



PALGRAVE STUDIES IN
EDUCATIONAL FUTURES

Ahuman Pedagogy

Multidisciplinary
Perspectives for Education
in the Anthropocene

Edited by
Jessie L. Beier · jan jagodzinski

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Palgrave Studies in Educational Futures

Series Editor

jan jagodzinski, Department of Secondary Education, University of
Alberta, Edmonton, AB, Canada

The series Educational Futures would be a call on all aspects of education, not only specific subject specialists, but policy makers, religious education leaders, curriculum theorists, and those involved in shaping the educational imagination through its foundations and both psychoanalytical and psychological investments with youth to address this extraordinary precarity and anxiety that is continually rising as things do not get better but worsen. A global de-territorialization is taking place, and new voices and visions need to be seen and heard. The series would address the following questions and concerns. The three key signifiers of the book series title address this state of risk and emergency:

1. **The Anthropocene:** The ‘human world,’ the world-for-us is drifting toward a global situation where human extinction is not out of the question due to economic industrialization and overdevelopment, as well as the exponential growth of global population. How to we address this ecologically and educationally to still make a difference?
2. **Ecology:** What might be ways of re-thinking our relationships with the non-human forms of existence and in-human forms of artificial intelligence that have emerged? Are there possibilities to rework the ecological imagination educationally from its over-romanticized view of Nature, as many have argued: Nature and culture are no longer tenable separate signifiers. Can teachers and professors address the ideas that surround differentiated subjectivity where agency is no long attributed to the ‘human’ alone?
3. **Aesthetic Imaginaries:** What are the creative responses that can fabulate aesthetic imaginaries that are viable in specific contexts where the emergent ideas, which are able to gather heterogeneous elements together to present projects that address the two former descriptors: the Anthropocene and the every changing modulating ecologies. Can educators drawn on these aesthetic imaginaries to offer exploratory hope for what is a changing globe that is in constant crisis?

The series Educational Futures: Anthropocene, Ecology, and Aesthetic Imaginaries attempts to secure manuscripts that are aware of the precarity that reverberates throughout all life, and attempts to explore and experiment to develop an educational imagination which, at the very least, makes conscious what is a dire situation.

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Jessie L. Beier
Horizon Postdoctoral Fellow
Concordia University
Montreal, QC, Canada

jan jagodzinski
Department of Secondary Education
University of Alberta
Edmonton, AB, Canada

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This book is dedicated to the many teachers that have informed and impacted the pedagogical queries and preoccupations that continue to compel and inspire us. For Jan, the book is dedicated to his teacher and friend Harry (Zvi) Garfinkle (1922–2021): “He showed me what it means to be a teacher. The only true genius I ever met.” And for Jessie, this book is dedicated to her mom, Maureen Beier (1955–2013), and dad, Paul C. Beier (1951–2018): “They showed me how to learn, even when it hurts.”

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CONTENTS

1	Introduction	1
	Jessie L. Beier and jan jagodzinski	
Part I Conjuring an Ahuman Pedagogy		
2	Ahuman Occult Pedagogy in Practice	17
	Patricia MacCormack	
3	The Literacy Situation: Education and the Dispersal of Politics	35
	Nathan Snaza	
4	Educational (Im)possibilities During the Necrocene: Ontological (In)securities and an Ahumanist Existentialism?	55
	Cathryn van Kessel	
5	Toward an Unsettling Hauntology of Science Education	77
	Marc Higgins	
Part II Machinic (Re)Distributions		
6	Mapping Entanglement: Mobilizing the Uncanniness of Machine-Vision	99
	Delphi Carstens	

7	Transversing Digi-Spaces and Newcomer Youth Encounters: Considering a Minoritarian Politics Online	123
	Adriana Boffa	
8	Practicing the Future Together: Power, Safety, and Urgency in the Distributed Model	149
	Christina Battle	
Part III Non-Pedagogies for Unthought Futures		
9	“Against” Education: A Roundtable on Anarchy and Abolition	167
	Andrew Culp in Conversation with Jessie L. Beier, Vicky Osterweil, and Jose Rosales	
10	Terminal Protagonism: Negation and Education in the Anthropocene	191
	Petra Mikulan and Jason J. Wallin	
11	The Cosmoecoartisan: Ahuman Becomings in the Anthropocene	213
	jan jagodzinski	
12	Ahuman Manifestations: When There Is No Outside (or, a Long, Good Sigh)	275
	Jessie L. Beier	
	Index	295

NOTES ON CONTRIBUTORS

Christina Battle is an artist, curator, and educator based in amiskwaciwâskahikan, (also known as Edmonton, Alberta), within the Aspen Parkland: the transition zone where prairie and forest meet. Battle's work focuses on thinking deeply about the concept of disaster and the ways in which it might be utilized as a framework for social change. Much of this work extends from her recent Ph.D. dissertation (2020) which looked closer to community responses to disaster: the ways in which they take shape, and especially to how online models might help to frame and strengthen such response.

Jessie L. Beier is a teacher, artist, writer, and conjurer of weird pedagogies for unthought futures. Working at the intersection of philosophy, artistic production, and radical pedagogy, Beier's practice experiments with the potential for weird pedagogy to mobilize a break from orthodox referents and habits of repetition, toward more eco-logical modes of thought. Beier is a recent Ph.D. graduate (Department of Secondary Education, University of Alberta), an artist-researcher with the collaborative research-creation initiative *Speculative Energy Futures* (University of Alberta), and an artist-philosopher-in-residence with an educational network located in amiskwaciwâskahikan (Edmonton Public Schools, Alberta). She is currently a Horizon Postdoctoral Fellow at Concordia University and her most recent projects and publications include "Tracing a black hole: Probing cosmic darkness in Anthropocenic times," "Pedagogy of the Negative: Pedagogical Heresy for 'The End Times'"

(with Jason Wallin), and the soon-to-be published, collaboratively-created Energy Emergency Repair Kit (E.E.R.K.). For more information, visit jes siebeier.com.

Adriana Boffa is a teacher, researcher, writer, mother, and transversal thinker. She recently defended her PhD in the Department of Secondary Education at the University of Alberta on Amiskwaciwâskahikan, Treaty 6 territory. Her work intercepts and thinks with the philosophies of Deleuze and Guattari in order to explore what it might mean to engage with place and difference differently in a digi-techno society that is everyday restricting both notions of place and belonging in contemporary public and educational spaces.

Delphi Carstens is a lecturer at the University of the Western Cape with an interest in feminist new materialisms, Deleuze-Guattarian theory, uncanny science fictions, and the apocalypse. He has published widely on the relevance of these matters to Anthropocene-appropriate HE (higher education) pedagogy, most recently in *Somatechnics*, *Parallax*, and *Philosophy Today*.

Andrew Culp is a professor of Media History and Theory at the California Institute of the Arts, teaching in the M.A. in Aesthetics and Politics program and the School of Critical Studies. His first book *Dark Deleuze* (University of Minnesota Press, 2016) proposes a revolutionary new approach to the work of Gilles Deleuze to confront today's compulsory happiness, forced visibility, and decentralized control. It has been translated into over a half-dozen languages. His most recent book is *A Guerrilla Guide to Refusal* (University of Minnesota Press, 2022) and offers a field guide to a nonfascist life at the end of the world as we know it.

Marc Higgins is an assistant professor in the Department of Secondary Education at the University of Alberta and is affiliated with the Faculty of Education's Aboriginal Teacher Education Program (ATEP). Higgins' research work is an extension of a longstanding involvement with, in, and across the fields of Indigenous education, science education, and media-technology education. Higgins' research investigates the complexities and complications that occur through negotiations of Indigenous and Western modern ways-of-knowing (i.e., epistemology) and ways-of-being (i.e., ontology) within educational spaces. In order to work within and against systems that render these encounters a form of pedagogical violence

and/or (fore)closure, Higgins works in the methodological space within and between Indigenous, decolonizing, post-colonial, and post-humanist theories in order to think and practice education and educational research differently around contested curricular concepts (e.g., what “counts” as science) toward ethical forms of Indigenous–non-Indigenous relationality.

jan jagodzinski is a professor of Visual Art and Media Education at the University of Alberta in Edmonton, Alberta, Canada. He is series editor for *Educational Futures* (Palgrave-Springer) and the author of 17 books, including recent titles: *The Deconstruction of the Oral Eye: Art and Its Education in an Era of Designer Capitalism* (Palgrave, 2010), *Arts-Based Research: A Critique and Proposal* (with Jason Wallin, Sense Publishers, 2013), *Schizoanalytic Ventures at the End of the World: Film, Video, Art and Pedagogy* (Springer-Palgrave, 2019) and *Pedagogical Explorations in a Posthuman Age: Essays on Designer Capitalism, Eco-Aestheticism, Visual and Popular Culture as West-East Meet* (Springer-Palgrave, 2020).

Patricia MacCormack is a professor of Continental Philosophy at Anglia Ruskin University Cambridge. She has published extensively on philosophy, feminism, queer and monster theory, animal abolitionist activism, ethics, art, and horror cinema. She is the author of *Cinesexuality* (Routledge 2008) and *Posthuman Ethics* (Routledge, 2012) and the editor of *The Animal Catalyst* (Bloomsbury, 2014), *Deleuze and the Animal* (EUP, 2017), *Deleuze and the Schizoanalysis of Cinema* (Continuum, 2008), and *Ecosophical Aesthetics* (Bloomsbury, 2018). Her new book is *The Ahuman Manifesto: Activisms for the End of the Anthropocene* (Bloomsbury, 2020).

Petra Mikulan currently teaches educational foundations, curriculum theory, and educational ethics in the Department of Educational Studies at the University of British Columbia, where she completed a SSHRC and Killam funded postdoctoral fellowship. Her work addresses transdisciplinary intersections between ideas of vitalism and life as they pertain to ethics, feminist race theory, biopolitics, and post-qualitative reading. She has published in leading interdisciplinary journals, such as *Educational Theory*, *Educational Philosophy and Theory*, *ZDM*, *Philosophy of Mathematics Education Journal*, *Delta: Journal for gender studies and feminist theory*, *Sodobna Pedagogika*. She is the Book Reviews Editor for *Studies in Philosophy and Education*.

Vicky Osterweil is a writer, editor, and agitator based in Philadelphia. Her book *In Defense of Looting* (Bold Type Books, 2020) is a history of rioting and looting as an anti-police, anti-white supremacist tactic in the US. She is the co-host of *Cerise and Vicky Rank the Movies*, a podcast where they are ranking all the movies ever made.

Jose Rosales is a researcher, writer, and editor based in Queens, NYC. Their work can be found in publications such as *Unworking* (August Verlag, 2021), *Deleuze and Guattari Studies Journal*, *La Deleuziana*, *Identities Journal*, *Blindfield Journal*, and *Riot. Theorie und Praxis der Kollektiven Aktion* (Laika/NON, 2018). They are co-editor of *Diversity of Aesthetics*, a forthcoming series of conversations relating to the themes of Infrastructure Critique, Human Strike & Destitution, and Looting, featuring friends and accomplices such as Sheyllene Rodriguez, Michael Rakowitz, Stephen Shukatis, Vicky Osterweil, Andreas Petrossiants, Claire Fontaine, and Iman Ganji among others.

Nathan Snaza teaches English literature, gender studies, and educational foundations at the University of Richmond, USA. He is the author of *Animate Literacies: Literature, Affect, and the Politics of Humanism* (Duke UP, 2019) and co-editor of *Pedagogical Matters: New Materialisms and Curriculum Studies* (Peter Lang, 2016) and *Posthumanism and Educational Research* (Routledge, 2014).

Cathryn van Kessel is an associate professor in the Department of Counseling, Societal Change, and Inquiry in the College of Education at Texas Christian University. She has been engaging with different conceptualizations of evil as well as human existential situations in the context of education, especially social studies curriculum, among other topics and contexts. Cathryn is the author of *An Education in "Evil": Implications for Curriculum, Pedagogy, and Beyond* (Palgrave Macmillan, 2019), an associate editor for the journal *Canadian Social Studies*, and manages *The Grim Educator* open educational resource with information and lessons for educators.

Jason J. Wallin is a fictional character that appears throughout Season 1 of the Canadian sci-fi horror series “Halfsharkalligatorhalfman” (1975–1976). Created by showrunners Bessie I. Jere and Janka Jodi Zings, Wallin was brought to screen through the elaborate practical effect of combining naturally occurring fungal masses and Aerogel. Wallin’s “sound palette” was created by foley artist Karlie Putnam by boiling moon rocks in Vantablack cookware. Throughout his run on the series, Wallin was portrayed as an amateur teratologist and sometimes curriculum theorist maligned for his pessimistic attitude toward life. Wallin was part of a running gag established throughout Season 1 in which he would spontaneously disassemble at the sight of himself.¹

¹ Jason J. Wallin is a professor of Media Studies and Youth Culture in Curriculum at the University of Alberta, Canada. He is the author of *A Deleuzian Approach to Curriculum* (Palgrave Macmillan) and *Arts-based Inquiry: A Critique and Proposal* (Sense Publishers), and co-producer of the extreme music documentary BLEKKMETAL (Grimposium, Uneasy Sleeper).

LIST OF FIGURES

Fig. 6.1	Orphan Drift, 1999, Xes Avatar wall collage, SYZYGY multi-media installation at Beaconsfield Arts London	104
Fig. 6.2	Orphan Drift, 2017, Husher Avatar (video still), GREEN SKEEN. single channel HD video collaboration with Plastique Fantastique. running time 45:00	110
Fig. 6.3	Orphan Drift, 2018, Synthetic (video still), MIASMA. single channel HD video for Chrominance, Alembic II at Res Gallery, London. running time 15:00	112
Fig. 6.4	Orphan Drift, 2019, If AI were Cephalopod. 4 channel HD video installation at Telematic Gallery San Francisco. running time 11:00	113
Fig. 7.1	Rishma Shariff, 2021, @rishmashariff (with permission). Voicing her critique of the term “newcomer” in the <i>NewLearnAlberta</i> Curriculum 2021 draft	126
Fig. 11.1	jan jagodzinski, 2021, earth-representation-world-for-us-analogue	222
Fig. 11.2	jan jagodzinski, 2021, planet-non-representation-world-without-us	227
Fig. 11.3	jan jagodzinski, 2021, grasping the cosmological implications	242
Fig. 11.4	jan jagodzinski, 2021, Lacan’s three diagrams	243
Fig. 11.5	jan jagodzinski, 2021, magnifying the event	244
Fig. 11.6	jan jagodzinski, 2021, possibility of an extinction event	255



CHAPTER 1

Introduction

Jessie L. Beier and jan jagodzinski

ALL-TOO-HUMAN PROBLEMS

While it is apparent, especially in these times of viral contagion, that the “human” is not the bounded individual it is so often imagined to be, there is a danger lurking in the increasingly common claim in contemporary curricular and pedagogical thought that what is needed is a decentering of all-too-human forms of subjectivity. While this claim has catalyzed alternative research methods and conceptual approaches, such as those within what is often called post-qualitative and/or post-human studies in the field of education, this claim must also contend with the ways in which such decentering and fragmentation is not immune, so to speak, to the imperatives of neoliberal education and its demands for a

J. L. Beier (✉)

Horizon Postdoctoral Fellow, Concordia University, Montreal, QC, Canada

e-mail: jlbeier@ualberta.ca

j. jagodzinski

Department of Secondary Education, University of Alberta, Edmonton, AB,
Canada

e-mail: jj3@ualberta.ca

fully-automated, dividuated and dividuating, machinic subjectivity. This is especially the case given the way in which many purported expansions or dilations of subjectivity today remain subtended by practices and protocols wherein the “human,” even in its decentering, is reinstalled through racist, gendered, ableist, and classist conceptions of education. Such a concern is at play when it comes to issues of “diversity” within educational domains. Where “diversity” is most often promoted as the proliferation and inclusion of specific forms of *identity*, it has become a fulcrum for reproducing the categories used not only for cultural industries to sell their products, but for political power to target specific populations in order to promote ideological ends. Here, the educational subject as “dividual” (Deleuze, 1992) becomes a composite slate of affects, desires, genders, social class, race, disability, etc...., where the number of variables appears as seemingly endless selections (from a drop-down menu, for instance) that are nevertheless used to code algorithms and target predetermined identifiers. Within such examples of educational “diversity,” the human, and its potential decentering, offers yet another “figure” of technology, one wherein ongoing self-modulation, dividuation and thus affective manipulation is seen as central to becoming-educated. Where liberation and democratic practices have become correlated to what is deemed “freely chosen,” no company, political party or educational institution, it seems, can act differently if it continues to operate under fantasies of diversification that nevertheless reproduce the same. The “human,” a figure whose very history has been based on a series of necessary exclusions, is what now becomes dispersed in its particularity so as to uphold and reproduce identitarian politics and their education.

Where, within the field of educational studies, new versions of phenomenology and hermeneutics, including autobiographical research characterized by a third person perspective that (often) pretends to non-objectivity (rather than subjectivity), proliferate alongside post-qualitative work that draws on philosophers such as Deleuze and Guattari, albeit in manners often stripped of their radical struggles against, for instance, the pervasiveness of fascism, the call for a pedagogy that decenters the “human” must face up to its own unquestioned assumptions and commitments, its own inheritances, lineages, and trajectories. In this sense, perhaps, the term *neo*-qualitative research is a much better descriptor of the purportedly post-oriented directions that now populate the field of education and its research. Deployments of many educational new materialisms, such as those that draw on Barad’s (2007) “diffraction

methodology,” for instance, forward a neo-Derridean poststructuralism that remains tethered to anthropocentric visions of life, while many so-called post-human approaches, such as those that draw on an “affirmative Deleuze,” do away with Guattari’s more militant ecosophy, thus overlooking the destructive forces and intensities that constitute anorganic life. While such examples point to the vexing difficulties of thinking “beyond” the human and its given forms of education, the claim that education (and its reasons) must come to terms with today’s transformed and transforming planetary realities—what is sometimes called (with contention) the Anthropocene—nevertheless persists.

The *anthropos* of the Anthropocene is founded on illusions of dominion and control that stem from its very formation through, for instance, the Gnosticism of the New Testament and its imagining of the “Primeval Man.” Within this narrative, the “human” has been dreamt up as the son of “Man,” where *Adamas* (Hebrew for *earth*) ends up as the “first human being,” reinstating or vivifying the very values of destructive anthropogenic productive labor that must now be mitigated and curbed so as to, at the very least, delay and stave off the extinction of the genus *Homo*. The pervasive narrative that “Man” forwards continues to reign supreme through, for instance, the trajectories of (interstellar) colonization, the first step already taken by billionaire tourist-astronauts where the rocket (appropriately named New Shepard¹) does it “all” for you, not unlike an electric car that drives itself. This shepherding of “Man” and his desires for endless expansion are concomitant with various forays into biomimetic innovation, transhumanist evolution, and questionable forms of accelerationism, all of which must exploit “Nature” in the name of saving it, or more accurately, in the name of saving “us.” Nature, in these examples, becomes the “wise” teacher, seen as that which holds the secrets of sustainable design and de-extinction programming. Transhumanism speaks for itself in its attempts to harness the achievements of the fourth industrial revolution by converging nano-bio-info-cogito (NBIC) innovations in order to supersede what is currently perceived as “human” limits. There is a fatalism to such ambitions, a recognition that to stave off extinction would require complete body modification so as

¹ Owned and led by Amazon CEO Jeff Bezos, New Shepard is a vertical-takeoff, vertical-landing crew-rated suborbital launch vehicle developed as a commercial system for space tourism. The name makes reference to the first American astronaut in space, Alan Shepard, but is also, notably, homophonic with the word “shepherd.”

to survive the changing conditions of today, and tomorrow's, planetary realities. These fatalistic trajectories are supplemented by all kinds of old and new machinic self-learning technologies that lay claim to a knowledge paradigm based on the archives of big data and its potential to be extracted and employed toward supposedly customizable ends. Like biomimetic and transhumanist proposals, this appeal to a customizable, self-managed and self-managing, knowledge paradigm is far from liberatory, aimed instead at reinvigorating global capitalism and the ongoing exploitation of the Earth for economic expansion even as the sky darkens.

