and technosalvationism. It recognizes the imperative is to deal with what we in all our differences, and in varied degree, and across our great unevenness, do—this as a fundamental and uneven, generative cause of the unsustainable defuturing of the unchecked nature of our being. This knowledge will not—cannot—arrive to totally transform the consciousness of the world's population; it is completely impossible. Although enormously difficult, redirective change, coming from remaking the ontological conditions of our becoming, can be contemplated and worked toward. It means repairing, remaking, and redirecting what already exists in the face of accelerating unsustainability and breakdowns (most dramatically, evolutionary biology's announced start of the sixth planetary extinction event). For this to happen, a process must be constituted as an organically evolving event stemming from catalytic action. Cosmotechnics, as the political, must be turned to a widely recognized attractor of a new politics, one able to constitute redirectively driven projects. This is a massive challenge, but it is a grounded one, unlike overcoming the Anthropocene. However, it requires a turning away from its articulation in forms of dis-associated theory so common in the academy, working to create popular modes of exposition of complexity, and acting in time (the medium and with a sense of urgency).

REFERENCES

Abbinnett, Ross. 2014. *Politics of Happiness: Connecting the Philosophical Ideas of Hegel, Nietzsche and Derrida to the Political Ideologies of Happiness*. London: Bloomsbury.

Arendt, Hannah. 1958. *The Human Condition*. Chicago: The University of Chicago Press.

Barthélémy, Jean-Hugues. 2012. "'Du mort qui saisit le vif': Simondonian Ontology Today." Translated by Justin Clemens. In *Gilbert Simondon, Being and Technology*, edited by Arne de Boever, Alex Murrey, Jon Roffe and Ashley Woodward, 110–120. Edinburgh: Edinburgh University Press.

Berger, Peter. 1987. *The Sacred Canopy*. New York: Knopf.

Boucher, Marie-Pier. 2012. "Infra-Psychic Individuation: Transductive Connections and the Genesis of Living Techniques." In *Gilbert Simondon, Being and Technology*, edited by Arne de Boever, Alex Murrey, Jon Roffe and Ashley Woodward, 92–109. Edinburgh: Edinburgh University Press.

de Castro, Eduardo Viveiros. 1998. *Cosmological Perspectivism in Amazonia and Elsewhere: Four Lectures Given in the Department of Social Anthropology, Cambridge University, February–March 1998*. Manchester: HAU Publications.

Derrida, Jacques. 1981. *Dissemination*. Translated by Barbara Johnson. Chicago: The University of Chicago Press.

——. 1994. *The Specters of Marx*. Translated by Peggy Kamuf. London: Routledge.

Fry, Tony. 1994. *Remakings: Ecology/Design/Philosophy*. Sydney: Envirobook.

——. 2014. "'China vs China': Conflict and Translation." In *Design in the Borderlands*, edited by Eleni Kalantidou and Tony Fry, 12–36. London: Routledge.

——. 2017. *Remaking Cities: An Introduction to Urban Metrofitting*. London: Bloomsbury.