Indeed, today's global pandemics, the drift toward autocracy, ongoing wars over resources prompted by drought and (so-called) scarcity, the plastic toxicity of the oceans, increases in volcanic activity, but also hurricanes and tornadoes, migration by asylum seekers fleeing war-torn countries, global-supply chain malfunctions on all fronts, and the change of the Earth's resonance, point to a very real "phase change" of natureculture, one that might provoke yet unthought pedagogical questions and orientations. With this disastrous scenario in mind, alternative or "better" attunement to the non-human or more-than-human relations that characterize life today have been central to the rallying cry of what might be identified as post-human pedagogies, or pedagogies that attempt to extend and apply human inclusivity to all "things." Within many post-human proposals lies a vitalism that works to resurrect and reanimate matter, albeit in ways that remain beholden to all-too-human forms of life and living. Animals, waterways, trees, and land are given newfound "rights," in some cases even treated as people, offering numerous examples of weak and strong forms of prevailing panpsychism where human forms of reason and agency are downloaded on to all "things." Amidst these animations, process philosophies, such as those offered by Deleuze and Whitehead, abound, as does the performative fictioning of mythopoetics, mythotechnics, occult speculations, and the myth-science of Gnosticism as it has been added to an array of Indigenous cosmologies. The potentiality of such pedagogies, however, has yet to be fully realized as evidenced by various forms of environmental education that attempt to incorporate what has become the centering trope of "ecology" as an all-encompassing word that nevertheless gets distilled as a "network of things" (not unlike the "internet of things"). While various forms of open-system thinking are entertained, from complexity theories to the powerful notion of the negentropy of dissipative structures, many post-human pedagogies remain beholden to what amounts to a

fundamental redemptive narrative where the magical words “ecology” and “organicity” are asked to do the heavy lifting of “saving the earth.”

Further, while many post-human pedagogies necessitate a recognition of (digitalized) technologies and their relations with analogical thinking, as practiced, for instance, through science, technology, and society studies (STS), they have become hijacked by those advocating for an ecomodernist manifestation of a “Good Anthropocene.” A “Good Anthropocene,” as laid out by the optimism of the Breakthrough Institute and the many references to it in educational TEDTalks, sees “sustainability” initiatives and “green” educational projects as the most “realistic pathways” forward given current planetary trajectories. Within this optimistic narrative, which now pervades mainstream educational policies and practices, the different possible futures through which education might proceed all end with “green” capitalism as the “best” possible outcome. In all of these articulations of “good” educational futures, which proceed and proliferate in spite of today’s deleterious trajectories, the theodicy of the “beautiful soul” (Hamilton, 2016) seems to be a dominant position. Central to this is a biophilic preoccupation, or an “innate love for nature,” which was introduced and popularized now decades ago by thinkers such as Edward O. Wilson (1984), and has now become a centralizing narrative for a sector of environmental education and its accompanying typology of human attitudes toward nature grounded in biology. Along these biophilic lines, Stephen Kellert (1993) has developed nine perspectives or valuations of nature, which have had consistent “staying” power within educational domains where nature is framed as utilitarian (practical and exploitive), naturalistic (satisfaction from contact with nature), ecologicistic-scientific (systematic study of nature), aesthetic (physical appeal), symbolic (expressive thought), humanistic (emotional attachment, strong affection), spiritual (moral and ethical reverence), dominionistic (mastery), and negativistic (fear, alienation, aversion). All of these narrative devices are “classically” anthropocentric and are seen as being “essential” to nurturing childhood in one form or another, especially when it comes to projecting “Good” Anthropocene futures for “us.”

While the biophilia hypothesis has no actual “scientific” grounding (unlike biophobia where there is genetic [DNA] evidence for the fear of snakes, spiders, or carnivores), it is not without its merits as there is wide-ranging evidence that shows the psychological benefit of pets (especially dog and cats) and horses for mediating and relieving stress. The same

is said of the need to cultivate attachments to land and a sense of place (*genus loci*). Biophilia's evolutionary adaptive necessity has been rigorously defended (Barbiero & Berto, 2021), while its aesthetic forms have become the basis for environmental design and a defense of biodiversity both within and without educational domains (Kellert, 2009, 2018). With biophilic design, for instance, yet another set of features emerge that are meant to contribute to the well-being of humans, i.e., natural light, protection and control, air (its quality), views of nature (as connection with it), curiosity and enticement, and material (connection with nature). Indeed, many of the contemporary proposals or *manifestos* for living in the Anthropocene are based on biophilic principles (Gibson et al., 2015) or the championing of symbiosis and “companion species” (Haraway, 2003), raising issues in relation to the distinctions between what has been deemed as “tame” and what remains “wild.” The contradictions and contentions that might be raised by biophilic positions, however, tend to ignore and downplay the disparaging issues surrounding things like animal abuse—be it pets or domesticated farm animals—which have received far less scrutiny within education's biophilic adoptions. While there are, of course, exceptions, such as the writings of Helena Pedersen (2013, 2019) who is a lone voice when it comes to “post-qualitative” approaches to human/animal relations, education's biophilic commitments reveal the ethico-political contradictions, but also continuations, involved in purported attempts at rethinking the human in terms of its non-human relations.

With the limits of contemporary educational approaches at the forefront, it is becoming increasingly clear that a shift to post-qualitative and/or post-human education may not be bold enough to meet the extraordinary challenges that lie ahead. While many post-humanist educative trajectories (cl)aim to dilate relations beyond the standardized figure of the human, they merely work to preserve “the human-all-too-human” rationality undergirding education and its demands for progressive amelioration. The plea for a “rationality” capable of staying with the troubling “facts” of planetary matters remains beholden to the legacies of modernism, which simply no longer apply with the vigor they once did. The capitalist technologies of media platforms, which now extend far beyond “social” sites, occupying various economic, political, and educational domains, have been influential in their business models and regulatory rules to enable the oxymoron of “mass customization,” in turn working to re-vivify a hyper-individualism that is considered a

hallmark of capitalist “freedom” defined by purchasing power and self-motivated decision-making. This is accompanied by various attempts to harness the power of “edutainment” as a motivating force, which has now extended into all facets of life, engendering a bio-politics that takes us into a “clairvoyant society” (Neyet, 2017) where control is manufactured in ways that are extraordinarily illusive, impossible to regulate or enforce. The system, as they say, is “broken.” What were once considered the foundational pillars of “democratic” value formation, written into national constitutions and educational policy alike, are coming apart and breaking down as new forms of paranoia and micro-fascisms manufactured through conspiracy theories and post-truth proclamations spread across social life. This is accompanied by a “breakdown” of economic orders, which are not a problem for current organizations of power but, as the most recent pandemic has shown, an opportunity for “innovative” pivots. There is something ironically sad about the breakdown of the global-supply chain due to the pandemic so that children may not get their toys (from China) this holiday season. The story has it that those with money to spend did so with force amidst the recent pandemic lockdowns, “clicking” 24 hr a day online, to the point that the shipping containers holding their “goods” are all backed up. More ironic is the labor shortage that prevents the movement of such “goods” from ports and harbors with long waits by truckers who, not unlike all the other “essential” workers who must put their body on the (front)line(s), are simply not paid well enough, overworked and overwhelmed. Of course, for the financial market the rhetoric is that this is but a “glitch” that will sort itself out ... soon. Such ironies profoundly illustrate the “house of cards” that the capitalist system balances on. For all the talk of cutting back oil and coal plants during the past string of UN-sponsored Conferences of the Parties (COPs), with number 26 taking place in the UK in the fall of 2021, the reality of the global market shows that global currencies continue to be tied to the oil market’s supply and demand, that natural gas can be used as a political weapon, and that there is no stoppage to building coal plants and discouraging nuclear energy, which is now positioned as one of the most “efficient” and “clean” sources of energy to date. Given this difficult context, for educators there is no safe space in these times, no neutral ground to stand back on. (Was there ever?) With paranoia and anxiety as the dominant forms of mental pathology in the twenty-first century, each organ of the body finds its path to recovery as well as sickness: the brain between explosive plasticity to Alzheimer’s, the hands, from fingers to thumbs, the feet, from walking

to scooters, the stomach from McDonalds to sushi, the eyes wide open to “wide shut,” the face, from being white to becoming a probe-head, the cancerous skin that keeps on spreading.

AHUMAN PROPOSITIONS

It is from this challenging context that this book and its research have emerged. Originally prompted by a lecture series titled “Lectures on Ahuman Pedagogy” held at the University of Alberta in 2019/2020,² this book brings together a collection of thinkers invested in grappling with how pedagogy might become adequate to the challenging ecological, political, social, economic, and aesthetic milieu within which education is situated today. The contributors to the lecture series and this subsequent edited collection include a stellar array of thinkers, some of whom are situated within the field of educational research proper (i.e., educational researchers and curriculum theorists) and some who come from areas such as fine arts, media theory, and philosophy where pedagogy is nevertheless a major part of their thinking and practice. By bringing together a collection of multi-disciplinary voices to discuss, debate, and devise a series of *ahuman* pedagogical proposals that aim to address the perplexing situation outlined above, we understand this collection of essays as much-needed experimental, albeit always speculative, always incomplete, projections that might work to challenge, dismantle, and even refuse educational futures-as-usual. Attending to contemporary calls to decenter all-too-human educational research and practice, while also coming to terms with the limits and inheritances through which such calls are made possible in the first place, this book aims to interrogate, but also invent, what we are calling an *ahuman pedagogy*, one that might be capable of speculating on the role of pedagogy and its futures on a transformed and transforming planet.

Riffing on the concept of the *ahuman* proposed by Patricia MacCormack (2019), this book aims to present a bold pedagogical proposal for the age of the Anthropocene. The multi-disciplinary analyses and projections offered in this book start from that wager that the dominance of anthropocentric thinking and the identity politics from which such thinking emerges, both of which pervade education, requires a

² To learn more, visit www.lecturesonahumanpedagogy.com.

concerted reorientation so as to take seriously those non-human (from critters to anorganic elemental forces) and inhuman forces (from artificial intelligence and algorithmic computation) that co-constitute pedagogical life today. At the same time, however, we assert that this call for reorientation—for the decentering and redistribution of subjective resources—requires a critical lens, one that challenges the ways in which seemingly liberatory approaches to educational research (including post-human and post-qualitative ones) may, in fact, reproduce the rationalities they (cl)aim to refuse. It is for this reason we turn to the concept of the *ahuman*, which is, following MacCormack (2019), exercised as a way of enacting small pedagogical tactics and minor educational radicalizations aimed at “thinking of ways beyond and ways out, not for ourselves, but for the world” (p. 2). In her ahuman manifesto, MacCormack is also concerned with the limits of post-human proposals, articulating how the post- of the post-human often works, on the one hand, to reaffirm a reified human subject through transhumanist imaginings and/or nihilist fantasies of human perpetuation, and on the other hand, picks up a “vitalistic turn which attempts to reinvigorate a positive end to anthropocentrism” (p. 11). As such, and especially after the declaration of the small-a *anthropocene*,³ MacCormack asserts that the post-human “seems to have exhausted itself” (p. 11). Where the post-human tends to enact research and practice through a continuation of demarcating and naming compulsions, albeit ones that exist “after” or “beyond” the “human,” the concept of the post-human has shown “an insipid incapability of the tremendous grace in not knowing and in leaving be” (p. 13). Against the post-human, MacCormack offers the term ahuman as the impetus to think and live in ways that renounce human privilege through alternative ways of reading and writing, ones that might make the very concept of an “us” vulnerable to examination, and even abolition. The essays that make up this edited collection aim to practice such ahuman ways of reading and writing in order to activate pedagogical forces and trajectories that do not seek to solve current crises, educational or otherwise, but instead endeavor toward shattering the presuppositions the undergird humanist (and post-humanist) education. The aim here is not to reinvent education in the name of “better” human futures, but to dismantle

³ Patricia MacCormack deliberately does not capitalize the a in anthropocene in order to enact an ahuman intervention into the term, one that works towards dismantling the dominance of the human, or anthropos, at its center.

and forsake human privilege “so that each expression of life, human and nonhuman, has a greater capacity for expression and liberty, and the earth’s multiple environments have a chance at one of many varied alternative presents and futures” (MacCormack, 2019, p. ix). MacCormack makes her own calls for the forms of “letting go” and “leaving be” that might enable such unthought expression clear; specifically, her manifesto is a call for activism that “practice abolitionist veganism, cease the reproduction of humans and develop modes of expression beyond anthropocentric signifying systems of representation and recognition [so as to generate] care for this world at this time until we are gone” (p. 10). While some of the chapters in this collection extend and experiment with these demands in relation to questions of pedagogy and education, it is this last point—the development of modes of expression that might generate care for *this* world—that has catalyzed this collection of ahuman pedagogical proposals. What this book aims to articulate through the concept of the ahuman is, in this way, not just an application or transposition of MacCormack’s demands into educational domains, but instead a set of pedagogical experiments committed to “no longer argu[ing] like a human” (MacCormack, 2019, p. ix). The ahuman, in this sense, does not offer any sort of template, nor does it take for granted the promise of optimistic educational futures and the “Good Anthropocene” vibes on which they are founded. Instead, the ahuman as a concept to think with and think through “celebrates and demands imagination and creativity in an increasingly impossible world” (p. 11). Perhaps, in this way the ahuman might help to stave off the weight of nihilism that drags thought into apocalyptic scenarios, while, at the same time, facing head-on the more and more likely possibility of extinction that now threatens the species *Homo*.

This multi-disciplinary experiment in ahuman pedagogies for the age of the Anthropocene has been organized in three main sections: *Conjuring an Ahuman Pedagogy*, *Machinic Re/distributions* and *Non-pedagogies for Unthought Futures*. In the first section—*Conjuring an Ahuman Pedagogy*—we gather together a selection of ahuman ponderings that focus specifically on the question of pedagogy and educational transformation. This section opens with a chapter from Patricia MacCormack, who offers a speculative account of “Ahuman Occult Pedagogy in Practice.” In this opening chapter, MacCormack unfolds the ways in which the compulsory and complex affects of our interspecies, Earthly belonging have become

overcoded by impulses for anthropocentric modes that continue to privilege the human as a centering force. Against such impulses, MacCormack turns to an “ahuman artistry” that endeavors toward instigating occult practices of pedagogy that put creativity first in the name of “belief without dogma, hope without goal.” Following this entry, the section then proceeds through three essays that explore ahuman pedagogies in relation to particular sites of education and curriculum. In his chapter titled “The Literacy Situation: Education and the Dispersal of Politics,” Nathan Snaza draws on feminist work on data and an ahuman approach to the politics of literacy in order provoke attunements to “educational situations” as diffuse sites of more-than-human political contact from which “humans” (and those marked as inhuman or less-than-human) are generated. In Cathryn Van Kessel’s chapter titled “Educational (Im)possibilities During the Necrocene: Ontological (In)securities and an Ahumanist Existentialism?” she explores the tensions and im/possibilities of enacting an ahuman existentialism amidst today’s necropolitical milieu. Bringing together developments in terror management theory, decolonial pedagogies, and social studies education, van Kessel examines the role of pedagogy in grappling with the potential extinction of the human species (among other species) as well as the (human) limits of comprehending this demise. As a final entry for this section, Marc Higgins offers a chapter that aims “Towards an Unsettling Hauntology of Science Education,” one that examines how science education continues to be haunted by the (re)apparition of the question of where to “begin” with Indigenous ways-of-living-with-nature. In this chapter, Higgins addresses the ghosts of settler colonial injustice, not to repair the past but to (re)imagine a future justice to-come. As a bloc of affects, these four essays act as “forcework” to move educational thought into recesses that are usually not considered within a pedagogical context, namely the occult, the complexity of literary situations, necropolitics, and the hauntology of apparitions.

The second section of the book—*Machinic Re/distributions*—takes a closer look at the question of machinic subjectivity and pedagogical possibility as they are situated within today’s technological assemblages and machinic visionings. This section begins with a provocative piece from Delphi Carstens, who investigates ways in which the “technological sublime” might be productively undomesticated in his chapter titled “Mapping Entanglement: Mobilising the Uncanniness of Machine-Vision.” Drawing on the artistic work of the Orphan Drift collective and the artist Mer Roberts, Carstens experiments with the ways in which

machine-enhanced vision might be pedagogically redeployed in order to generate an ethico-aesthetic paradigm that works toward the realization of more-than-human futures, ones that linger beyond the pall of mechanically-produced extinction. In Adriana Boffa's chapter titled "Transversing Digi-Spaces and Newcomer Youth Encounters: Considering a Minoritarian Politics Online," the question of machinic subjectivity is posed once again, this time in relation to the possibility for youth to create counter-responses within the digi-spaces they are so often situated today. Drawing on Deleuze and Guattari, Boffa aims to think through, and with, youth interaction in online spaces in terms of desire in order to examine and experiment with the conditions for possible minoritarian becomings online. Christina Battle's chapter "Practicing the Future Together: Power, Safety and Urgency in the Distributed Model" is the final entry in this section, and aims to tease apart a network of BIPOC artists and creators that run parallel to, but also out of the purview of, formal artistic and academic sectors. Looking to the distributed nature of the internet as a tool that both limits and facilitates the possibility of such a network to exist in the first place, this chapter aims to experiment with the ways in which online networks, particularly those that remain invisible to dominant organizations of power, might come to be seen as important sites of education in their own right. While varied in their ahuman proposals and experiments, each of these chapters targets the "dividualization" of technology and what might be done to push back by working with it and against it in ways that might fool, betray, overload, and/or refuse the very algorithms that have been designed for capture.

The contributions to the final section—*Non-pedagogies for Unthought Futures*—take the optimism of (Good) Anthropocene trajectories head on in order to develop a series of non-pedagogical counter-speculations that take seriously today and tomorrow's era of ecocatastrophe. The section begins with a dialogue led by Andrew Culp titled "'Against' Education: A Roundtable on Anarchy and Abolition," which features a discussion between Culp, Jessie L. Beier, Vicky Osterweil, and Jose Rosales, who draw connections between education, social transformation, and abolition in their conversation. This dialogue explores the ways in which education fits (or not) within terrains of abolition, leading to considerations of whether contemporary forms of schooling, and perhaps even education itself, might be something to be abolished. Following this discussion, Petra Mikulan and Jason J. Wallin's chapter titled "Terminal

Protagonism: Negation and Education in the Anthropocene” counter-actualizes the familiar impulses within curriculum thought wherein the powers of affirmation and commitments to redemptive optimism are taken as given “facts” of the world. Asserting that educational thought today has become occupied by the automatic gesture of protagonism, this chapter assumes negativity as a “fatal strategy” for intensifying practices of negation that might be more adequate to the long-term effects of environmental collapse. In his chapter titled “The Cosmoecoartisan: Ahuman Becomings in the Anthropocene,” Jan Jagodzinski also experiments with the role of negation and the potential for non-pedagogical, ahuman becomings, this time through the conceptual persona of “the cosmoecoartisan.” This chapter offers a mind-bending attempt to provide a direction for facing the small-a *anthropocene* era through the creation of ahuman becomings, which are explored in diagrammatic relation to the concept of anorganic life as developed by Deleuze and Guattari. In a final chapter titled “Ahuman Manifestations: When There Is No Outside (or, A Long, Good Sigh),” and by way of concluding the collection, Jessie Beier probes the limits of educational transformation through the speculative figure of the sigh. Contrasting the sigh with dominant figures of transformative expression, such as the manifesto, the sigh is offered here as a weird prefigurative form for pedagogical resistance, one that reveals an asignifying, ahuman cosmicity that necessitates unthought practices of pedagogical “giving up.” This last section, then, attempts to venture into the unthought dimensions of ahuman pedagogy as a way of recognizing, perhaps, that a certain exhaustion has been reached, which the final essay’s “sigh” asks its readers to consider.

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PART I

Conjuring an Ahuman Pedagogy



CHAPTER 2

Ahuman Occult Pedagogy in Practice

Patricia MacCormack

FROM MARS TO VENUS

If we are to imagine ways in which the glittering desire to navigate the world quickened into what we now understand as knowledge, and from there its impartment, we exist in a thoroughly modern, or postmodern, (though these are increasingly interchangeable as capitalism and late capitalism), *techne* of pedagogy. From Descartes and Rousseau, we receive a form of knowledge as thoroughly anthropocentric epistophilia. In Descartes, this is knowledge as judicial, curiosity overtaken by atrophy as enforcement. Or, indeed existence through/as knowledge. In Rousseau, equality is de-monarchical but adamantly not equitable and makes the foundations of the new hierarchy of anthropocentrism above all as a divine testament with the Man-God himself passing the order. Among many others, ultimately still attached to divine monotheistic ideals, just with a louder real-life God in Male White European Able Man, Descartes and Rousseau set a stage for contemporary Continental Philosophy that sees man liberated insofar as he had become his own god, and knowledge was

P. MacCormack (✉)

Humanities and Social Sciences, Anglia Ruskin University, Cambridge, UK

e-mail: patricia.maccormack@aru.ac.uk

his divine right, spanning law, science, morality and “nature” in that the resonances of values of all were self-serving and imposed without claim to subjective motives. While selected as two of potentially many philosophers, these examples emerge in a milieu of modernity where the world exists for and in spite of “knowing better” somehow because of humans—the “good” things are human, and those that must be tamed inhuman or nonhuman, vindicating colonial genocide, ecocide, femicide, and theriocide. Epistemological arenas are claimed discrete but are not, because the anthropocentric values resonate. The anthropocentric values wage war upon the nonhumans. Those humans who do not pass—women, non-white people, disabled, queer—must either emulate and suffer anyway or be annihilated. Knowledge is a war on non-anthropocentrism. In other words, and as Serres (1995) writes:

scientific knowledge results in the passage that changes a cause into a thing and a thing into a cause, that makes a fact become a law, *de facto* become *de jure* and vice versa. The reciprocal transformation of cause into thing and of law into fact explains the double situation of scientific knowledge which is, on the one hand, arbitrary convention and is all speculative theory and on the other hand, the faithful and exact objectivity that underlies every application. (p. 22)

According to Serres (2000), modernity is defined by this particular entropy (p. 37): “[t]he Cartesian figure refers back to Euclid’s geometry, it is a metrics dominated by the algebra of proportions. Metered, masterable. The master and possessor of nature metricates his space. The Venutian contract leaves it as it is, venturesome and complex” (Serres, 2000, p. 51). Serres states simply that the Order of Mars is the Order of Knowledge, a violent battlefield, while the Order of Venus, the Order of Love, is one of simultaneous curiosity and what Serres calls grace, the leaving be of things as their own ebbs and flows, without atrophying them into objects and further values, hierarchical places, and judiciary property. This resonates with the alternative to Cartesian/Rousseauian confluences of human knowledge with truth or fact; Spinoza’s ethics of relationality and beingness in and of itself. Spinoza’s ethics is of universal fluidity where all matter is simply a singular manifestation of the same materiality, coming from his “God,” or the world, or energy translated into a more postmodern parlance. What matters in Spinoza’s materiality are the

infinite relations between energies and entities as joyful or painful, energizing or diminishing. All is already relational, no opposition exists per se, and no ordering of the world divides things, because thingness is found as much in relations between as unto a thing's self. This is necessarily Venu-tian, a question of what kind of love comes with relational flows, that of energizing liberty or diminishment? The Order of Mars in the knowing of the world is not only dialectic but isomorphically so, always a dominator or enforcer and an unknowable other who will be known, will be inserted into anthropocentric taxonomy, and if human, who will learn the system or be excluded by it at their peril. Learning how to know the world is violent, enforced, enacting an alienation from capacity for compassion and grace in exchange for a mastery of the world without a thought for the hubristic narcissism of the self that vindicates it. The Orders of Mars and Venus are not so much oppositional as operational along different laws of physics or perhaps a law and a lawlessness. The former exhibits a particularly anthropocentric tendency to atrophy. An organism's "thingness" is denied variability, mutability, and is categorized within seemingly (but not actually) infinitesimal strata that are always geopolitical in their layering, for no strata is without some associated value, increasingly capital value. Resonantly, the act of imparting knowledge, the structuring of performing knowledge exchange, is an exchange of will for obedience and mutability for anthropocentric benefit.

Various terms, reminiscent of Althusserian ideology, emerge as anthropocentric judiciary vindications for immutability—logic, common sense, fact, ultimately truth. Truth in postmodern and especially posthuman worlds is still a meaningful term. There is truth in actual death, actual suffering. It is often phenomena least convertible to language that have come to describe posthuman understandings of truth. The death of truth lamented by logocentrics due to the perceived evils of the relativity that defines postmodernity is truth belonging to the universalizing concepts of enlightenment anthropocentrism—convenient claims that merge the scientific with the judicial to ensure the continued supremacy of certain humans who helm and meter out truth and its consequences at their whim or for their benefit. The structure and content of anthropocentrism's Order of Venus are not quite atrophied within themselves, as they are flexible enough to adapt truths to the maintenance of power. The desire for atrophy is the atrophied consistency. Knowledge and its associated pedagogic structures are desired to seem atrophied so they cannot be contested unless by the appropriate interlocutors within the appropriate

territories, and whether those are the laboratory or the courthouse or the battlefield, the organization of the territories' differences matter less than the atrophied consistency of the goals and aims, which is the retention of anthropocentric supremacy. Franco Berardi (2015) defines the flexible atrophy of semiocapitalism in a similar way:

In the sphere of the market, things are not considered according to their usefulness, but only in terms of their exchangeability. Similarly in the sphere of language, words are exchanged and valued according to their performativity, that is, their pragmatic efficacy...Late capitalism is transferring the military logic of mobilization into the sphere of the economy: work, production and exchange are all a battlefield whose only rule is competition. (pp. 25–26)

The Order of Mars moves, oh yes, but the non-object, non-goal, non-aim is simply to rise, to attain the top of the hierarchy—success is defeat, victory is measured by that which is beneath. And in the abstraction of the signifieds that semiocapitalism performs, the excess of emptiness that accumulates and crowns the victors with meaningless numbers and ownerships and designations of control are far from material realities, but of course their affects lead to the posthuman truths of enfleshed suffering and death that are signifieds alone with no capacity for signifiers—the unspeakable but devastatingly real.

Knowledge of things in late capitalism collapses value (already denying anything their shivering, intangible haecceity) and exchangeability (where everything has an “owner,” a “master”). In the battlefield for late capitalism, anthropocentrism is found in every realm, even those who retain a capacity for Venutian compassion. Activism, ecological work, art, and pedagogy are epistemic performative words. Their separation from science, justice, politics, and the military has always been known to be arbitrary (expect perhaps in the current academic crisis of defunding the Humanities). What matters is not so much the episteme itself as the techniques deployed in the sharing of ideas as an act of gracious compassionate curiosity. Much contemporary activism, art, and any field-work affiliated with academia is defined by funding, project prioritization and competition where fellow workers are enemies and no longer collectives. Sustainability is an idiot myth with human interest at its core; it is no less a military tactic than war. Freakonomics, xenofeminism, even identity politics within social justice all re-centralize the ego of the self,

although that self looks slightly different to the straight white able-bodied male. Re-enlightenment that there are different kinds of humans, and different ways of doing things that would extend humans, is still anthropocentric supremacy. It bears saying over and over the words of Carol J. Adams (2014), that the logic of de-hierarchical ethics, what she terms the “humans first” argument, is just more supremacy:

Is it possible that speciesism subsumes racism and genocide in the same way that the word animal includes humans? Is there not much to learn from the way normalized violence disowns compassion? When the first response to animal advocacy is, ‘How can we care about animals when humans are suffering?’, we encounter an argument that is self-enclosing: it re-erects the species barrier and places a boundary on compassion while enforcing a conservative economy of compassion; it splits caring at the human–animal border, presuming that there is not enough to go around. Ironically, it plays into the construction of the world that enables genocide by perpetuating the idea that what happens to human animals is unrelated to what happens to nonhuman animals. It also fosters a fallacy: that caring actually works this way. Many of the arguments that separate caring into deserving/undeserving or now/later or first those like us/then those unlike us constitute a politics of the dismissive. Being dismissive is inattention with an alibi. It asserts that ‘this does not require my attention’ or ‘this offends my sensibility’ (that is, ‘We are so different from animals, how can you introduce them into the discussion?’). Genocide, itself, benefits from the politics of the dismissive. The difficulty that we face when trying to awaken our culture to care about the suffering of a group that is not acknowledged as having a suffering that matters is the same one that a meditation such as this faces: ‘How do we make those whose suffering does not matter, matter?’ (p. 16)

Do we yet know what a Venutian version of justice, science and politics could look like? What matters is a technique driven by love of difference and alterity and a disenchantment with any Martian technique under the anthropocentric rhetoric of logic and rationality. A Venutian desire must underpin technique. “From kindergarten onward, the formal school aims to refine the desires of the student away from material life and toward the transcendent, to turn away from both the animal and child’s mutable relation with the earth and to overcome it by selecting only those desires that desire transcendence and mastery over both self and world” (Wallin, 2014, p. 147). Ahuman pedagogy needs to turn away from anthropocentrism itself.

OCCULTISM AS AHUMAN

Occult knowledge refers to knowledge which is “hidden.” There are a number of ways in which knowledge can be navigated as hidden, all of which deny the logic of revelation which insinuates there is something to know. Foucault opposes the Aristotelian model against the Nietzschean. Crucially for a material ethics of ahuman pedagogy, Aristotelian knowledge posits “the incompatibility between the truth of pleasure and the error of sensation” (Foucault, 1997, p. 13) where sensation is emphatically corporeal and pre-signifying, thus useless, while knowledge and truth are pleasurable because pleasure is inherent in (claims to) truth. This default between truth and knowledge as pleasurable, or at a stretch “good,” opposes the “brute”-ness of flesh, which, in its sensorious material existence is, unto itself, mechanical at best (according to Aristotle and Descartes) and unreliable thus ignoble at its most anthropocentric understanding. Foucault states Nietzsche attaches knowledge with a will to appropriation, an effect of hatred and a falsification between the true and the untrue. From this, Foucault gleans that knowledge is in service of political justifications of violence and obedience, which expiated “sacrifice” and which was not truth but a tool (Foucault, 1997, p. 14). The outdated claim that humans only use tools is now navigated by anthropocentric ethology of tool use in nonhuman species (species itself being a human-made geostrata of subjectification and hierarchy). Knowledge remains in its stereotypical form a phenomenon of benign truth awaiting human revelation. To confess motive, use of the tool, would be to introduce elements of anthropocentrism exorcised from claims to knowledge—that it is neither simply objective nor subjective; that hypotheses begin with will; that logos is a form of desire comparable to emotion, but with a different relationship with power; that the default neutrality of logos is white masculinity; that the grammar of truth is arbitrary; that knowledge follows a strict set of established rules which produce (not reveal) truths that are universal and eternal. These are already “occult” aspects of the will to truth/knowledge in that they are unspoken.

Occult knowledge is not a confessional state of revelation. It makes no claims to universality, absolute truth, exhausted experimentation, neutrality. In this sense if the will (*pouvoir*) to knowledge is anthropocentric, the will (*puissance*) to thought (which always remains the unthinkable thought, before and beyond quickening to atrophy) is

ahuman: “[t]hought constitutes a simple ‘possibility’ of thinking without yet defining a thinker ‘capable’ of it and able to say ‘I’” (Deleuze & Guattari 1994, pp. 54–55). Occult knowledge, which seeks revelation or in a more contemporary sense, results-based occultism, belongs to the former, and strictly speaking is not that different to anthropocentric knowledge manifest in an esoteric form. Occultism which maps no single mode of navigation, which pre- and post-humans the subject, the becoming-ahuman of knowledge, denies and defies the unspoken motives of knowledge as antagonistic to becomings themselves. Pedagogically, the occult teacher is always the thinker without knowledge, becoming the friend: “[t]he friend who appears in philosophy no longer stands for an extrinsic persona, an example or empirical circumstance, but rather for a presence that is intrinsic to thought, a condition of possibility of thought itself, a living category, a transcendental lived reality” (Deleuze & Guattari, 1994, p. 3). The subject belongs to the signifying regimes of knowledge, the enunciator of truth, those egos attached to power as the excess signifier, meaningful in accruement and meaningless in material specificity of expressive and affected others of all kinds. De- and a-subjectification necessary to occult thought makes any dialectic, even that of equals, impossible. The entire world exists in the relation between all the nodal points of the rhizomatic cosmological set, in flux, and the between is the space of matter, the material space of expression and affects, the space of ethics and ecosophy.

Immersion within the spaces between is a defining element of occultism. Occultism is incommensurable with Cartesian dualism. In its many genealogies—imagined and traced to Earth magic, paganism, natural medicine in monotheistic ages, willful womanhood in the Reformation and inquisition trials, to contemporary turns to witchcraft both pre-Judeo-Christian and Satanic—there are frequent developments of relationships with an Earth where human presence is not human supremacy. Sadly, perhaps perversely, pseudo-occulture has been embraced in a nationalistic way by various neo-fascist groups whose claims to imagined genesis through their relationship with their origin soil, perform a hyper-anthropocentric version of Earth occupation where every grain of the ground is invested in a deeply anthropocentric subjectivity of (usually) whiteness, masculinity, heteronormativity, and able-bodied humanness. It cannot be emphasized enough that these groups who claim occulture inspiration do not belong to worlds of secret thought, because theirs is a mythologized, and crucially weaponized, form of knowledge

entirely driven by the Order of Mars. Occult thought today embraces teratology and aberration long despised of the human perceived at the zenith of earth life—while subjectivity is no longer the defining validation of interpellation, a tactical embrace of femininity, queer, anti-colonialist and anti-racist, disability and nonhuman animality. These tactics show the various escape routes of minoritarianism as the road to ecosophical equilibrium, refusing aspiration and equivalence to the majoritarian in order to gain rights, and not necessarily seeing rights of the self as priorities because the self as demarcated from other escape routes distorts the rhizomatic terrain into a singular path. The secret of occultism is that which hierarchy cannot ossify, so there is no one way, no one path (no left or right, black or white, these belong with Descartes), no Earth for one kind of life. Against Rousseau’s social contract, occult thought creates pacts with unlike others, with the denigrated, the diminished (both in knowledge and materially in reality) to create what Deleuze and Guattari (1987) call “unnatural participation” (p. 240), and through which new unthought is constantly born: production without reproduction. This attaches occult thought with a material activism which is anti-speciesist, queer, feminist, anti-racist, and anti-ableist. “Neither homophobia nor speciesism (nor any other ism) is a disembodied idea,” writes patrice jones (2020). Instead, these -isms, jones (2020) writes:

are *practices* (and accompanying rationalizations) that arose at particular times and places for particular purposes. Perhaps the most important purpose, for both of those and for sexism and racism too, is control of reproduction. Thinking about that intersection forces us to face not only our own animality but also our complicity in the ongoing subordination of other species by our own. That raises the question of how to go about animal liberation. Neither we nor the other animals we liberate are abstract entities. Actual liberation is all about bodies – theirs *and* ours – and is therefore all about eros”. (p. 103, added emphasis)

Anthropocentric knowledge precedes and surpasses materiality, with the theistic faith of Aristotle in truth over flesh, reflecting a faith in human perception over untranslatable material experiences such as pain and death and desire and love. When we ask “what is the knowledge of occultism?” the answer is infinite and infinitesimal, it is yet to come, the ethical encounter that awaits. The act of ritual in occult practice is at its most basic an act of de-subjectification, learning to unknow, learning

to unthink pre-established relations in order to encounter sensorially the material affects imposed upon the war the anthropocene wages on the Earth. And then, creatively and artistically learning to think and act differently, with every encounter, with *in* every encounter, as a unique ethical moment: unthinking the human. Occult thought cannot be taught, it can be a ritual shared, or a series of experiments in unthinking suggested, or techniques for queering offered as a gift. Pedagogically, the occult practitioner can cease to parasite off the servant who gives the opportunity of mastery to the teacher and becomes host. What is learned will be between the two, both imparting and absorbing, supplicant to the greater teeming voluminous space between, which affects both bodies materially, but perhaps in defiance of signification or conversion to language, for this reason destined or fated to always remain secret. Reproduction begins with knowing in advance, demanding repetition as sameness, vindicating repetition as truth, manipulating reproduction as a tool of power. For epistemes this comes from knowledge as the only form of understanding and navigating the world. For women this has long been a technique of enslavement to heteronormative domestic servitude and defense of Aristotelian claims to the inferiority and hyper-corporality of women. For non-Whites, queers, the disabled this has led to enslavement, to institutionalized oppression and government-vindicated violence and eugenics. For capitalism reproduction is the *habitus* of consumption, difference every moment with the same goal of synthesizing techniques of self, based on induced neurosis in the West and exploitation everywhere else. For nonhuman animals, consumption of material *someones* converted to somethings, bred for slavery and murder in the name of food, entertainment, conservation.

Occult experiments are experiments in action. The Order of Mars perpetrates reproduction, of one mode of action defeating another. The Order of Venus is love without reproduction, the coming together of absolutely unlike entities to create a hybrid haecceity (hybrids cannot reproduce, in science, in nature, in knowledge). Occult thought is also ethics “in secret.” Earth activism, ecosophical direct action, and animal liberation are all necessary practices whose affects may not and likely most often *cannot* be seen or known. While sanctuaries and direct care are always crucial parts of these activisms, there are equally important large-scale practices such as abolitionist practice and education, boycotts, forced shutdowns, pressure groups, even insipid funding (the aggressive charity of capitalism but effective nonetheless) that cause unknowings of

anthropocentric violence. Unlearning *habitus* discontinues the reproduction of behaviors, which come from the reproductions of knowledge that have led to the atrocious violence perpetrated against nonhumans and the Earth. There is no one different way to do things, so all new thoughts of activism are unthought, unlike each other, experiments in care and queer ethical eros for the unresponsive, unseeable, unavailable nonhuman other, whose material being is nonetheless present, either as we rescue them or suffering elsewhere. The nonhuman animal other dwells in secret. They do not owe us anything, neither their flesh nor their gratitude nor knowledge of who (more often perceived as what) they are. Letting the nonhuman be, in secret, without demand for knowledge of them, as product or species “type,” is grace, ethics belonging to the Order of Venus. Prioritizing mobile imagination in occult rituals allows for this being in secret, contemplating liberation for a being who is being beyond an anthropocentric being.

Imagination and its connection with emotion, falsely long opposed to knowledge and logic respectively, plays a vital role in both gracious activism and occult thought that fosters the *how* in how we dismantle the anthropocentrism that apprehends the world for itself. All of the educators and writers, for example, in Agnes Trzak’s (2019) collected anthology *Teaching Liberation: Essays on Social Justice, Animals, Veganism and Education* temper the horrors of revelation of violence toward nonhuman animals with an emphasis on imagined proximity awareness, imagined new ways of doing, creative and empathic development of collectives of unlike activists, with shared desires to formulate adventures in practices of grace and to open pathways and escape routes from malzoanism (the opposite of abolitionist veganism) for the human and from all humans for the unknowable other. Far from anything being lost or forsaken, joy, relationships between unlike humans and a commitment to not knowing what comes next are foregrounded in this and other emerging texts on empathic forms of pedagogy. Knowledge never arrives. The secret aspect is its very impetus, the yet-to-be-thought, an artistry of grace, an enchanted material ethics of consensual encounters and practices to liberate nonhumans with non-encounters.

WITCH PEDAGOGY

Twenty-first-century occult pedagogy is a little more than just secret thought. It belongs to the worlds of what D. N. Rodowick (1997)

calls the memory of resistance, which opposes the grand narrative of the history of power—opposition as everywhere and an everything else, not a dialectic slave. Rodowick (1997) says of cinema, and I would extend to all artistic practice, of which both activism and occultism are two, and which does not exclude science or other truth claiming epistemes when performed relationally and ethically: “[o]ur relation to the image is neither determined nor dialectic” (p. 290). The figure of witch as monster in contemporary imagination is not entirely extricated from the materiality of murdered women from Ancient Greece through the inquisition in Europe. Indeed, tenets of this figure continue today in the demonization of women, victim blaming, sexual violence, “domestic” violence, the throwing away of the post-menopausal crone, the denunciation of queer women, trans women, women of color, women disabled by phallogentrism and disability aligned with femininity, girly boys and all aberrations along gender paradigms aligned with femininity. The being of a woman and the intensity of the “feminized” or “feminine” coalesce into flesh made vulnerable and demonized at once, object denied subjectivity but denounced when showing agency, extending to nonhuman flesh and “Mother” Earth. Thou shalt not suffer a witch to live. From renewed interest and embrace of Lilith, Ereshkigal, the Magdalene to Mary Wollstonecraft’s alignment of women with Satan in her 1792 reading of *Paradise Lost* and The Women’s International Terrorist Conspiracy from Hell, something occult in the absent citizen of the social contract has allied “her” with both nature and rebel exile. Aristotle, Exodus, Pliny, Aquinas, the “dialectic dudes” who utilize “logic” to cast out witches are legion to rival Satan’s pandemonium (see A. L. Jones and Federici for examples). Witches as wise women affiliates knowledge with a coalescence of flesh, perplexingly phallogenic in its location within the folds of the flesh, setting it apart from the Vitruvian subject and socio-corpus where the head is the seat, the pinnacle, the highly organized hierarchical body, diminished against the reason of subjectification—the head as Brain/Face (through which subjectivity reads/is read), King, Pope, President, Father, God. Witchcraft is wisdom, knowledge as craft, de-hierarchization of mind and body, from the inquisitor denouncement of a pact, of an unlawful collectivity-coven, of the victim of patriarchy made to answer for being a body in the witness box, in the mirror. A coven sees witches in each other: Bodies who do not look like each other but like crones, virgins, queers, monsters, nonhuman animals who become familiars of the Earth, whose lesson is the indefatigable act of learning

as a multiple within herself, and as a singularity within a coven, where thought ebbs and flows, intensifies and detensifies, a liquid quickening of en fleshed thought and cerebral activism all of which come under the rubric art because there are no rules, there are relational ethics within connective ecological multi-aspect encounters, constellations of learning. “Her” takes us beyond the gendered female individual. Witches are secret thinkers in constellations with clandestine connective trajectories. Their becomings are ahuman in seeping and expanding gendered, sexual, racial, species lines and are escape routes from anthropocentrism and fetishistic co-option of gender and species alterity seen in so much posthumanism, but also in ecological activist movements (see, e.g., Gaard, 2020). So too does the ahuman unnatural filiation coven avoid slow hierarchization commonly seen in many occult movements and Orders.