——. 2021. *Writing Design Fiction: Relocating a City in Crisis*. London, Bloomsbury.
Hamilton, Clive. 2020. "Toward a Fifth Ontology for the Anthropocene." *Angelaki* 25, no. 4: 110–119.
Harding, Sandra. 2018. *One Planet, Many Sciences*. Durham: Duke University Press.
Heidegger, Martin. (1954) 1977. "*Die Frage nach der Technik*" ("The Question Concerning Technology"). In *The Question Concerning Technology*, translated and edited by William Lovitt, 3–36. New York: Harper and Row.
——. (1966) 1991. "'Only a God Can Save Us': Der Spiegel's Interview with Martin Heidegger (1966)." In *The Heidegger Controversy: A Critical Reader*, edited by Richard Wolin, 91-116. Cambridge, MIT Press.
——. 2003. *The End of Philosophy*. Translated by Joan Stambaugh. Chicago: The University of Chicago Press.
Heidegger, Martin, and Fink, Eugen. 1979. *Heraclitus Seminar 1966/67*. Translated by Charles H. Seibert. Northwestern University Press: Evanston.
Heraclitus. 1987. *Fragments: A Text and Translation with Commentary*. Translated and edited by T.M. Robertson. Toronto: University of Toronto Press.
Hörl, Erich. 2017. "Introduction to General Ecology." In *General Ecology: The New Ecological Paradigm*, edited by Erich Hörl and James Burton, 1–74. London: Bloomsbury.
Hui, Yuk. 2016. *The Question Concerning Technology in China: An Essay in Cosmotechnics*. Falmouth: Urbanomic.
——. 2017a. "On Cosmotechnics: For a Renewed Relation between Technology Nature in the Anthropocene." *Techné: Research in Philosophy and Technology* 21, no. 2–3 (2017): 1–23.
——. 2017b. "Cosmotechnics and Cosmopolitics." *E-Flux* 86.
——. 2020. "Machine Ecology." *Angelaki* 25, no. 4: 54–66.
Jullien, François. 2014. *On the Universal, the Uniform, the Common and Dialogue between Cultures*. Translated by Michael Richardson and Krzysztof Fijalkowski. Oxford: Polity.
Ledderose, Lother. 2000. *Ten Thousand Things*. Princeton: Princeton University Press.
Lemmens, Pieter. 2020. "Cosmotechnics and the Ontological Turn in the Age of the Anthropocene." *Angelaki* 25, no. 4: 3–8.
Luhmann, Niklas. 1986. *Ecological Communication*. Chicago: The University of Chicago Press.
Mercier, Thomas. 2019. "Uses of 'the Pluriverse': Cosmos, Interrupted—or the Other Humanities." *Ostium.* https://ostium.sk/language/sk/uses-of-the-pluriverse-cosmos-interrupted-or-the-other- humanities/.
Mignolo, Walter. 2014. "An Exchange." In *Design in the Borderland*, edited by Eleni Kalantidou and Tony Fry, 173–188. London: Routledge.
Nancy, Jean-Luc. 1997. *The Sense of the Worlds*. Translated by Jeffery Librett. Minneapolis: University of Minnesota Press.
Needham, Joseph. 1964. *Science and Civilization in China*. Vol 4. Cambridge: Cambridge University Press.
——. 1970. *Clerks and Craftsmen in China and the West*. Cambridge: Cambridge University Press.
Savransky, Martin. 2021. *Around the Day in Eighty Worlds: Politics of the Pluriverse*. Durham: Duke University Press.
Schmitt, Carl. 1986. *Political Romanticism*. Translated by Guy Oakes. Cambridge: MIT Press.
——. 1996. *The Concept of the Political*. Translated by George Schwab. Chicago: The University of Chicago Press.
——. 2005. *Political Theology*. Translated by George Schwab. Chicago: The University of Chicago Press.
Simondon, Gilbert. 1958. *On Modes of Existence of Technical Objects*. Translated by Ninian Mellamphy. Paris: Aubier Editions Montaigne.
——. 2020. *Individuation in Light of Notions of Form and Information*. Translated by Taylor Adkins. Minneapolis: University of Minnesota Press. 2020.
Srnicek, Nick. 2016. *Platform Capitalism.* Oxford: Polity.
Stiegler, Bernard. 2011. *Pharmacology of Spirit.* Translated by Daniel Ross. In *Theory after Theory*, edited by Jane Elliot and Derek Attridge, 294–310. London: Routledge.
——. 2017. "General Ecology, Economy and Organology." Translated by Daniel Ross. In *General Ecology: The New Ecological Paradigm*, edited by Erich Hörl and James Burton, 87–101. London: Bloomsbury.
——. 2018. *The Neganthropocene*. Translated and edited by Daniel Ross. London: Open Humanities Press.