Ahuman occultism is lawless and without order, following a natural order of care and need, chaos and clinamen. The social contract’s designation of nature as essence to be revealed by man has historically been utilized to convert materiality to knowledge-power and to speak to a perceived immutability without anthropocentric motive as to quality and value of something’s or someone’s “nature” in that perception. Our unnatural alliances don’t know the nature of nature exhaustibly; we know that the chaos of nature is elegantly indeterminable. Deleuze and Guattari (1987) classify three kinds of animal: the individuated animal (of which they don’t include the human, but I definitely would); animals with characteristics that designate them (genus, species, also archetype); and the demonic animal who forms packs, alliances, populations, becomings (pp. 240–241). For ahuman pedagogic purposes, the first is animal as subject, the animal who is given relative agency as a someone not something. In return, this animal must supplicate to regimes of training, so exists within an entirely anthropocentric apprehension. The second animal is the other that must be classified in order to be known, but is not able to be tamed, a something other, never a someone. The borderland created here could include the non-majoritarian human, the woman, the colonized, the queer, just as the subject animal occupies a borderline between family member or domestic animal (such as pets). The third is not an animal at all. It is a collective ahuman affect. It is many animals in one and many animals as one. Deleuze and Guattari emphasize there are ways knowledge posits the ability for all three animalities to overlap, intersect, and be understood in various exchanges which shows animalities, and nature, as a matter of our relation with knowledge/Power more than of

reducible flesh type or quality. Philosophy as artistry manifested socially through activism, Deleuze and Guattari call sorcery, which is a clear nod to occulture. Unfortunately, the masculine-dominant persists as traditionally the sorcerer is a male magus, like Deleuze and Guattari, co-opting women, and animals, into his becomings toward imperceptibility. Imperceptibility is materially expressive, affective existence, and impact in secret. For minoritarians, this has always been existence as invisible, invalid, but pedagogically the anthropological difference between a sorcerer and a witch is, according to the high age of anthropology, an important one: “‘witch’ identifies someone alleged to practice socially prohibited forms of magic, while ‘sorcerer’ refers to someone who intentionally takes on the role of magical practitioner, often with the intent to harm” (Moro, 2018, p. 1). Moro claims both are attempts to control the supernatural. In the age of the anthropocene, an ecosophical attempt to create a natural contract to supersede the social contract reimagines supernatural as alliance with the chaotic natural, an embrace of chaos as the natural state of things, irreducible to the Laws of Man. Science is part of this natural state, the question is one of anthropocentric hubris. The workable truth of science belongs as a tactical navigation of nature’s chaos, the “super” natural of nature. If man were above nature, then we would have known in advance what the age of the anthropocene would do to nature, and our apocalyptic visions could have predicted catastrophic events, both incremental and rapturous. The complex chaos of nature is man himself beyond the Laws of Man. It is time for Agamemnon to give way to The Bacchae and man to be the focus of the tearing frenzy of our Maenad revels. So Deleuze and Guattari’s sorcerer is a role majoritarian anthropocentrics have already taken on in some sense, doing harm to the flesh of others from women to animals and environments through taking on roles in power that increases with each new degree taken in the climb to transcendence. Neo-capital and neo-fascist contemporary culture is its own enchantment system. The increased prohibition of Earth activism as forms of eco-terrorism show witch becomings in action, DIY teachings and learnings together. What differentiates the former from the latter is a contestation of visceral materiality—the former using signifying regimes, fantasizing myths of power, success, nation, consumerism to quicken the ego, the latter using occult clandestine becomings to be collective agents as one and many to liberate the expressivity and bodies of enslaved, tortured and murdered nonhuman others. Those “eco-activisms” which

seek to save the Earth for human futurity are not included in this chaos-constellation. Eco-activism that seeks to save for the benefit of humans, whether it be the Earth for human future generation existence, or certain species for future children to see while prioritizing species over individual sentient beings, is anthropocentric sorcery with a different cloak.

THE OCCULT NATURAL CONTRACT

Occult pedagogy expresses relations of teaching and learning that deal in fact—facts of materially diminished affected bodies of others, the truth of the corpse on the plate, the agony of the enslaved, the refusal to hear the *differend*. Yet it repudiates any relationship with systems, cata-tonic dialectics, and established orders. It finally “posts” the postmodern by including truthful facts while disavowing universalizing statements of truthful facts. It bears witness to enfleshed evidence, reversing the impetus to prioritize motive in announcing anthropocentric principles of what can and cannot be, what did and did not happen, what is perceived as life and what is object. We remain committed to acknowledging and bearing witness to suffering and anthropocentric war against alterity, we enter scholarly arrangements driven by artistry in all epistemes, we refuse one truth when it is converted into anthropocentric language. We listen and hear differently. We teach and learn differently. As Seres (2000) writes:

[t]he verb to educate means indeed to lead elsewhere, out of doors, outside of this world; in fact to cast off...who will give birth to whom and for what future? Casting off or parturition, production or childbirth, life and thought reconciled, conception in both cases: would great Pan, son of Hermes, return in this mortal danger? These symbiotic bonds, so reciprocal that we cannot decide in what direction birth goes, define the natural contract. (pp. 114, 123)

We are outside anthropocentrism while remaining in this world, from which we have become estranged by the seduction of power. Truths and facts drive activism and other forms of crucial pedagogy, natural truths, not social contracts or anthropocentric being. Abjected from Earth-for-Men, ejected from being-for-oneself, and the rest is resource; we emphasize unknowing coupled with active care, our production, our childbirth, gives force to love and flourishing of this Earth and each singularity of life. The necessity for reproducing human life is designated with

the social contract, a new generation of our army belongs to Mars, and so along with understanding truth and pedagogy differently, the value of birth—of ideas, of tactics, of activism, of care, not of more humans—as creativity toward the Earth’s billions of othered others is where ethical care belongs (which is also why antinatalism is part of ahuman ethics). A simple commitment to care is voluminously unknown enough; there is literally *so much to do* and doing within unknowing is commitment to learning while acting, teaching while learning, listening without language, seeing without recognizing. Our sensoria is the foundation of ethics, the opening by which becomings catalyze. Neither human nor nonhuman, occult pedagogy requires bringing together belief and hope, formerly belonging to religion, but now to nature, with fact and affect, the force of activism in ceasing war and anthropocentric occupation and parasitism, and bringing love, symbiosis, hosting. Irigaray (2004) writes:

[t]he Intervention of a master will be all the more decisive in that it does not remain simply hierarchical, parental, but calls for a mutual exchange. Even if the latter is only announced, will happen only later, a possibility or a secret obligation is revealed. We enter there into a proper human assistance on our way. This favour does not often arrive, and an entire life may have no experience of it. It belongs perhaps to a barely foreseen future of our human becoming. It is the term which gives us, or will give us, of being truly born into our humanity. And to discover there what can be the amorous exchange, the embrace not only of bodies but also of hearts, of thoughts, of all ourselves, a total embracing at some crossroads of our way. A difficult favour to receive...To know in this way, the most intimate proximity and to work it out from a distance, in difference, in autonomous space and time but allowing a becoming of the encounter, seems the task to which we are called as human beings...Towards this accomplishment we must force ourselves along the way with the aid or friendship of animals, of angels, and of gods who agree to accompany us in a course towards the accomplishment of our humanity. (p. 201)

For Irigaray, ethical humanity has nothing to do with anthropocentrism or with what she calls the violating power of man. And, like Serres, she advocates the imagination of worlds, which include nonhumans and abstract god figurations to assist our ventures into relations driven by love. The being of nonhuman animals is real, material, and a fact. Our knowledge of the other is only ever a phantasmatic mastery; while abstraction places

the animal other with mythical pantheistic figurations, these are encountered in relations of journeying, much like the true/untrue belief system of occultism that uses gods as ritual igniters of adventuring through other modes of thought and unraveling knowledge and self. We can utilize the gods and angels as passages through, and of the nonhuman animal we must imagine what is needed from us, what care is required, the symbiosis manifests both self and other in a contract of need and of unbeing toward the unknowable other. Because we cannot know the nonhuman other, we must imagine with best faith what is needed, unraveling the self in order to listen to this secret obligation. Earth activism has to happen in secret with reference to knowledge, so ahuman activism belongs with the occult as a way of thinking/unknowing, available as much to science as to art and philosophy. How do we receive the obligation needed from the other we can never know? How do we impart that need to others? These questions of rethinking the space between, within, and among ourselves are those with which ahuman pedagogy is concerned. The answers are multiple, mobile, obscure, and yet the affects caring, impactfully gracious and real. They may not be perceptible or convertible to “findings” in a traditional manner. The deep mystery of how to care for this world at this time is not awaiting a satisfactory solution. Opportunity is also here in this world at this time. We simply have to alter our relationship with human exceptionalism, human language, human supremacy, ourselves, and our relations with the Earth, and simultaneously the infinity of occult thought will cast us off from anthropocentrism and open the multiple worlds within this one, no longer our one but the one of the so many ... many.

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The Literacy Situation: Education and the Dispersal of Politics

Nathan Snaza

THE SITUATION

Most of the time when people think of literacy, they imagine a disembodied reader and a text, understood to be a collection of signifiers. This image of literacy seamlessly interfaces with what I will call statist literacy: Literacy understood as a discrete set of skills that can be acquired and assessed, which in turn allows assessment of literacy to become a driver of state biopolitical control. Literacy here, assumed to be a good or useful or necessary skill, functions as a marker of proper citizenship and even humanity. The reigning policies favored by neoliberalism are voracious in their need for data about literacy, and this appetite drives the explosion of investment in standardized testing and its considerable material components. This data-ification of literacy's pervasiveness is, of course, subject to critique, but one of the tasks of this chapter is to sketch how those critiques often presume the same image of literacy.

N. Snaza (✉)

English Department, University of Richmond, Richmond, VA, USA
e-mail: nsnaza@richmond.edu

The linguistic and literary theories of the last century did an enormous amount to help us account for the complexity of encounters between minds and texts, but they fall quite short of accounting for what I call the literacy situation (Snaza 2019). A text is always quite material. Let's say it's a book, made from particular paper stocks, printed with particular inks, held together with particular glues. Depending on its conditions of production, transportation, and housing (in a home, a library, a bookstore, etc.), the book becomes entangled with moisture, bacteria, fungi, cigarette smoke, and spilled coffee. Specific books become attached to memories of humans, but also to a wider, more-than-human memory of temporal moments. Books then are highly individuated, and when one reads it's never "the book" but *a book*, a specific material object that comes into being and circulates within a vast ecology of powers, entities, affects, and agencies that animates and is animated by the human, but always *with* a dizzying, almost ungraspable number of nonhumans.

The reader is never "the reader," they are *a* reader. As reader response theory has taught us, a reader has a gender, a sex, a race, a class, and a sexuality. They have particular habits of attention and perception, particular desires, particular histories. Elizabeth Grosz argues that we also "need to understand the body, not as an organism or entity in itself, but as a system, or series of open-ended systems, functioning within other huge systems it cannot control, through which it can acquire its abilities and capacities" (2004, p. 3). A reader "is" an assemblage of systems and habits, a way of tending through the world oriented in particular ways rather than others. And this means that the macro-level concerns about how political systems (like colonialism, anti-Blackness, heteropatriarchy) can be followed into the micro-level where particles shift and collide in their mattering. The political cannot be delinked from the patternings of matter, from the tendencies of worlds to hold (sometimes enragingly) enduring shape. The embodied reader has specific histories with literacy and literacy education (i.e., with the disciplines, punishments, and rewards that surround reading). The material milieu of these histories is where the intra-human politics of colonialism, race, gender, sexuality, ability, and class determine the situations in which readers read: sitting on chairs, lying in the grass, standing in aisles, riding in busses, seated in classrooms, in hospital rooms, in prison cells, hiding from plantation overseers or "the apparatus of roundup" (Wilderson 2010). There is a certain temperature, a certain humidity, specific sources of light. There is ambient sound, punctuated more or less frequently by noise, some of it identifiable (a bell

sounding between periods, a police siren, the tea kettle, a child's cry). Some readers live surrounded by books (perhaps at home and in spaces that invite their interest like bookstores and libraries) while others must steal away, hiding their literacies to avoid violence. Some come to distrust or fear books, avoiding reading as much as possible, and some have no access to books at all (but that doesn't mean they aren't engaged in all kinds of literacies!). Put simply, we have to give up on the pretense that statist literacy is simply a "good" thing when its functioning is inseparable from ecological extraction, social stratification, dehumanizing violence, and colonialist force.

A reader and a text share a mutually entangled emergence in a field of agencies and entities, most of whom aren't human, but whose *relationality* is marked by the complex (intra-human projects) of colonialism/capitalism/slavery/liberal politics and nation-states/extractivism. These are part of the *material* situation from which entities emerge and in which they (unevenly) persist. Put differently, colonialism is less a structure *or* an event than it is *situational*: It is part of the sociogenic sym-*poiesis* of the world. And this sym-*poiesis* inescapably involves literacies. As Eduardo Kohn argues in his provocation to decolonize language: "Life is constitutively semiotic" (2013, p. 9). This situational, semiotic *potentiality* is captured by the state and diagrammatically linked to assemblages of de/humanization.

Literacy scholars often speak of "literacy events," where readers encounter texts. These scholars have gone quite far in extending "literacy" beyond a hyper restricted sense of just a reader and a text to include a variety of social forces, relations, and contexts, but they tend to repeat a kind of reflex reduction of their attention to merely the human participants. That is, meaning is understood to be a human affair: Human readers generate it when they encounter texts made by other humans. In this, the statist capture of literacy and the liberal critique of the state don't significantly diverge, so one of my aims is to move from the liberal critique which is still statist or statal toward a more decolonial, anti-state, ahuman—or dehumanist (Singh 2017)—conceptualization of literacy. My concept of the literacy situation helps me think about how literacy events emerge from a sprawling, diffuse (spatially and temporally) scene of encounter and collision among entities of many, many kinds, and all of these have some *direct* participation in the colonial (and decolonial) politics of human literacy, in part because the "human" is an effect of a more diffuse ecology of nonhuman literacies.

In this chapter, I want to examine the narrow, state-sanctioned conception of literacy while trying to feel out its ties to the situation, where we might find the resources to summon ahuman pedagogies because “awareness of the inability of anthropocentrism to open to the other is an implicit part of becoming-ahuman” (MacCormack 2020, p. 17). This means attending to how supposedly neutral measures of literacy exist only to facilitate the movement of bodies at checkpoints in a highly stratified social formation, and how this version of literacy is a material part of (settler) colonialism and state racisms. It also means feeling out how nonhuman participation in literacy matters, precisely because in becoming more sensitive to that participation, we can begin *to feel differently*, and this feeling can differentially orient us to ourselves and all the others with whom we are entangled. I call this affective attunement “politics,” and I will call for a politics of *care* for the literacies that make our lives *possible*, while learning to give up caring about the hyper-restricted concept of literacy captured by the state.

DISTRIBUTION AND ORIENTATION

Schools are, first and foremost, apparatuses of accumulation and distribution of energies, resources, land, debt, attention, grant dollars, grades, test scores, bodies, habits, and life chances. They have long self-proclaimed their mission in other terms: character or citizen development, intellectual advancement, socialization. This double function of schools—proclaiming their necessity for the good of humanity, while ruthlessly extracting, appropriating, hoarding resources, and generating specific kinds of information (test scores, grades, diplomas)—allows a system of staggering inequalities and precious few channels for intra-human class mobility (to use one vector of analysis) to *feel* meritocratic.

Such feelings are part of what Sara Ahmed would call the politics of orientation. In her account, “Colonialism makes the world ‘white,’ which is of course a world ‘ready’ for certain kinds of body, as a world that puts certain objects within their reach. Bodies remember such histories, even when we forget them. Such histories, we might say, surface on the body, or even shape how bodies surface” (2006, p. 111). The world is populated by boundaries, and in those spaces some objects, opportunities, and oppressions are closer to some bodies than others. In the highly stratified world of political, psychic, and physical spaces, bodies *feel* differently at home, at ease, where they “belong.” These boundaries are highly

material—Ahmed calls them brick walls (2017)—but they need not be physically architectural. Emotions, or affects, generate borders: “Emotions shape the very surfaces of bodies, which take shape through the repetition of actions over time, as well as through orientations toward and away from others” (2015, p. 4). This shaping informs what Ahmed argues elsewhere (2006) about the politics of orientation: “certain objects [and spaces] are available to us because of lines that we have already taken: Our ‘life courses’ follow a certain sequence, which is also a matter of following a direction or of ‘being directed’ in a certain way” (p. 21). Subjects are oriented toward and away from different spaces, opportunities, objects, and relations. And subjects accumulate feelings—or, more precisely, feelings accumulate as subjects, in tandem with the shaping of bodies as oriented and orienting. What seems stable—a space, a body, an identity, and a global political forces—turns out to be accumulative. It’s a question of how wolds stick together.

Schools modulate affects as they stick to bodies as they are oriented in a complex, highly stratified system of distribution and accumulation. This specific configuration generates *feelings* about what a student, or a specific school, can do, and it generates feelings about what investments are worthy or not, and these feelings shape bodies as they are orientated. Because schools function as arms of the settler state (Grande 2018, p. 47), being in a state school means being directly, materially implicated in settler colonialism, racialization of the population, and extractive global economies. This material implication is such that no critique “consciously” produced by students and teachers in verbal discussion is able to alter the material conditions of colonialism. What is required isn’t *critique* of the school within the school, but the dismantling, however haphazard, of the settler school. We need decolonial, abolitionist education.

THE SURROUND

To feel out these colonialist politics, I want to begin with a liberal critique of the hyper-narrow version of literacy codified in standardized tests as outlined in *World Literacy: How Countries Rank and Why It Matters* by John W. Miller and Michael C. McKenna. Like many contemporary literacy scholars, they want to “expand” literacy from a competency measured by tests toward a set of social practices. For them it is crucial to see literacy as “multidimensional”—other scholars might say “multi-modal”—but it is also something one “attains” (p. 13). Indeed, they

claim, “the attainment of widespread literacy is both recent and fragile” (p. 1). Defining literacy as something one can attain—and attaining it is always considered a good thing—requires, as they put it, a “line in the sand” to keep literacy from coming to mean any communication whatsoever (recall that for me, that is precisely the definition of literacy I want to take up in my concept of the literacy situation). For them “the individual [must] see written language” (p. 18). In short, they use the more-or-less commonsense definition of print literacy, largely because, as they say over and over, it is accessible through “data” (p. 14). This is as narrow a definition as they can propose in order to still claim that the idea of literacy as captured by standardized testing is restricted.

They offer an analogy on the first page of their aforementioned book: “Literacy’s role in society is similar to that of drinking water. It is not an end in itself, but enables individuals to achieve ends that matter to them. Like water, when literacy is widely available, it becomes invisible. We use it unconsciously to pursue a better life. And like water, we take literacy for granted, as a given, and the result is complacency and a loss of perspective” (p. 1). I think we have to ask some questions about this first-person plural here—what about the literally billions of people whose access to clean water is in question because of colonialist extraction, pollution, or a redistribution of water toward uses by wealthy communities? Differently phrased, why should those who are precisely the most privileged get to *decide* what literacy “is” and why it matters? To shift the discussion, I want to recalibrate their analogy.

The chemical and energetic processes that make up *all life* are materially impossible without water. Indeed, they have to ignore the entirety of ecological thought and Indigenous politics to frame access to water as narrowly as they do. It is not merely a means to “better life” (as any supposedly distinct organism might define that), it is the condition of possibility for *any* life (human or nonhuman). Indeed, it is a crucial part the *situation* of life, part of an organism’s surround. One can even argue that the care for water, and other materially indispensable participants in our lively becoming, is *precisely* what is at stake in something we might call “the good life” or, more pointedly, “good living” (Gómez-Barris 2017, pp. 23–25). Discussing the Latin American emphasis on “el buen vivir” in relation to politics of disrupting what she calls “the extractive view,” Macarena Gomez-Barris notes that “the idea of *el buen vivir*, translated as good living, decenters the importance of ‘the human’ by focusing instead upon how the natural world possess its own sets of

rights, logics, and capacities that cannot be solely apprehended, managed, or narrated through human language or scientific technique” (p. 23). The bifurcated translation as either the good life or good living signals a struggle between Indigenous, Afro-centered “cosmo-visions” and state modes of governmentality (pp. 24–25). While Miller and McKenna’s use of a “good life” here comes close to the statist version that Gomez-Barris critiques—a version in which “the comforts of modern capitalist development fulfills one’s individual material expansion” (p. 24)—I’d like to re-think the relation between literacies and *el buen vivir* by insisting on good living as a mode of more-than-human flourishing that requires an attentive, care-full relation to literal water (we might think here too of Idle No More, Standing Rock, and a long history of Indigenous struggles to protect water), and to a much wider range of literacies than Miller and McKenna allow. The question then becomes how we feel, attend to, and care for the surround.

Michelle Murphy’s *The Economization of Life* suggests that “the economy” as a macroeconomic, computational object has come to *feel like* the surround of life. Murphy is interested in how early twentieth-century economists used data and computation to invent the concept of an “economy” as a relatively bounded entity (2017, p. 17). Where Foucault was interested in how politics became a project of investing in and managing the health of a population (which often involved the production of racist necropolitics as immune defenses to shore up this “health”), Murphy notes that by the mid-twentieth century the primary aim of nation-states had become to tend to the health of their economies (p. 7). “The economization of life” “names the practices that differentially value and govern life in terms of their ability to foster the macroeconomy of the nation-state, such as life’s ability to contribute to the gross domestic product (GDP) of the nation” (p. 6).

This is biopolitics plugged into the disciplinary capture of the world through data: “the tabulation of the GDP requires a large infrastructure of data collection and sampling to be in place, a state apparatus with many tentacles drawing data into its maw” (p. 23). This data allows state/corporate entities to assess a world in flux and then invest in (or divest from) particular activities, projects, sectors, and actors in order to ensure the most robust, healthy economy, which requires the management of the health of the population. Murphy’s book is fascinating in an array of ways, but what I want to focus on here is how this new “surround” of life (economy as container) enables a shift from an older

disciplinary colonial politics that foregrounded concepts like “race” and “civilization” (understood as a graded scale, as in “the civilizing process” Norbert Elias studied) to one that pursues the same ends but without recourse to the same now-obviously racist vocabulary. She writes, “The economization of life was performed through social science practices that continued the project of racializing life—that is, dividing life into categories of more or less worthy of living, reproducing, and being human—and reinscribed race as the problem of ‘population’ hinged to the fostering of the economy” (p. 6).

Taking up the politics of US (colonialist) birth control policies and the kinds of “microfinance” that structure campaigns like “Invest in a Girl,” Murphy articulates the following Malthusian imperative: “*some children must be invested in so that future others might not be born, so that rates of return increase, so that future adults are worth more, so others live more prosperously*” (p. 114). In a formulation that clearly includes the work of schools in this project, Murphy notes that “the problem of population, as a figure of aggregate life, was replete with methods for governing black, brown, poor, and female bodies that recast racial difference in terms of economic futures. Economic futures now depended on designating overpopulation as a kind of surplus life that was better not born. Race did not have to be named in order to enact racist practices” (p. 12). In Ahmed’s terms, subjects—now more data than transcorporeal entities—are marked for differential orientations through circuits of capitalist coloniality. This happens through specific kinds of quantitative abstraction, whereby algorithms sort through values that have little or no “obvious” tie to empirical indices of colonial subjectivity while ruthlessly pursuing colonialist aims. As Katherine McKittrick puts it, “premature death is an algorithmic variable” and “black life is outside algorithmic logics altogether” (2021, p. 106).

One of the vectors of the racializing project was about dividing those considered human from those “constitutive outsides” (Butler 1993) of “not-quite humans, and nonhumans” (Weheliye 2014, p. 3). In Sylvia Wynter’s complex genealogy of our present moment (1984, 2001, 2003; Wynter and McKittrick 2015), an imperialist worldview structured the emergence of the liberal subject in relation to nation-states, capitalist economies, secular and scientific knowledge production, and the forceable colonization of much of the world by five Western European countries. In the wake of this matrix of relations that we can synecdochally index with reference to the event of “1492” (1995), her claim is that “the

struggle of our new millennium will be one between the ongoing imperative of securing the well-being of our present ethnoclass (i.e., Western bourgeois) conception of the human, Man, which overrepresents itself as if it were the human itself, and that of securing the well-being, and therefore the full cognitive and behavioral autonomy of the human species itself/ourselves” (2003, p. 260). The human is less an entity for Wynter than a process, a *genre*, a verb, and as the human processually endures it accumulates affects, orientations, habits, and skills (such as statist literacy). There are always multiple ways of performing the human, but in modernity, the colonialist project of “overrepresenting” the human as a field of potentiality is processually enacted, as (or in relation to) “Man”: a specific version of the human in relation to whiteness, heterosexism, able-bodied privilege, and, I argue, literacy understood in its highly restricted statist mode.

Conceptualizing literacy as a narrowly circumscribed field of *human* practices that can be “attained” works entirely within the colonialist project of humanizing assemblages that generate the fully human, *literate* person only through the simultaneous generation of its inhuman, less-than-human, *illiterate* constitutive outside. In a slightly different terminology, what I want to argue is that this statist project of restrictive literacy assessment as an index of the humanity (or not) of people such that states and corporations can properly invest, or divest, toward fostering the health of the economy only works through what Deleuze and Guattari (2002) would call the “capture” of literacy *as constitutive part of* the becoming of the world.

CONTROL, TERRITORY, AND IDENTITY

In response to the narrowness of GDP as an indicator of the health of a country and its economy, the United Nations, under the leadership of postcolonial economists, created the Human Development Index. As Murphy notes, this wider, more-humane measure, “demands data on literacy, years of schooling, and vital statistics” (p. 29). In line with the Universal Declaration of Human Rights that guarantees the right of “education for a full human personality,” the HDI sees the human as developmental and teleological: Some individuals *and states* are “more human” than others, and schooling and literacy figure importantly in this calculation.

It is in this global context that we should interpret the No Child Left Behind act in the USA and its subsequent ramping up in *Race to the Top* (and note the spatial logic of both law's titles). The first requirement of NCLB is ubiquitous testing to generate the necessary data for intervention and management. Every student is tested and schools have to report individual scores (which affect student passage across grade levels toward graduation) but also school-wide aggregates, that are subsequently disaggregated precisely by population (race, class, gender). Schools are given yearly targets for improvement (Adequate Yearly Progress numbers). Successful performance (we might say, evidence of being a healthy school) earns the school the right to continued existence and access to federal grants. Poor performance, in the counterintuitive logic of our austerity moment, often results in financial and governance punishment: Grants are lost, funding is decreased, control over curriculum and pedagogy is eroded.

In this context, literacy tests—the federal law mandates both reading and writing tests—are exceptionally narrow, “the acquisition of skills for decoding and encoding written symbols” (Carris 2011, p. 3). This system reduces education to an extremely narrow and decontextualized set of skills instead of a social or political process, and if you go by its own stated goals of improving performance as measured by standardized tests, NCLB has not succeeded (Saltman 2019). But perhaps that isn't really the point. Analyzing how the economization of life was experimentally optimized in Bangladesh in the 1970s, Murphy underscores that “even if nothing was improved, the larger surround was still miraculated as a firmament with yet untapped potential. In this way, experimentality could function as a form of subsumption, that is, of surrounding life with the forms and phantasies of economization, as well as the instruments and infrastructures of expectation” (p. 81). Put differently, the real goal of this experimental management in Bangladesh wasn't really the improvement of any particular lives or conditions so much as the implementation and naturalization of the entire demographic, sociological, economic surround of data-gathering. It was the generation of *new mechanisms of differential humanization through investment in a data infrastructure*.

Picking up on Deleuze's famous short essay, “Postscript on Control Societies,” Patricia Clough writes that “control is a biopolitics that works at the molecular level of bodies, at the informational substrate of matter” (2007, p. 19). That is, what power produces above all today is not

the discrete, bounded “human” of Enlightenment rationality so much as a composited, computational singularity whose distribution in and movement throughout unevenly funded sites of education, labor, incarceration, and consumption is modulated by thresholds where data packets are monitored. Clough writes, “Institutions like the school, the labor union, the hospital, and the prison function as switch points for circulating bodies, along with information and capital, through channels, not with the aim of arrival, but with the aim of keeping the flows moving at different speeds” (p. 25). This is not a human disciplined into asymptotic mimesis of Man understood as the model of full human development, but rather an assemblage—the dividual—whose humanity or distancing from humanity is calculated, its future more or less investible based on an array of data (including an archive of test scores).

Computers, electronic scanners, printers, surveillance cameras, metal detectors, and other technologies are part of this surround as the material infrastructure. The testing apparatus itself and the federally-mandated curriculum foisted upon schools that are “falling behind” generates billions of dollars for corporations. And it requires the extraction of rare minerals in war zones, untold amounts of water (water often not accessible to people who need to drink it), and involves massively polluting processing. Noting that “this most common machine [the computer] is an ecological disaster, requiring tons of soil and water and an immense amount of human labor for its production,” Silvia Federici argues that “Machines... require a material and cultural infrastructure that affects not only our natural commons—lands, woods, waters, mountains, seas, rivers, and coastlines—but also our psyche and social relations, molding subjectivities, creating new needs and habits, and producing dependencies that also place a mortgage on the future” (2019, p. 161). This surveillance infrastructure of data-gathering is part of an ecology of technologies, minerals, climates, labor practices, chemical events, and ecosystemic sympoeisis that stretches far beyond any intra-human concerns. It directly concerns questions of land, territorialization, and colonialism on a world-scale.

As educational policy, leadership, teaching, and funding have become more “data-driven,” this material infrastructure of computer technology becomes accepted, relegated to the background through specific orientations that modulate perception and attention. And again we shouldn’t look to assess this in terms of its efficiency for achieving the stated goals—let’s say, a system where no child is left behind—but instead we

need to focus on how specific “pedagogies of feeling” (Murphy 2017) give this new surround an affective necessity, a banality. For it is the system itself—with its materialities and operations directly plugged into the generation of corporate profits and ever-increasing opportunities to expand the collection and analysis of data—that now constitutes the milieu in which “humans” (or, more specifically, Man and its less-than-human constitutive outsides) take shape. The politics of territorialization (Deleuze and Guattari 2002) adheres in a material situation *within which* subjects with identities emerge, endure (however fluctuating), and are oriented.

Thus, a territorial politics of control also redefines what race, gender, nationality, and class *are* (as MacCormack [2020] among others argue, we need to question identity as a concept in our political work while also remaining highly attentive to the violent asymmetries that produce subjects marked by minoritarian identities). While these were once attributes of bodies that require specific literacies to be legible in apparatuses of sorting, they now appear more as computational assemblages, as a “datum” that flickers at moments when an entity moves through a checkpoint, and which in-forms the set of next possible check points. This dispersion, or systematization, of identity markers is not, however, a politically positive thing, since colonialist/state power modulates precisely this field: The situation *within which* identities emerge. Jasbir Puar writes that “the factioning, fractioning, and fractalizing of identity is a prime activity of societies of control, whereby subjects... orient themselves as subjects through their disassociation or disidentification from others disenfranchised in similar ways in favor of consolidation with axes of privilege” (2007, p. 28). Here identity is not a property of a subject, and even less an essence, than it is a set of tagging procedures that accumulate as they accompany a databody as it continuously moves through social, legal, political, and physical space. In Dean Spade’s (2015) language, we might then say that race, class, gender and other marks of minoritization with respect to Man often adhere in the “administrative violence” that defines the reach of the state’s capture of literacy. Thus, la paperson can note that “the ‘settler’ is not an identity; it is the idealized juridical space of exceptional rights granted to normative settler citizens and the idealized exceptionalism by which the settler state exerts its sovereignty” (2017, p. 10). Data-driven policy enables a complex, even algorithmic, sorting of data-clusters that enables, to quote Ruth Wilson Gilmore’s definition of racism, “the state-sanctioned or extralegal production and exploitation of

group-differentiated vulnerability to premature death” (2007, p. 28). It does this, in part, through a continuous modulation of a literacy screwed into projections of investability. This genre of the human, Man, is a speculative project, one arising precisely within the computational imagination of future returns on investments, and its emergence and stability depend upon the simultaneous de-futuring of non-Man modalities of performing the human.

OPTING OUT AND CARING FOR SITUATION

I want to return to Miller and McKenna’s metaphors of drawing a line in the sand and water as it appears ready-to-hand for the most privileged humans on Earth. They turn out to capture precisely the difference between event and situation. Literacy, like water, is the surround of life, and it is not human, although “the human” (any version of it) can only exist and endure when that surround is cared for. The sand drawing, which is to say the construction of a border to delimit a field from its outside, takes place entirely *inside* the field it claims to delimit. It’s only because literacy *is* the sand—a material capacity that pre-exists the capture—that a literacy event can intra-actively emerge to ostensibly exclude from its purview precisely the literacies that make this delimitation possible. This line in the sand is a discursive (or literacy) event, and in one and the same gesture it splits literacy from itself and attempts to distance the human from its nonhuman conditions of possibility. In relation to the conceptual argument offered, then, I want to foreground its material conditions and constraints. The more-than-human literacy situation makes the “event” of narrow capture possible, and there’s always the *virtual*, which is to say material, possibility of maneuver because of, to come back to the metaphor, the sand. At issue, though, isn’t a conscious politics with stated critiques and demands—even though these can be important in so many ways, they end up propping up statist politics of recognition (Coulthard 2014). But people working in queer, feminist, and decolonial currents have invented and amplified pedagogies of errancy, delinquency, failure, and refusal that begin with a kind of affective attunement to the “wild becoming” (Nyong’o 2015) in the situation. Sand and water, to riff one last time, won’t stop moving, being moved, accumulating without any concern for the lines that might be drawn.

Borrowing Massumi’s (2015) language, we might say that states capture literacy through ontopower: an affective priming of perceptual

and attentive systems that make certain (statist) outcomes more likely than others. Because the state is an apparatus of capture, it is always possible for us to tap into and actualize *other* potentials that constitute the situation. The pedagogical question isn't just how we can conceptualize the human differently, or to offer sketches of what an alterhumanism or "posthumanism" would be, so much as to shift the material conditions of relationality *with which* (intra-actively) entities, including humans, emerge. La paperson reminds us that "because school is an assemblage of machines and not a monolithic institution, its machinery is always being subverted toward decolonizing processes" (2017, p. xiii). This isn't a merely *human* question. La paperson writes, "Everywhere land resists and refuses—whales that destroy ships, bees that refuse to work, bombed islands that reconstitute themselves. The land also resists in the form of people; Indigenous peoples' resistance is the land's resistance. Indigenous people continue to subvert legal and capitalist technologies as part of that resistance. And technologies and technological beings resist too" (2017, p. 21). Resistance to the colonialist aspiration to control *everything* is not an impulse that finds its origins in humans understood as somehow shut off from nonhumans and land by a rupture; it comes from what Indigenous thinkers call land as a network of more-than-human relations (Coulthard 2014; Tuck and McKenzie 2015; Singh 2017). Humans participate in resistance by attuning to themselves as land, and to the land's vital becoming. This participation does not usher nonhumans into Man's modes of governance, but rather pulls the human toward more careful and caring attunement to a network of political materiality that exceeds and includes the human.

I want to stress that the politics of becoming adheres in how the situation *feels*. Puar writes, "Specific to a Deleuzian model of control societies is an emphasis on affective resonance, on how surveillance technologies activate, infect, vibrate, distribute, disseminate, disaggregate; in other words, how things feel, how sensations matter as much as if not more than how things appear, look, seem, are visible, or are cognitively known" (2007, p. 129). Feeling here, as in Ahmed's account of the affective politics of orientation (2006, 2015), is the material-semiotic relationality of collisions and encounters that make up the situation. The subject is intra-active with this situational milieu, and the body's systems (open ended as they are) are always perceiving it, even if subjects are de-attuned to it. State ontopower attempts to capture, direct, and control this feeling (thus shaping what it feels like to be human) precisely at the threshold

between situation and event. Feminist, queer, and decolonial politics are about feeling out and amplifying other, errant possibilities.

What we might learn from these errant possibilities is that we have to cultivate an ethics of care for literacies (Puig de la Bellacasa 2017). This care is a commitment to acting in such a way that the violences entailed in our actions don't contribute to Man's statist capture of energies, bodies, and entities. To care for literacies, it seems to me, requires us to *stop caring* about statist literacy. We have to divest our energies and attentions, and reorient them elsewhere. This requires us to let ourselves be affectively pulled by the situation into errancy, delinquency, refusal. Turning our back on the state enables us, as la paperson suggests, to fabulate alternative territorialities, spaces of decolonial love (Coulthard 2014; paperson 2017; Sandoval 2000). This involves disidentifications with Man and with schooling as a settler state project (Butler 1993). We have to let ourselves come to be "in but not of" the schools in which we find ourselves (Harney and Moten 2013). Let's steal their resources for our own queer and decolonial projects as we look to abolish the world oriented around Man.

One practical way to think about this is found in the Opt Out movement, a growling, and highly dispersed, network of folks who are not participating in standardized, NCLB-mandated testing. Mostly it's parents and students driving it, but many teachers and even administrators are supportive (even if they can't say so for fear of being fired). The goal is to get to a critical mass of students opting out that would throw the system into a far-from-equilibrium state, potentially jamming the data-infrastructure. These efforts, in and around P-12 (settler) schools, might be constellated with Zachary Kaiser's *CitationBomb* project that seeks to overwhelm—and thus render useless—Google Scholar metrics and other metrics that increasingly drive faculty hiring and promotion at the university level.

Amplifying the impulse driving Kaiser's project, Eileen Joy has written a manifesto which argues: "We need more effective resistance in the Humanities to the idea that 'everything is data.' What we need now is less quantification, and more extravagant waste of thought" (2018, p. 30). In a similar vein, Katherine Behar has argued that Big Data-driven control logics demand that we invent and foster "an *inhuman* politics of imperceptibility," one that adheres in data abstraction, or "vagueness" (2016, p. 32). Opt Out and Joy and Behar's provocations sketch two poles for a politics of "illegibility" (Behar, p. 36): refusing to produce data

the control state requires and overwhelming those control logics with a deluge of vague or “bad” data.

If the control infrastructure has a “maw,” as Murphy put it, what it consumes is *us*, and we can starve it or force feed it to the point of breakdown. Opt Out in the USA is also an unlikely site where leftish folks and rightish folks find a common object of critique (the “Common Core” curriculum was another). Their reasons for objecting, and the futures they imagine without those tests are crucially different, even antagonistic. While some see this as a major problem, I’m inclined here to recall the Zapatista anthem of “One No, and Many Yesses” (Federici 2019). I think that one of the most dangerous and destructive things about Man and its humanizing assemblages has been its drive to master everything (Singh 2017). Instead of a politics of global unification, I would hazard that we need as many different experiments with genres of being human (differently entangled with more-than-human socialities) as we can invent. Man hurts *all of us*, but there are so many ways not to be Man.

CONCLUSION

While some non-Man literacies and social situations will be invented and improvised as various collectives of actants seek out margins of delinquency within existing control apparatuses (Puar 2007, p. 222), we have to remember that often in decolonial politics, the aim isn’t becoming but rather endurance. As Povinelli argues, “In these situations, to be the same, to be durative, may be as emancipatory as to be transitive” (2011, p. 130). Here, a radical politics of refusing recognition (Coulthard 2014) and attempts by states and their amenuenses the (colonialist) disciplinary regimes of knowledge production (Simpson 2014) provide some of the most crucial models of *caring for situations*. In part, this is about efforts to resist the colonialist destruction of existing languages spoken by humans (and always tied to more-than-human situations, or rather to *land*). As Jairus Grove reminds us, “Language extinction is not just about the loss of words.... Each language contains a different cognitive map of the human brain” (2019, p. 54). For Grove, then, each language that disappears is also the disappearance of a way of being human outside of Man, a specific form of life. He goes on: “Each lost alliance or form of life means a future that can no longer come about” (p. 57). Literacies that disappear represent not so much losses of pasts as losses of possible futures. And this leads me to what seems like an inescapable conclusion:

that the only possible futures for human life involve the decolonization of literacies and land. My pluralization of pasts and futures here is meant to signal that one of the most crushing aspects of the humanist, Man-centric project has been its insistence that temporality is uniform, universal, and shared. This “chrononormativity,” to use Elizabeth Freeman’s (2010) phrase, is inescapably linked to the (settler) colonial project (Povinelli 2011; Coulthard 2014; Rifkin 2017) and to the heteronormative time of the nation-state (Halberstam 2005; Nyong’o 2009) as well as logics of “human development” that structure statist literacy benchmarks and tests.

The affirmation of other, non-Man ways of being human is inseparable from care for literacies that are intra-actively entangled with specific more-than-human fields of situational contact which often exist in temporalities beyond, beneath, and beside that of the (settler) state. Instead of allowing the state to capture and dissect literacy, using it to channel us through territories oriented around Man, we can learn to read state literacies improperly. We can invent our own literacies that orient us off track, out of the normalized channels. We need to recognize both that politics is dispersed far beyond the human (in the situations) and that futures beyond Man will require not homogenization but dispersed forms of being and relating. We can become errant by learning to feel how the conditions of possibility of this errancy, this delinquency, this refusal are *always materially there in the situation*. If generating a multiplicity of political and ecological futures is the goal, and these futures are inseparable from specific literacies, then we may need not *an* alternative to the capture of study in schools, but *many*. Caring requires a kind of intimacy, and in becoming more intimate with the material situations within which we intra-actively become, we find ourselves affectively pulled toward different futures, ones that exceed the calculable forecasts of investors.

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Educational (Im)possibilities During the Necrocene: Ontological (In)securities and an Ahumanist Existentialism?