Van Camp, Nathan. 2012. "From Biopower to Psychopower: Bernard Stiegler's Pharmacology of Mnemotechnologies." *CTheory* (2012): 5–9. https://journals.uvic.ca/index.php/ctheory/article/view/14946/5842.

von Foerster, Heinz. 2003. *Understanding Understanding: Essays on Cybernetics and Cognition*. New York: Springer.

Watsuji, Tetsuro. 1961. *A Climate: A Philosophical Study*. Translated by Geoffrey Bownas. Printing Bureau, Japanese Government: Tokyo.

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[1] William Shakespeare, *Hamlet*, Act I, Scene 5.

[2] A common example of this problem is the use of "technology" to refer to digital technology and an assumption that it is independent from "earlier" and other technologies, which it is not. This is because of its connection to its sources of production and a supporting infrastructure; the greater the proliferation and diversity of technics and technologies, the deeper the problem (Hui, 2020).

[3] In support of this argument, Tony Fry and Madina Tlostanova analytically interrogate the erring ways of existing politics—structurally, ideologically, conceptually, intellectually, and institutionally—and detail a picture of what a new political imagination has to transcend; see *A New Political Imagination: Making the Case* (London: Routledge, 2021).

[4] Martin Heidegger first pointed this out in 1954 in his essay "The Question Concerning Technology," in *The Question Concerning Technology and Other Essays* (Heidegger 1977).

[5] Francois Lagarde's excellent 2012 film *Simondon du désert* (Hors Oeil Edition) presents a picture of a man whose childhood experience of life in an industrialized region in rural France profoundly influenced how his thinking of this relation was formed. Effectively, Simondon is himself a clear example of his own theory of preindividuation. As the film shows, much of his character, values, and thinking emerged out of his own lived experience of growing up in a rural/industrial nexus environment.

[6] In 1948, Norbert Wiener named the systems concept he was developing "cybernetics." In doing this, he drew on the ancient Greek word *kynernan*, which means "to steer." Etymologically, this links to its function in relation to "control," "regulate," and "govern"; see *Cybernetics: Or Control and Communication in the Animal and Machine* (Cambridge: MIT Press, 1948).

[7] "Enframing" (*Gestell*) means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing reserve. "Enframing" means that way of revealing that holds sway in the essence of modern technology and that is itself nothing technological (Heidegger 1977, 20).

[8] The created worlds of the city, town, village, and home all arrived by a process and sources of destruction (from the felling of trees, the quarrying of stone, and the mining and burning of coal to the introduction of toxic waste and pollutants into terrestrial and marine environments).

[9] Dis-associative theory is not linked to dissociative disorders, but it could be seen to connect to the psychology of academic detachment. Dissociative disorders, as defined by the APA, involve problems with memory, identity, emotion, perception, behavior, and sense of self. They can potentially disrupt every area of mental functioning. They are frequently associated with previous experience of trauma and can produce detachment from thoughts, feelings, and a sense of the body, as well as a loss of memory (American Psychiatric Association).

[10] Jakarta, Indonesia's current capital, is sinking, suffers regular and severe floods, and is very exposed to sea level rises. As a result, the capital is being moved a new location under construction in the Indonesian state of Kalimantan in Borneo.

[11] The fifth ontology is posed against the four ontologies presented by Philippe Descola (2013).

[12] Savransky has his own pluriverse project, which he asserts is not merely a matter of acknowledgement. Rather, the pluriverse is also that which "must be made" (2021, 124).

[13] Augustine Berque makes clear in discussing mesology, and Watsuji's understanding of it, that Fûdo identifies a difference between environment, milieu, and mediance—the structural condition of human existence; see "Nature, Culture: Trajecting Beyond Modern Dualism," *Inter Faculty* 7 (2016): 30.

[14] This situation is not a projection but an already existing actuality created by COVID-19 in poor countries where government abandons the people (an example of impacts arriving beyond the economic means of nations), who, without income or any other economic means of support, are left to starve).