Cathryn van Kessel

Living beings on Earth are facing a situation of rapid loss of biodiversity and the consequences of that loss. The planet's ability to support complex life in combination with ongoing human expansion and land use is exacerbated by the inadequacy of current sociopolitical responses to the "ominous erosion of Earth's life-support system" (Bradshaw et al. 2021, 2). One (im)possible question among many is how to adequately name this situation, given the complex legacies and intertwined reverberations that have brought it about. Some of the many terms offered up to name the current situation include: the *anthropocene*,¹ the *Plantationocene* (Haraway et al. 2016), and the *Necrocene* (McBrien 2016).

C. van Kessel (✉)

College of Education, Texas Christian University, Fort Worth, TX, USA
e-mail: c.vankessel@tcu.edu

¹ Because of her focus on the death of humans and associated "anthropocentric-signifying systems," Patricia MacCormack (2020) intentionally does not capitalize anthropocene (2).

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Anthropocene, generally, refers to the current epoch where humans and their activities dramatically impact Earth's climate and ecosystems. Planationocene signals a different problematic: How some humans have caused culpable harm to the planet and everything upon it (including other humans) through extractive biological and social practices. The Necrocene, on the other hand, turns the attention to death, and specifically the ontological significance of extinctions of species, societies, and cultures. Indeed, Chwałczyk (2020) has noted nearly a hundred different terms that have resulted from attempts to adequately conceptualize what is happening on Earth at this moment in time.

The (im)possibility of conceptualizing the climate crisis is reflected in the aforementioned naming debates, but also in health concerns, such as what Panu Pihkala (2019) has studied in Finland and elsewhere in regards to climate anxiety and the wider phenomenon of eco-anxiety, which “encompasses challenging emotions, experienced to a significant degree, due to environmental issues and the threats they pose” (3). Climate catastrophe has both direct and indirect effects on physical, mental, and community health that intersect and amplify each other: individual health factors, social status, and geographical positions make some humans more vulnerable to physiological and mental health problems arising from a climate-related event (Pihkala 2019). Although all bodies are negatively affected by climate catastrophe and anxiety, communities denied access to services, supports, and goods (often due to intersecting/interlocking structural violence; Crenshaw 1991; Razack 1998) are faced with multiple, cascading effects. As one example of many, an extreme heat wave due to climate change for some means simply turning on an air conditioner, while for others it entails dehydration and mental distress alongside physical strain, and even death. While some are privileged with the existential comfort (i.e., lack of climate anxiety) to deny, repress, and/or mitigate their impending doom from climate catastrophe, others are not.

Death, a significant source of human anxiety, can be more easily denied if it is happening to others and not ourselves (Bengtsson 2019), and thus a key aspect of the denial of climate change is linked to the denial of human mortality. Given this situation, the (im)possibilities that are the central focus of this chapter ask how educators might recognize defensiveness in themselves and in students to allow for a more genuine consideration of climate catastrophe, and then also how to pivot

away from that defensiveness. This approach is explored through another (im)possibility, what I develop here as an *ahuman existentialism*. In the context of climate catastrophe, humans are called upon not only to face their precarious situation (although “human animals” experience that precarity in highly different ways from each other), but also to acknowledge that many species are currently facing extinction (with more to come). Humans ought to consider more helpful (or, at a minimum, less harmful) ways of existing on the planet. One aspect of this task is to destabilize assumptions of human exceptionalism and reduce harmful human defensive compensatory reactions—to consider human creatureliness and limitedness through a monstrous concoction of existentialist thought and ahuman approaches mutated from fields such as philosophy and social psychology, among others.

This chapter begins by explicating one way of understanding ontological (in)security as a theoretical frame in the context of education and then pivots to examining two educationally (im)possible pairings that are germane to the problematic of ontological (in)security in relation to the Necocene. The first pairing is (de)coloniality and social studies education in the context of the defensive moves linked to ontological (in)security. The second (im)possibility is to link what is known from existential psychology to aspects of ahumanism. Although intertwined, the tensions between the aforementioned pairings are numerous (and perhaps irresolvable), and yet impossible problems entail impossible responses. With this assertion in mind, this chapter proposes a monstrous concoction of ideas and concepts—an *ahuman existentialism*—to help muddle through two broad and (im)possible problematics: the potential extinction of the human species (among other species) as well as the (human) limits of comprehending this demise.

ONTOLOGICAL (IN)SECURITY

Within many discussions of climate catastrophe in Canada, the United States, and elsewhere, ontological (in)security is the milieu. Western worldviews have tended to (over)compensate for the innate precarity of being a human animal, and such a positionality hinders educational engagements with climate change. Although human motivation is complex and layered, anxieties regarding what it might mean to be a finite creature on this planet play a significant role in human behavior, particularly regarding ideas that trigger existential anxieties. This section takes

a close look at one approach to understanding these anxieties through terror management theory and the concept of mortality salience so as to better understand/grapple with the defensive moves they can inspire.

Terror management theory (TMT; Greenberg et al. 1986)—an area of existential, experimental social psychology—has tested and extended the ideas of Ernest Becker (1973, 1975) about the effects of ontological (in)security on human behavior. The “terror” in TMT refers to the existential anxiety humans feel about their mortality, even with the absence of an immediate threat. TMT asserts that if human anxieties about their eventual demise remain unchecked, they hold the potential to interfere with many effective forms of thought and action. In response to the very idea of existential threat, psychologists have identified a myriad of defenses employed to keep thoughts of mortality away from consciousness (Solomon et al. 2015). Yet, it is impossible to escape the concept of mortality.

As TMT proposes, humans have the ability to imagine eventual death in the absence of an imminent threat. Humans can (over)compensate, triggering unhelpful or even destructive tendencies: “men have been the midwives of horror on this planet because this horror alone gave them peace of mind, made them ‘right’ in the world” (Becker 1975, 116). Compensatory behaviors can arise from *mortality salience*—the state of having death on your mind (Burke et al. 2010)—and from *worldview threat* when the beliefs one creates to explain the nature of reality to oneself are called into question, most often by a competing belief system of some Other (Schimel et al. 2007).

The climate crisis is a powerful example of how a topic can evoke mortality salience. Discussions on species extinctions in particular, as well as other aspects of the anthropocene (e.g., the impending doom of a planet without human-friendly air and water), directly remind humans about death—their own and that of others. It seems that almost any aspect of the anthropocene can evoke mortality salience. Indeed, this period of time is a *Necrocene* (McBrien 2016), a term derived from the Greek word for corpse (νεκρός = nekros) that illuminates death and destruction. As McBrien (2016) writes:

This becoming extinction is not simply the biological process of species extinction. It is also the extinguishing of cultures and languages, either through force or assimilation; it is the extermination of peoples, either through labor or deliberate murder; it is the extinction of the earth

in the depletion [of] fossil fuels, rare earth minerals, even the chemical element helium; it is ocean acidification and eutrophication, deforestation and desertification, melting ice sheets and rising sea levels; the great Pacific garbage patch and nuclear waste entombment; McDonalds and Monsanto. (116–117)

The term Necrocene pays attention to sociopolitical factors alongside the physical world—all in the context of extinction—and thus can be off-putting, and for a very good reason. Any discussion or intimation of death puts humans in a state of mortality salience, and thus can evoke two unhelpful reactions: denial and defensiveness. Not wanting to think about death is understandable, but pushing through that discomfort is of the utmost importance because denial impedes urgently needed action. Defensiveness resulting from mortality salience can take the form of a compensatory drive to affirm sources of existential stability, namely self-esteem and worldviews. Such defenses are not always negative, but, unfortunately, are often destructive. Thus, the Necrocene is a problematic in itself as well as evoking reverberating complications.

Worldviews are shared symbolic conceptions of reality (with associated self-esteem derived from social belonging), that provide a significant existential coping mechanism. Individuals keep thoughts of death out of awareness by adopting and adhering to cultural worldviews, but when these worldviews are threatened, they are unable to prevent death-related thoughts from creeping back toward consciousness (i.e., death-thought accessibility), and can therefore become defensive. A conflicting worldview reminds us that our own worldview might be arbitrary, and consequently we lose our shield against our fears of impermanence. Individuals and groups will often defend their worldview vehemently, particularly when they are primed to think about death (Landau et al. 2009; Schimel et al. 2007).

Anytime someone encounters an Other with a different worldview, they are existentially destabilized. This situation presents a challenge when any core belief is called into question, but regarding the Necrocene the stakes are even higher. As an example, a significant source of potential worldview threat in the context of educational encounters with the climate crisis is an engagement with decolonial and/or Indigenous perspectives that challenge Western assumptions about Land and relationality, all in the context of mortality salience.

DEFENSIVE MOVES AND THE CLIMATE CRISIS

When in a state of existential threat, humans feel a need for an increase in compensatory behaviors. Those in a state of mortality salience might do such things as protect the symbols that represent their most cherished beliefs (e.g., Greenberg et al. 1995) or behave more recklessly (Taubman-Ben Ari and Findler 2010). In the political realm, they might become more drawn to charismatic leaders who defend their beliefs (e.g., Cohen et al. 2017). Reminders of death increase prejudice, including religious (Greenberg et al. 1990) as well as national and racial prejudice (e.g., Greenberg et al. 2001), and increases aggression against worldview violators (e.g., Hirschberger et al. 2016; McGregor et al. 1998; Pyszczynski et al. 2006).

Being in a state of mortality salience and/or worldview threat can trigger a variety of defenses that have a direct effect on classroom situations. Some of these defenses are subtle, such as decreased reading comprehension of worldview-threatening material (Williams et al. 2012), or sitting closer to those we assume share our culture and farther away from those who do not, such as students self-segregating in diverse classrooms (Ochsman and Mathy 1994). Another subtle defensive move is more favorably responding to those with whom one shares a worldview, even if they are part of wrongdoing, as well as responding less favorably to those who hold an opposing worldview, including prejudicial behavior (Greenberg et al. 1990, 2001; Hayes et al. 2008).

Other defenses can be more obvious (Solomon et al. 2015): *derogation*, dismissing other views as inferior, such as insulting those with different worldviews; *assimilation*, validating our view by attempting to convert the Other to your own view; *accommodation*, appropriating aspects to diffuse the perceived threat, such as a surface-level inclusion of another worldview; and, *annihilation*, violence, war, genocide, as well as the expression of support for such annihilation. These behaviors may provide a temporary buffer to the ontological insecurity triggered by mortality salience and/or worldview threat, but are frequently harmful to our fellow humans.

In the context of the climate crisis, many of these harmful defensive moves are operationalized, and teachers may find themselves navigating the (im)possibilities for managing that situation. As an example, there have been aggressive reactions to those calling for decisive action to prevent and/or counter ill effects of the climate crisis. The activist, Greta

Thunberg, has been slandered by some media outlets and on social media on the basis of a variety of things, including that she has autism (Rourke 2019) or that she is “just a child.” She has been the subject of sexually violent bumper stickers (Antoneshyn 2020), highlighting how gender can be weaponized in the context of derogation and annihilation, much like how Canada’s former Minister of the Environment and Climate Change, Catherine McKenna, has been called “climate Barbie” and threatened in front of her children leading to the creation of a security detail for the Minister (Rabson 2019). Meanwhile, the Premier of Alberta, Jason Kenney, has alluded that his government should imprison protesters from groups like Greenpeace just as President Vladimir Putin does in Russia (Mason 2019). This is concomitant with the horrors of military and paramilitary-style measures that have been planned and executed in Canada (e.g., on the Wet’suwet’en nation’s ancestral lands; Dhillon and Parrish 2019) and the United States (e.g., the Standing Rock Sioux and those who stood by them against the Dakota Access Pipeline; Juhasz 2017). Some of these reactions, at least in part, could be attributed to economic greed linked to oil and gas extraction, but these reactions are also inherently linked to the milieu of petrocapiatalism (and thrust to extract no matter what the cost) as well as the settler colonial, misogynistic and ableist heteropatriarchy. But, more than that, from a TMT perspective these reactions are also linked to specific defensive compensatory reactions in the face of mortality salience (from the Necrocene) and worldview threat (e.g., challenges to Western beliefs about land, relations, economics, etc.).

Because of worldview threat, teachers and students might avoid interrogating the “ecocidal logics” predominant in Western societies that “are not inevitable or ‘human nature’, but are the result of a series of decisions that have their origins and reverberations in colonization” (Davis and Todd 2017, 763). This is a vital point as many humans hope for (and seek) a technological fix for climate catastrophe—carbon capture, alternative energy sources—but many of these do not address the underlying problems of economies based on perpetual growth where land is a resource for exploitation. A technological fix is an example of a surface-level engagement with the problem (i.e., accommodation in TMT terms; Hayes et al. 2015) and thus is an incomplete response at best, and at worst perpetuates the problem in yet another way.

Reminders of our impending doom can make us more prone to ignore or be hostile to those we consider to be Others, especially those who

call out our cherished beliefs into question, putting us into a state of worldview threat. Some fall into the trap of refusing the possibility of climate catastrophe—the climate change deniers—while others deflect the problem with an “[o]verly optimistic belief in the possibilities of science and technology” (Pihkala 2017, 115). Those who confront deniers or deflectors with the reality of climate change are silenced, rebuffed, or perhaps even attacked, especially if they are from a group subjected to intersecting structural violence (e.g., a young, neurodivergent woman like Thunberg). (Over)reactions to those calling for governments, communities, and individuals to take action on climate change can be rooted in compensatory defenses arising from mortality salience and/or worldview threat.

THE (IM)POSSIBILITY OF (DE)COLONIALITY AND SOCIAL STUDIES EDUCATION

Although colonization is often taught as a historical process from the sixteenth to early twentieth century, *coloniality* persists as the colonial matrix of power and a Western mindset/values/set of assumptions (Mignolo 2012), including assumptions about what it might mean to be a human and to ascribe to humanist way of storying the world (e.g., Donald 2019; Wynter 2003). Consequently, the contexts of coloniality are—or, ought to be—integral to social studies and its subdisciplines that include history, economics, geography, and civics (as studies of the “social”), although arguably vital to any educational encounter.

Yet, an acknowledgment of how colonial logics have contributed to the climate crisis (among other topics that fall within the scope of social studies) is often lacking (Korteweg and Root 2016). Powerful scholarship has been challenging coloniality in social studies (and beyond), including (but not limited to) what counts as civic education (e.g., Sabzalian 2019), the market logics of the *homo economicus* that undergirds many curricular assumptions (Donald 2019), the troubling invisibility of settler whiteness (e.g., Schick and St. Denis 2005), as well as Indigenous and Métis perspectives on why teachers need to pay careful attention to when the anthropocene began (Davis and Todd 2017).

Building on the work of Aldo Leopold ([1949] 1966), Kissling and Bell (2020) have made educators aware of the hitherto anthropocentric framing of communities in social studies disciplines. Similarly, Heather McGregor and colleagues (2020) have noted the need for history

education to attune itself “to a relational, ecological and ethical future orientation” (169). This disposition within social studies education literature harkens us to the sort of webbed kinship often articulated as “all my relations,” a phrase and sensibility that permeates a variety of Indigenous traditions on Turtle Island (King 1994). In this way, the “social” of social studies is broadened beyond just humans to include a more enmeshed understanding of how societies might live in good ways with each other and planet (although such a task seems, at least to me, complicated, nuanced, and thus with its own potential impossibilities). Such a shift in social studies education honors the call by Kalamaoka’aina Niheu (2019) for teachers in this time of climate catastrophe to draw strength from their communities, including (or in addition to, in the case of settler educators) insights from Indigenous scholarship and wisdom.

The (im)possibility of the extent to which non-Indigenous humans can take up Indigenous ways of knowing and being in good ways is an essential question at this moment in time, but is beyond the scope of this chapter because of the care and attention needed for such a discussion. Here, the focus is on how teachers are called upon to engage with the climate crisis, particularly when such an approach taps into one of the many Indigenous worldviews, as a topic evoking mortality salience while also engaging meaningfully with Indigenous beliefs that might be worldview threatening. What are the (im)possibilities for educators teaching about the climate crisis in a milieu of coloniality, especially given existentially-motivated barriers to such engagements? The problematics laid bare by interlocking structures of destruction and harm are at the same time both urgent and complicated.

THE (IM)POSSIBILITIES OF AN AHUMAN EXISTENTIALISM

Given the defenses identified by TMT, teachers can consider specific classroom strategies to alleviate existentially-based anxieties (e.g., van Kessel 2020; van Kessel and Saleh 2020). Taking on these strategies, however, means asking about the (im)possibilities for engaging directly with the root problem of ontological (in)security. For those who are engaging directly with the cognitive effects as well as the emotional and bodily affects of the Necroocene, they are still left with the question of how to exist as a human animal at this moment in time—and they are constantly in a state of mortality salience. For those with worldviews that hinder

such engagements, they are placed in a state of both mortality salience and worldview threat.

There is much potential for more ethical relations if humans can embrace uncomfortable realizations and emotions to produce a more respectful relationship with the planet and the entities upon it. Some humans already have a way to embody this—to be humble in terms of our place among other creatures, and seeking good relations with each other through, for example, wisdom traditions (e.g., Nehiyaw concepts and traditions, Sufism and Islamic mysticism, Zen Buddhism). For those who have been immersed in Enlightenment ways of knowing and being—like the position I have found myself in—perhaps perverting this Western epistemology and ontology would be a helpful method. With this latter option in mind, a form of *ahuman existentialism* is in order that might help build courage to face our “species” limitations. An ahuman existentialism asks: *How might educators operationalize humanist concepts as a reference point while pushing learners to extend beyond their Western conceptualization without evoking more worldview threat than they can handle?*

Knowing that humans act defensively to avoid or neutralize what makes them feel insecure ontologically, perhaps there are gentle ways to encourage people to consider their positionality as humans and their beliefs from humanism. It may be helpful to develop an awareness of these existential elements and thus encourage humans to “monitor and alter” unhelpful reactions (Solomon et al. 2015, 225) in relation to our ontological (in)security. As such, one (im)possible task is to consider an existentialist perspective, but one that places some of the Enlightenment-based aspects of such a perspective in tension with decolonial as well as ahumanist concepts. Two questions might assist with this task: *What might it mean to be ‘human’ in relation to other entities? What is the extent of “choice” that human animals have?*

The Human and the Self

As one key example of the problem of ontological (in)security, we might look at how the “human” itself might be (re)conceptualized. It is crucial to explicitly muddle what defines and delimits the human because this serves as an underlay for many aspects of education. Social studies and history education relies on the implicit and, at times, explicit assumption of considering humans above all other beings and in Canada and the

United States (and elsewhere) assumes the human to be a stable category of being—one that is relatively uncomplicated, individualistic, and rational (and thus exclusionary).

Drawing from Rosi Braidotti (2013), the term “human” tends to refer to its Enlightenment forefathers: Descartes and Kant bequeathed us an assumption of rationality and reason. Ironically, by this definition, not all *Homo sapiens* are considered human (1). For Kant and those who follow in his assumptions, humans are supposedly rational beings, and thus our assumptions about ethical actions in the world are linked to “reason rather than sentiment” (Critchley 2009, 80). Furthermore, the self is seen as an “I,” a unified, autonomous, rational subject instead of an “inconsistent or diverse self,” as “one” in relation to others (Bengtsson 2019, 67).

This lack of diversity of self and presumptions of reason extend to others, culminating in one definition of being human: that of the Western bourgeois “conception of the human, Man... overrepresents itself as if it were the human itself” (Wynter 2003, 260). Sylvia Wynter (2003), for instance, has argued that humanism has thwarted good relations between humans. As Wynter develops, Western imperial conquest and colonial settlement, with its necessary employment of a racialized slave trade and capitalist economies, has created a highly particular version of the human. Who is counted as such has been narrowed by coloniality (Mignolo 2012), and its associated violent and oppressive structures.

As a foil to the Enlightenment-based assumptions mentioned above, *ahumanism* (MacCormack 2020) is a non-speciesist approach that takes a stance against the troubling framing of humans versus nonhumans as a default frame of reference. With such a framing one might be able to meet their own anthropic perspective with humility, much like a form of situated knowledges (Haraway 1988; Lang 2011), thus potentially mitigating the defensive responses arising from ontological (in)security. Ahumanism is a compound comprised of an alpha (α) privitive to the word humanism. The grammatical structure of the alpha privitive negates the word that comes after, and this is the alpha in the word ahumanism: “not humanist” and “without humanism.” Instead of using humanist thought as a baseline to understand the planet and everything upon it, ahumanism provides an opportunity to act with grace—to step aside (MacCormack 2013). Humans do not need to impose upon other species, and (breaking from humanist thinking) do not need to observe, understand, relate to, or acquire knowledge of those others. Judging doing “good” as not active; that is to say, as passively stepping back, is a helpful framework

for human-nonhuman relations, as well as human-human relations. In short, sometimes the most helpful thing is to simply make room for ways of knowing and being in the world (although, importantly, such an argument ought not apply to passivity in the face of injustice).

In social studies education (and elsewhere), there is an urgent need to address the lack of ethical relations among humans (e.g., intersecting forms of structural violence) as well as between humans and nonhumans (e.g., the massive loss of biodiversity)—both of which have come to a head during the Necrocene. In order to encourage different ways of relating to entities upon this planet, many-but-not-all humans need a heavy dose of humility. What form might that humility take? For abolitionist antinatalist feminists, like Patricia MacCormack and Claire Colebrook, the “fear of human extinction is a necessary part of empathy that dismantles human privilege” (MacCormack 2020, 16). As Colebrook (2018) states:

Once humans think of themselves as a life form, and then as a life form with the exceptional capacity of thinking or reason, it becomes possible that the potentiality for thinking could cease to be, *and* that such a non-being of thinking is what must be averted at all costs. (50, original emphasis)

Such an entitlement to life prevents humans from meaningfully engaging with the Necrocene because they cannot imagine their non-existence—and are therefore more prone to denying the climate crisis, despite attempts by others to educate them in and out of the classroom.

The Role of Choice

Within the lineage of existentialist thought (as with Enlightenment-based thinking more generally), there is an implicit assumption of rationality to make better choices (Kant [1973] 1838), and this approach can both help and hurt attempts to cope with the Necrocene. Jean-Paul Sartre (1977) made the ontological claim that humans are their choices—and that they can always make something out of whatever situation in which they might find themselves. This idea of choice can feel really overwhelming (which Sartre links to the problem of alienation), but when individuals accept this situation it can be liberating as they are then able to make meaning in their lives. TMT has provided nuance to such a claim with a recognition of unconscious forces that shape our behavior. TMT research explains

defensive reactions that can subsume rational decision-making, but the problematic related to assumptions about choices and freedom persists. Solomon and colleagues (2015) suggested that we “monitor and alter” unhelpful reactions. In essence, they ask us make better choices based on that awareness, highlighting how TMT can help us take responsibility for those choices. Yet, the freedom to choose is not equally accessible to all, within the context of the Necrocene or more generally, for example, how some cannot afford eco-friendly goods or have the freedom of mobility to relocate to places safe from rising sea levels.

The psychological research reflected in this chapter is linked heavily to existentialist concepts, and yet, also in this same chapter, some of the many limits of a Western worldview have been highlighted. This contradiction is in many ways hypocritical, but the argument here is that the juxtaposition can help generate thinking and action in a helpful way. In this way, and presented as an (im)possible thought experiment, ahumanism is interpreted in its standard meaning as well as pretending that it has a copulative alpha prefix. In ancient Greek, this prefix expresses unity: ἀδελφός (*adelphos*) means “brother” but literally translates as “[from the] same womb.” To be clear, a copulative alpha is not the intended use in ahumanism. At the same time, we might consider both the sense of *absence* from the alpha privitive and sense of *unity* from the copulative alpha, as a both-and logic with a heavy dose of humility.

One way to approach such a humble sense of unity is through Eugene Thacker’s (2011) -inhuman ethics. It is easy to assume that the world is “for us,” but Earth is a “world-in-itself,” and as a planet it can operate as a “world-without-us” (Thacker 2011). Humans have no entitlement to the planet—it would be fine without humans, such as nonhuman animals do not “need” us (MacCormack 2013, 16)—and our choices ought to reflect that. This approach invites humans to destabilize their position and learn to thrive with fewer delusions of grandeur. As such, the existential stakes of encounters with mortality salience and/or worldview threat are lowered before a threat even occurs. Furthermore, during an existential threat, such humility can help humans make a choice to sit with their ontological insecurity without trying to resolve it through destructive defensive moves. Reminders of “our” insignificance (as what we label as “humans”) ironically might stabilize us against the sorts of mortality salience and worldview threat encountered when discussing aspects of the Necrocene and how “we” might live in that context as complex entities intertwined with other humans and nonhumans. Perhaps humans

might unite together, but with the humility about situated knowledges (Haraway 1988) as well as in the position as one of many entities on the planet, embracing our relationships and entanglements with other human, other entities, and the planet. It's a "big ask," especially in terms of existential anxiety.

RADICAL HOPE, HUMILITY, AND DEATH

Simon Critchley (2009) writes, "[t]o be a creature is to accept our dependence and limitedness in a way that does not result in disaffection and despair. It is rather the condition for courage and endurance" (249). Although glib optimism seems to hurt human capabilities to take action to mitigate climate catastrophe, *radical hope* (Gannon 2020; Lear 2006) provides a means to persevere. Optimism is often accompanied by an uncritical belief in progress (Foster 2015; Pihkala 2017). The existence of an "optimism bias" in humans "triggers some to underestimate the severity of a crisis and ignore expert warnings." It is important to "undercut this bias without inducing disproportionate feelings of fear and despair" (Bradshaw et al. 2021, 6). Yet, conveying this urgency without despair, or sending humans into "retail therapy" as Koger (2015) aptly notes (256), is tricky, and this is where radical hope comes into play.

Human communities have already had to cope with catastrophe—apocalypses have been lived for centuries by Indigenous peoples, for instance (Dillion 2012; Powys White 2017; TallBear 2016), and this situation reveals how there can be a commitment to not only survive, but to find a way to thrive despite (and within) pain and uncertainty. There can be a commitment to listen and learn "from others in the right way—even in radically different circumstances, even with the collapse of one's world—something good will come of it" (Lear 2006, 82). "Good" in this sense is not equivalent to "better" (i.e., progress), and yet still it is a step forward (Pihkala 2017, 119). Each step forward is a perhaps refusal to stop: "the clear-eyed determination to live anyway" (Foster 2015, 92). In education, this ethical framing is an invitation to recognize the long-standing and intertwined issues that have shaped the Necrocene with a view toward (re)turning to different ways of knowing and being on the planet. In social studies, this might be an opening up of what is considered to be a possible future as much as it is a (re)examination of the past. As the Necrocene is entwined with the concept of death, such educational encounters require a sort of "comfort in discomfort" while teachers and

students muddle through mortality salience and worldview threat. In this way, radical hope, unlike optimism, “can prevail even when there is no certainty at all about the future” (Pihkala 2017, 119).

Just as action and criticism ought to be considered as inseparable, so must expression and affect (MacCormack 2020). With this thrust in mind, it is important for those coping with climate anxiety to understand the emotions and affects that they are experiencing (Pihkala 2017). Indeed, such an approach is helpful in terms of what we know from mental health research, but also in terms of the much-needed fidelity to criticism and action needed to make the changes to mitigate the worst effects of the climate crisis. Importantly, such an approach is not to quash “so-called negative feelings” such as anger, frustration, and sadness; rather, the call is for the opposite: these intensities “contain important empowering characteristics” (Pihkala 2019, 12). Fear, grief, anger, and other emotions can stifle action (or force action without grace), but if accepted, processed, and channeled in particular ways they can also direct thoughts and actions toward taking action toward climate justice as it intersects with urgent individual and social factors, while also giving conceptual tools to act with grace toward other entities. Pedagogy informed by existential psychology invites educators to consider how mortality salience and worldview threat can shape what happens in their classroom—everything from reading comprehension to outbursts during discussions—as well as the shape curricular content takes, such as how even good intentions to “help” can inadvertently create further suffering through defensive moves like assimilation and accommodation. The task is not about finding a one, right way, but about opening up the space for what might be needed in each moment, and this requires a constant ethical vigilance within and beyond the classroom. Although coming to any sort of “terms” with death is perhaps impossible, educators and learners might instead (re)consider their humanity in a more nuanced way that includes choosing the discomfort of existential anxiety over perpetuating harmful ways of living and dying on the planet with others.

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Toward an Unsettling Hauntology of Science Education

Marc Higgins

Science education continues to be haunted by the (re)apparition of the question of where to “begin” with Indigenous ways-of-living-with-nature in the Canadian context in which I work as a white settler science educator. In this contemporary moment in Canadian science education, marked by teaching and learning in the era of Truth and Reconciliation, we are beginning to see more and more provincial curriculum moving toward the inclusion of Indigenous ways-of-living-with-nature: “we no longer have any excuse, only alibis, for turning away from this responsibility” (Derrida 1994/2006, 14). And yet, the question often materializes, conjured into being in ways that work to dispel and dismiss the full extent of this responsibility. While often informed by an intent of being in relation in a good way, this query functions as an exorcism to guard against the individual and systemic debts shaped by the ways in which science

M. Higgins (✉)

Department of Secondary Education, University of Alberta, Edmonton, AB,
Canada

e-mail: marcl@ualberta.ca

education is *always already* in relation to Indigeneity as a result of settler colonialism. Thus, this question often functions as a call to responsibility that masks more than it reveals: this has the unintended consequence of rendering diffuse the ability to respond to a problematic past while (re)producing it in the present. The question often belies that there is *a* proper, best, or most effective point of entry into pedagogical practice. Yet, the (re)apparition of the question as such betrays its own spectral returns: it is one that has been asked many times over, again and again, differing and deferring *an* answer, and answerability (see McKinley 2001; Spivak 1994). After Derrida (1994/2006), “everything begins before it begins” (202). Significantly, the question tells on itself: it discloses a longstanding refusal to heed the call of justice-to-come for Indigenous science (e.g., Cajete 1994; Kawagley 1995/2006). This call to honor the gifts of Indigenous ways-of-living-with-nature, and their co-constitutive ecologies, have been differentially articulated for decades by Indigenous science education scholars and allies. When pasts are passed over, but still come to constitute the here-now of contemporary practice, it is worth asking: what ghosts might science education be chasing away? As “every concept is *haunted* by its mutually constituted excluded other” (Barad 2010, 253, emphasis mine), and such is the relation between science education and Indigenous ways-of-living-with-nature (see McKinley & Aikenhead 2005), what would it mean to take as necessity the matter of ghosts, of ghostly matters?

It is necessary to speak of the ghost, indeed to the ghost and with it, from the moment that no ethics, no politics, whether revolutionary or not, seems possible and thinkable and just that does not recognize in its principle the respect for those others who are no longer or for those others who are not yet there, presently living, whether they are already dead or not yet born. No justice... seems possible or thinkable without the principle of some responsibility, beyond all living present, within that which disjoins the living present, before the ghosts of those who are not yet born or who are already dead, be they victims of wars, political or other kinds of violence, nationalist, racist, colonialist, sexist, or other kinds of exterminations, victims of the oppressions of capitalist imperialism or any of the forms of totalitarianism. (Derrida 1994/2006, xviii)

Drawing inspiration from decolonizing theories of haunting (e.g., Supernant 2020; Tuck & Ree 2013), hauntologies of teaching and learning (e.g., Bozalek et al. 2021; Motala & Stewart 2021; Zembylas, Bozalek, &

Motala 2021; Snaza 2014), and deconstructive approaches to the spectral (e.g., Barad 2010, 2012, 2019; Derrida 1994/2006)¹ this chapter pursues an *unsettling hauntology of science education*. In a nutshell, unsettling science education is a double(d) process of, first, addressing the ways in which *settler colonialism* manifests within science education by refusing and resisting the logics and structures through which the colonial project remains ongoing; and, secondly (and more subtly), attending to the ways in which science education draws from *stratified* and *sedimented* knowledges, phenomena, histories, pedagogies, and other practices which complicate questions of making space for and responding to Indigenous ways-of-living-with-nature (Bang & Marin 2015; Bang, Warren, Roseberry, & Medin 2012). Further, hauntology is a (near-)homonym of ontology that is meant to defer and differ ontology's conventional (and often settling) "discourse on the Being of beings" (Derrida 1994/2006, 63) to embrace that which exceeds it: the spectral. Together, they invite an ahuman pedagogical practice of addressing (in both senses of the word) ghosts of settler colonial injustice past which linger and lurk in the present moment² of science education, not to repair the past but to (re)imagine a future justice-to-come. Herein, we are visited by three ghostly explorations: the spectrality and specters of the question of where to "begin;" ghosts of/as settler horror in science education; and hauntological inheritances(s) (or, it's ghosts all the way down).

PART I: SPECTRALITY AND SPECTERS OF THE QUESTION OF WHERE TO "BEGIN"

Haunting is the cost of subjugation. It is the price paid for violence, for genocide.... In the context of the settler colonial nation-state, the settler hero has inherited the debts of his forefathers. This is difficult, even annoying to those who just wish to go about their day.... Erasure and defacement concoct ghosts; *I don't want to haunt you, but I will.* (Tuck & Ree 2013, 643, emphasis mine)

Because we need to "begin" *some-where* and *some-time*, let's "begin"³ with the spectrality of the question itself in the *here-now*: the ways in which it vacillates between *being* and *non-being*, *possibility* and *impossibility*, and perhaps an annoyance "to those who just wish to go about their day" (Tuck & Ree 2013, 643). Thinking with Ngāti Kahungunu

ki Wairarapa and Ngāi Tahu scholar and science educator Liz McKinley (2001), the (re)apparition of the question of where to “begin” has much to do with the ways in which dominance operates within science education and the ways it responds to difference: as a form of “masking power with innocence.” Rather than a passive lack of knowledge, this “sanctioned ignorance” (Spivak 1999) or “know-nothing-ism” (Kuokkanen 2007) is an active positional stance and strategy of collective forgetting about oppressive structures and practices (re)produced by dominant groups in science education (see Higgins 2021). Given science education’s politically and theoretically conservative nature (Lemke 2011; Milne & Scantlebury 2019), McKinley’s (2001) associated mandate continues to bear heeding: “we need to challenge the mask of innocence and ask ourselves how relations of domination and subordination regulate encounters in classrooms” (76).

Where masking power with innocence speaks to the ways in which the question of beginning is ritually expelled, it does not and cannot account for its (re)apparition. Here, to take haunting seriously is to invert the habitual and dominant structure of responsibility and agency: instead of settler colonial disciplinary spaces and individual actors taking up responsibility, haunting works to prevent the (re)assertion of an innocent or reconciliatory settler subjectivity that has assuaged its own fears and anxieties. As Unanga scholar Eve Tuck and her artist colleague Christine Ree (2014) powerfully state,

Social life, settler colonialism, and haunting are inextricably bound; each ensures there are always more ghosts to return. Haunting ... is the relentless remembering and reminding that will not be appeased by settler society’s assurances of innocence and reconciliation. Haunting is both acute and general; individuals are haunted, but so are societies.... Haunting doesn’t hope to change people’s perceptions, nor does it hope for reconciliation. Haunting lies precisely in its refusal to stop.... For ghosts, the haunting is the resolving, it is not what needs to be resolved. (642)

As the modes of taking up responsibility toward Indigenous ways-of-living-with-Nature in science education often mask power with innocence, there is far too often a move toward inclusion that does not address the settler colonial systems through which this exclusion occurred in the first place. As Spivak (1976) reminds, the language and practices we possess also possess us; thus, too simply moving beyond is “to run

the risk of forgetting the problem or believing it to be solved” (xv) by reproducing it elsewhere, albeit differently. Such possession always already “ensures there are always more ghosts to return” (Tuck & Ree 2013, 642): the project of Indigenous erasure persists in its perpetuation, whether consciously or unconsciously.

However, as Métis scholar Kisha Supernant (2020) states, haunting involves “a refusal to be forgotten, a subversion of erasure, a persistent, forced remembering” (86). Haunting *happens*: it ensures that settlers inherit the debts of those before them (Tuck & Ree 2013). This debt—marked by violent dispossession, displacement, and erasure—haunts science education. This is the case, even if or when there is a “properly spectral anteriority of the crime” (Derrida 1994/2006, 24) that often makes the locating or rendering (wholly) intelligible of an unsettling educational inheritance a task akin to speaking of and with ghosts. Such work, as Derrida (1994/2006) suggests, is the work of mourning:

It consists always in attempting to ontologize remains, to make them present, in the first place by identifying the bodily remains and by localizing the dead (all ontologization, all semanticization – philosophical, hermeneutical, or psychoanalytical – finds itself caught up in this work of mourning but, as such, it does not yet think it; we are posing here the question of the specter, to the specter... on this near side of such thinking) (Derrida 1994/2006, 9)

This work, in part, is to work toward (but never fully achieving) a solidification of the spectral: the ways in which this beginning has already begun elsewhere, its pasts as absent presents/presence. Although, let us be clear here: in the work of mourning in/as unsettling science education, there are some inheritances whose bodily remains do not require as extensive a presencing. As Tuck and Ree (2013) remind, “haunting is both acute and general” (642). Here are three short ghostly visitations, recognizing that ghosts haunting settler colonialism innumerably proliferate. First, the appropriation of and synthetization of Indigenous traditional willow-bark-based medicine, in the name of “discovery” by the Bayer pharmaceutical company, in what we know today as aspirin (see Snively & Corsiglia 2001). Second, the ways in which Indigenous peoples have been and continue to be the *objects* of science rather than its *subjects*, such as the nutritional experiments conducted on First nations communities and

residential schools in which malnourished children were denied appropriate nutrition, as a means of controlling variables (see Mosby 2013). Third, ongoing practices of genetic extractivism rooted in an image the “vanishing Indian” such that settler scientists take samples from Indigenous peoples globally in a way that is wholly disassociated from Western modernity’s complicity in the production of this image, or the multiple genocides which have come to inform it (see TallBear 2013). Importantly, for all of these ghosts, and the many others who linger and lurk, and those who are yet-to-come, “even where it is not acknowledged, even when it remains unconscious or disavowed, this debt remains at work” (Derrida 1994/2006, 115). There is not less responsibility to repair an evil even when it cannot be fully grasped as such,⁴ rendered *an* event or reality: science education continues to be haunted by its ghosts.

PART 2: GHOSTS OF/AS SETTLER HORROR IN SCIENCE EDUCATION

Settler colonialism is the management of those who have been made killable, once and future ghosts — those that had been destroyed, but also those that are generated in every generation.... Settler horror, then, comes about as part of this management, of the anxiety, the looming but never arriving guilt, the impossibility of forgiveness, the inescapability of retribution. (Tuck & Ree 2013, 642)

Because we need to “begin” some-where and some-time, let’s “begin” with Ojibwe scholar Megan Bang and Black and Choctaw scholar Ananda Marin’s seminal 2015 piece on *unsettling science education* (see also Bang et al. 2012). As they state:

Science education is a key site in which nature-culture relations are defined, enacted, brought-to-life, expanded, narrowed and legislated. The manifestations of nature-culture relations, from the very constructions of subject matter, to focal content, to the configurations of practice, engaged in science learning environments are often deeply unreflective of the most pressing scientific questions – rather they focus on “settled” phenomena as well as “settled” perspectives and relations to phenomena. (Bang and Marin 2015, 531)

Science education's ongoing relationship to Indigenous ways-of-living-with-nature is one that is complex and complicated. This relationship is often marked by Othering within, exclusion from, and problematic inclusion into science education curricula (e.g., school science) which defers and differs intended meanings and practices. When working in concert with other practices of schooling that treat Indigeneity as lesser-than, multiplicitous and entangled forms of Othering often results in forms of learning as onto-epistemic violence for Indigenous and many other learners (see McKinley 2001, 2013; McKinley & Stewart 2012). From a cultural studies perspective, school science regularly produces experiences of cultural *assimilation* and *acculturation* rather than *enculturation*. In other words, rather than a harmonious interfacing of cultures (i.e., enculturation), encounters of school science are more likely to house potential for dialectical negation that is either actualized (i.e., assimilation) or remains un-actualized through students' complex and complicated curricular navigation (i.e., acculturation). This can be, in part, attributed to the "the conventional goal" of science education as being one "of thinking, behaving, and believing like a scientist" (Aikenhead & Elliot 2010, 324). Through this unquestioned commitment, pedagogical approaches collude and coalesce around the construction and reification of the subject position of "Scientist," a position which is emblematic of the masculine, Eurocentric, and anthropocentric subject of Western modernity through modes that enact and uphold its metaphysics (e.g., representationalism, universalism, nature/culture divide). Which is to say, at the very least, there is much to be spooked about in science education.

Further, to move toward unsettling hauntologies is to engage a double(d) practice of attending to sedimented and stuck locations that continue to bear on the ways in which settler colonial logics persist and are perpetuated in ways that may register as ghostly absent presences. Although the above often goes unnamed and unmarked, it bears revisiting Tuck & Ree's (2013) conceptualization of settler colonialism as "the management of those who have been made killable, once and future ghosts" (642) and the ways in which the centering of "settled" phenomena through "settled" perspectives hauntologically matter and materialize beyond the classroom as well. Science education's (pre)dominant conceptualization of nature-culture, as possessing and possessed by society, makes palatable and possible the ongoing dispossession and devastation of Indigenous Land:

The fundamental tenant of settler-colonial societies is the acquisition of land as property, followed by the establishment of settler lifeways as the normative benchmark from which to measure development.... The maintenance of settler normativity requires the structuration of time-space relations in ways that make the inseparable dynamics of acquisition of land, [I]ndigenous erasure, and the domination of black people appear as an inevitable, unconnected, and natural course of development rather than socio-politically engineered to support and foster white entitlement and privilege. (Bang & Marin 2015, 532)

Dispersed through and entangled with the body of science education are historicities of (settler) colonial violence: even if responsibility, in the legal-judicial sense, cannot always be pinned to any particular individual scientist, science educator, or curriculum.⁵ Nonetheless, science education is haunted: its framings of nature in which other-than-humans are unagentic, brute materiality to be extracted and exploited in the name of human exceptionalism and entitlement are not and have not been without consequence. They are part and parcel of the dispossession and destruction of Indigenous Land and deeply entangled practices of (cultural and literal) genocide of Indigenous peoples by nation-states in the sake of acquisition of Land as property.

As Tuck & Ree (2013) offer, such is the making of *settler horror*: not only in the horror inflected by settler colonialism but also the horror experienced through settler subjectivities which must be managed, “the anxiety, the looming but never arriving guilt, the impossibility of forgiveness, the inescapability of retribution” (642). In (re)thinking the question of where to “begin” with the work of Tuck & Ree, there is an invitation to consider the ways in which Indigenous ways-of-living-with-nature are included within science education as a *scéance*—more specifically—an *exorcism*: “for to conjure means *also* to exorcise: to attempt both to destroy and to disavow” (Derrida 1994/2006, 59, emphasis in original). Settler science as *scéance* is a double(d) move. It is an effort to conjure Indigenous ways-of-living-with-nature as ghosts of the past whose contemporaneous presencing would be too much to bear for settler science. At the same (yet out-of-joint) time, the *séance* is a means of putting these ghosts to rest. Importantly, “effective exorcism pretends to declare the death only in order to put to death” (Derrida 1994/2006, 59): it is at once a constative certification that the ghost is gone and yet a performative enactment of its expulsion. The work of conjuring the

ghost requires making the ghost present, ontologizing it, mourning it, to be present at the scene of its death:

Mourning depends on us, in us, and not on the other in us. One must indeed know *when: at what instant* mourning began. One must indeed know *at what moment* death took place, really took place, and this is always the moment of a murder. (Derrida 1995, 20, emphasis in original)

Rather than an escape of the phantom effects of haunting, the collusion in murder ensures that there are always more ghosts to return: settler science education finds itself knife-in-hand, inviting its own haunting(s), yet somehow confused on this subject, wondering if such an even took place.⁶ As Derrida (1994/2006) suggests, “nothing is less sure, that what one would like to see dead is indeed dead” (59). Stated otherwise, settler colonialism both organizes the repression of Indigenous hauntings as well as the ways in which the haunting is recognized as such, and simultaneously the cause of innumerable ghosts to-come: *settler horror*.

PART 3: GHOSTLY INHERITANCES(S); OR, IT’S GHOSTS ALL THE WAY DOWN

While hauntings are understood by some as one or another form of subjective human experience – the epistemological revivification of the past, a recollection through which the past makes itself subjectively present – hauntings... are not mere subjective rememberings of a past (assumed to be) left behind (in actuality), but rather, *hauntings are the ontological rememberings, a dynamism of ontological indeterminacy of time-being in its materiality*. (Barad 2019, 539, emphasis in original)

Because we need to “begin” some-where and some-time, let’s “begin” where time is out-of-joint: troubling times call for the troubling of time. As feminist science studies scholar Karen Barad (2010) invites, “to address the past..., to speak with ghosts, is not to entertain or reconstruct some narrative of the way it was, [but rather] to respond, to be responsible, to take responsibility for that which we inherit” (264). Once more, settler science education is called upon to learn to speak to the ghosts of pasts passed over which continue to haunt its present as this has bearing

on what science education *was*, *is*, and *is becoming* toward a decolonizing justice-to-come. However, as Barad (2019) suggests, to speak with ghosts, to remember (to be haunted) is more than an epistemological recollection: it is a *hauntological* act, one that is spectral, ontologically indeterminate in its space-time-mattering.⁷ In turn, the work of attending to the inheritances that haunt science education is not without significance. These inheritances are *there-thens* which co-constitute the *here-now*, as well forces and flows which shape who we are and can become within science education.

Remembering the history of science, in this sense, takes on a different orientation: not only are we invited to attend to absent presences in the settler-colonial-science-education-narrative-as-usual, but also to the ways in which ontology itself is haunted by a plurality of proliferating ontologies. As Supernant (2020) states,

Haunting implies a relational ontology, for to be haunted is to be made aware of ghosts, the other-than-human beings who resist animacy, even when Western [modern(ist)] ontologies attempt to bound them as objects, places, or specimens without agency. (86–87)

Which is to say, hauntology troubles the very possibility of ontology being a singular affair. This is of particular significance when ontology comes to stand in for epistemic realism (a “settled” view of nature) such that Western modernity becomes the meter stick by which nature should be understood or known, and a means of recentering settler colonial ways-of-being in science education (see Higgins 2019). Importantly, ontology is itself a site of settler colonial *séance*: “ontology opposes [hauntology] only in a movement of exorcism. Ontology is a conjuration” (Derrida 1994/2006, 202). Once more, it is worth asking what ghosts might science education be chasing away? Let’s turn to a significant “origin” story of Western modern science: the birth of the laboratory.

At the center of the birth of the laboratory is the practice of being (and becoming) *modest witness*. As feminist science studies scholar Donna Haraway (1997) explains, this practice of modest witnessing is deeply entangled in the production of “objectivity” in which representational authority is established through the production of *a* scientific subjectivity which somehow loses all traces of its narrativity and historicity:

In order for the modesty... to be visible, the man – the witness whose accounts mirror reality – must be invisible, that is, an inhabitant of the potent “unmarked category,” which is constructed by the extraordinary conventions of self-invisibility.... This self-invisibility is the specifically modern, European, masculine, scientific form of the virtue of modesty. (23)

While the figuration of the modest witness and the very possibility of objectivity in the conventional sense has been under much critique, it nonetheless continues to bear as a narrative that “continues to get in the way of a more adequate, self-critical technoscience committed to situated knowledges” (Haraway 1997, 33). Science education is *always already* entangled with/in various material-discursive configurations whose (perceived) absence becomes naturalized through repetition. As feminist philosopher of science Isabelle Stengers (2001) suggests, while history does not repeat itself, it nonetheless repeats. It bears relevance and significance to learn about and from the past (as well as become-with, in the hauntological sense), even if the present is not self-same, about the ways in which the practice of modest witnessing never achieved the objectivity it sought out through de-subjectification.⁸

In Western Europe in the seventeenth century, the state required a new form of governance that was not religiously partisan as the result of many years of religious wars (i.e., the Thirty Years War). Turning from the church to science to keep the peace, those working within the laboratory as third-party observers—the practice of the day for experimental verification—were required to abstain from pronouncing or enacting religious affiliation when engaging in the act of observation (as the result could be violent). They were to witness the experiment “modestly.” Worth considering here is that the modest witnesses were all white men of significant status, which may signal to beliefs about who was immodest “by nature” and therefore unable to participate in the cultural practice of science. Yet, these practices are not as simple as abstaining from taking a political stance: there is a confluence of political, economic, religious, scientific, and military practices which are entangled and enfolded into the birth of the laboratory and how we continue to understand Western modern science today. For example, the politics of Land (and how land is conceptualized) mattered from the very beginning of what we called Western modern science: many “men of science” were also land-owners. Amidst the enclosure movement, a state-sanctioned project through which the

commons were made available to businessmen for agrarian purposes, those who lived with the Land (e.g., herbalists) were denied access to the places which sustained them (and which they sustained). Note that to make their case on the onto-epistemic-spiritual grounds in which they lived with the Land was risking being branded a heretic or a witch by the Church. Yet, that which goes unspoken for in a highly politicized arena often benefits those witness modestly, albeit as an absent presence.

Importantly, considering scientific praxis as conjuration and exorcism begins to reveal hauntological inheritances that are warded away at the altar of science: significantly, those in relation to Indigenous ways-of-living-with-nature, the relation to place, its other-than- and more-than-human agency, and the politics of place that have haunted Western modern science since its very “beginning.” These hauntings all matter and materialize: “one never inherits without coming to terms with... some specter, and therefore more than one spectre.” (Derrida 1994/2006, 24). While the above is not an example of the direct relationship between settler colonialism and science education, it’s *ghosts all the way down*: before settler colonialism, science was caught up in the dispossession of indigenous⁹ peoples from land in service of proto-capitalism. As Derrida (1994/2006) states, “haunting belongs to the structure of every hegemony” (46), and some hegemonies haunt others: ghosts all the way down.

CONCLUSION: UNSETTLING HAUNTOLOGY

Decolonization necessarily involves an interruption of the settler colonial nation-state, and of settler relations to land. Decolonization must mean attending to ghosts, and arresting widespread denial of the violence done to them. (Tuck & Ree 2013, 647)

Because we need to “begin” some-where and some-time, let’s “begin” by no longer asking *where do we begin to engage the question of including Indigenous knowledges or perspectives in science education?* This question, which continues to (re)appear, is a way of masking power with innocence, obscuring the ways in which Western modern science and Indigenous ways-of-living-with-nature are *always already* in relation within science education. Inclusion, as it is usually framed, becomes a site of colonial containment: Indigenous ways-of-living-with-nature are included, but

only so much as to (be able to) exorcize them in the name of assuaging settler subjectivities who cannot bear their own complicities in histories of colonial dispossession, displacement, and erasure. But to exorcize is to presence and be present at the scene of the murder. We must reckon with and learn to speak with specters of settler colonialism in science education, as it is ghosts all the way down: Western modern science has been concocting ghosts from its very beginning. For example, the scientific laboratory's entangled practices of the enclosure, witch burnings, and erasure are practices which hauntologically come to inform settler colonial pasts passed over, the present contemporary moment, and even a potentially singularizing vision of *the* future which continues to be marked by Indigenous erasure and destruction of Land. Significantly, as the future (avenir) and the to-come (à-venir) are not one and the same, the present of science education is irreducibly bound to and ethically indebted to Indigenous ways-of-living-with-nature. This potentiality that has yet-to-come, whose arrival is unforeseeable, invites “the continual reopening and *unsettling* of what might yet be, of what was, and what comes to be” (Barad 2010, 264, emphasis in original).

These three ghostly visitations are to remind that “there is no inheritance without a call to responsibility. An inheritance is always the reaffirmation of a debt” (Derrida 1994/2006, 114). For those of us in science education (and particularly white settlers, like myself), this debt is marked by injustices committed from which settler societies and individuals continue to benefit, both acutely and generally. Thus, once more, if science education continues to “focus on ‘settled’ phenomena as well as ‘settled’ perspectives and relations to phenomena” (Bang & Marin 2015, 531), which rely on and reinforce settler lifeways while simultaneously dismissing, diminishing, and denying Indigenous ways-of-living-with-nature, presence, and futurities, the question and response to “where do we begin?” will remain but a tokenistic “settler move-to-innocence” (Tuck & Yang 2012). This move serves to distract from the more unsettling demands of this work (namely, Land) and, primarily, an effort to reconceptualize and recenter the subject of dominance. Science education must learn to speak to ghosts of settler colonial injustice past which linger and lurk in the present moment. Significantly, ghosts are innumerable—“one can neither count the ghost, ... count on it nor with it” (Derrida 1994/2006, 173)—these are but possible possibilities for an unsettling hauntology of science education, and there is much more work to be done.

NOTES

1. This particular theoretical intersection is haunted by its own problematics. As Métis scholar Zoe Todd (2016) explicitly states “ontology” might come to be “just another word for colonialism” if the dynamics between Indigenous ways-of-knowing-in-being and post-humanisms go unmarked and unchallenged: namely the ways in which claims of “newness” often risk subsuming or suturing over ways of relating to the other-than- and more-than-human world that have been thought and practiced since time immemorial (see Bang & Marin 2015; Tuck 2010; Watts 2013; see also Higgins 2017; Zembylas 2018).

However, and significantly, there remains some points of resonance worth critically inhabiting (even if, as Kuokkanen [2007] suggests, that many theorists of deconstruction are heavily invested in Western modernity’s ontological tradition and trajectory):

Deconstruction is the decentralization and decolonization of European thought... Hence, deconstruction is a deconstruction of the concept, the authority, and the assumed primacy of the category of “the West.” (McKinley & Aikenhead 2005, 902)

In turn, and in learning to speak with ghosts, this work situates itself within the growing body of scholarship which attempts to productively labour these tensions (e.g., Nxumalo & Cedillo 2017; Rosiek, Snyder, & Pratt 2020; Zembylas, Bozalek, & Motala 2021).

Furthermore, this text’s multiplicitous use of footnotes takes seriously hauntological writing in that they are all traces of a main body of writing that either once was or could have been: they haunt from the margins as spectrally absent presences.

2. Significantly, for Derrida (1994/2006), “haunting is historical, to be sure, but it is not dated, it is never docilely given a date in the chain of presents, day after day, according to the instituted order of a calendar” (3). Such matters greatly in the context of settler colonialism: settler colonialism is not strictly a historical injustice located in the past but rather an ongoing event (Wolfe 1999; see also Tuck & Ree 2013; Tuck & Yang 2012). The ways in which “settler temporalities” (Rifkin 2017) produce time as a linear and unitary does not and cannot account for the ways in which pasts can be passed over for some while still very much felt by others. Further, the temporality of hauntings question the very possibility of a universal(ist) notion or enactment of time: it is always already *out-of-joint* (see Barad 2010; Derrida 1994/2006).
3. Elsewhere (Higgins 2021), I discuss in much greater length the ways in which the relational ontologies put to work herein (e.g., Indigenous,

deconstructive post-humanisms) “caus[e] trouble for the very notion of ‘from the beginning’” (Barad 2010, 245). Every “beginning” has already begun *elsewhere* and *elsewhen*: “it is not merely that the future and the past are not ‘there’ and never sit still, but that the present is not simply here-now” (Barad 2010, 244) This mantra of beginning some-where and some-time, repeated herein as well, serves first as a reminder that the *here-now* is entangled with a plurality of *there-thens* which are not only or strictly epistemological objects (e.g., historical or geographical facts) but are *hauntologically* co-constitutive of the here and the now. Secondly, it suggests that science education is always already within the question of Indigenous science in science education. Thirdly, it presents plurality as asset rather than liability: there is a multiplicity of productive locations from which to “begin” (re)opening the ability to respond, while recognizing that some are more productive than others.

4. Significantly, the spectral never fully belongs to the realm of knowledge (as conventionally understood). As Derrida (1994/2006) suggests,

One does not know: not out of ignorance, but because this non-object, this non-present present, this being-there of an absent or departed one no longer belongs to knowledge. At least no longer to that which one thinks one knows by the name of knowledge. (5)

5. Nonetheless, there are moments in which it can pinned to individuals and their actions. In the earlier aforementioned ghostly visitation of nutritional experimentation, we can trace the proliferation of ghosts to two men: Dr Percy Moore, the Indian Affairs Branch Superintendent of Medical Services, and Dr Frederick Tisdall, a famous nutritionist who went on to co-develop Pablum (infant cereal) in the 1930s. That said, the localizing of the act does not act as ward against the ways in which responsibility multiply and circulate beyond the legal-judicial sense—haunting settler science education.
6. If we also take seriously the notion that “knowledge, once it is defined, taught and used as a ‘thing made’, is dead” (Ellsworth 2005, 1), and the ways that science education remains largely the patching together of such sedimented and stuck knowledges, such a séance also speaks to the work of (re)animating the corpse of science (whose death continues to be refused and mourned): “exorcism conjures away the evil in ways that are also irrational, using magical, mysterious, even mystifying practices” (Derrida 1994/2006, 59).
7. In her particle physics work, Barad provides empirical evidence of hauntings through quantum field theory. As Barad (2012) suggests us in *What is the measure of nothingness?*, nothingness is itself a ghostly doing that is marked

by spectral non/being, by possibility and potentiality. This is even the case for what is classically understood as “pure” nothingness: the vacuum of space. As she states,

From the point of view of classical physics, the vacuum has no matter and no energy. But the quantum principle of ontological indeterminacy calls the existence of such a zero-energy, zero-matter state into question, or rather, makes it into a question with no decidable answer. Not a settled matter, or rather, no matter. And if the energy of the vacuum is not determinably zero, it isn't determinably empty. (8–9)

Rather than this determinability being a question of epistemological uncertainty, it is one of ontological indeterminacy, “the indeterminacy of *being/non-being, a ghostly non/existence*” (Barad 2012, 12, emphasis in original). Even the smallest of particles vacillates between being a something and a nothing. This ghostly non/existence is co-constituted and co-constituting a plurality of other particles and particles-to-come. As she states, “even the smallest bits of matter are an enormous multitude. Each ‘individual’ is more up of all possible histories of virtual intra-actions with all Others. Indeterminacy is an un/doing of identity that unsettles the very foundation of non/being” (15).

8. Significantly, this de-subjectification was not without ghosts (see Higgins & Tolbert 2018). One of the most emblematic men of science whose ways-of-being-scientific continues to be used as a mould for what it means to become scientist in the contemporary moment was a spiritualist: Isaac Newton—first man of science, last man of magic (see Prirogine & Stengers 1984; Stengers 2001). As spirituality, or anything supernatural such as spirits or ghosts, often becomes a site of refusal or negation of Indigenous ways-of-living-with-nature (see Marker 2006), this past passed over haunts science education as spirituality cannot be so easily disentangled from Indigenous science (see Cajete 1994).
9. Here, the lower case is intentional to denote difference from the capitalized form which is meant to politically recognize peoples who have been and continue displaced and dispossessed through (settler) colonialism.

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PART II

Machinic (Re)Distributions



Mapping Entanglement: Mobilizing the Uncanniness of Machine-Vision

Delphi Carstens

Could the dead lunar regolith in the foreground of the portentous Apollo 8 Earthrise image taken in December 1968 represent the fate of the “fragile” blue marble rising above it? T.J Demos (2017, p. 9) wonders about the role of iconic Anthropocene imagery such as this in disseminating the necrotic logic of the “geological age of man.” After all, “the technical accomplishments required to build the spacecraft” from which NASA’s iconic images of the blue marble were taken “were made possible by the same objectifying attitude that discloses Earth as a stockpile of raw materials for enhancing human power” (Zimmerman, 1994, p. 9). My intention is to investigate how machine-enhanced vision can be pedagogically turned away from the “high-magical parasitic exigencies of Capital” (Deleuze, 1989, p. 12) and redeployed to generate a new “ethico-aesthetic paradigm” (Guattari, 1995) that maps more-than-human entanglement. Using artistic work by the Orphan Drift collective

D. Carstens (✉)
University of the Western Cape, Cape Town, South Africa
e-mail: carstensdelphi@gmail.com

and the artist Mer Roberts as a launching pad, my argument is that while machine-aided vision has induced a rift “between the world of the senses, that of appearances and the physical/secular world-view” (Arendt, 2007, n.p.) it has also unraveled and destabilized the certainty of the human gaze. By unlocking the hidden, affective, and transformative aspects of machine-aided vision, this chapter investigates ways in which the technological sublime might be productively undomesticated to work toward the realization of more-than-human futures that linger beyond the pall of mechanically produced extinction.

Arguably the most significant and contested of all Anthropocene images are among its “firsts”: The Apollo satellite images of *Earthrise* (1968) and *The Blue Marble* (1972) that revealed the “whole Earth” to the human gaze (Demos, 2017). *Anthropos*, “he who looks up,” had arguably never looked back down in such an uncanny manner. At this pivotal and supposedly “triumphant” moment, when the military-state-corporate apparatus was asserting itself as a technologically empowered planetary force, these images amounted to a potent “symbolic paradox”: Gaia, the decisive exemplar of visuality, had appeared on the screens of “media space, [...] the most artificial and disembodied of human artifacts,” to reassert itself as “the ultimate field and limit of the real” (Davis, 1998, p. 307). It was Martin Heidegger who most clearly recognized the apocalyptic import of these images: On the one hand they signaled the catastrophic arrival of an inhuman technological system that was reducing the Earth to a standing reserve of extractable raw materials and lives, while on the other they signaled a transformative “*poiesis*” or “bringing forth” (1977, p. 12). Such a transformation does not happen by itself but requires the pedagogical deployment of avatars and the mobilization of an “undomesticated” sublime aesthesis. James Lovelock and Lynn Margulis’ Gaia hypothesis marks one such mobilization, grounding the Apollo’s images not in the logic of the arbitrary signifier, but rather in that of an unalterable more-than-human presence. Thus potentiated, the affordances of machine-mediated vision could be made to signal the intrusion of the impersonal, extraterritorial, ahistorical, and ahuman; the arrival of an ecosophic articulation that combats the “fatalistic passivity [and] the infantilisation of opinion” brought on by the sedative “fix of television” and the smug self-assurance of “techno-scientific power” (Guattari, 2000, p. 27).

This chapter argues for the mobilization of such a spectral aesthetics by means of minoritarian artistic/pedagogical practices that reveal “emergent and unexpectant constellations of life, nonlife and afterlife” beckoning from beyond “Anthropocene landscapes of death and extinction” (Bubandt, 2017, p. G136). Such an aesthesis—which I explore here via the work of the artistic collective Orphan Drift (OD)—invites us to mobilize machine-vision to create space for the invention of the unprecedented to counter the “pervasive atmosphere of dullness and passivity” fabricated by Integrated World Capitalism (Guattari, 2000, p.47). In the work of OD, digital processing techniques and virtual avatars are deployed to conjure haptic journeys across thresholds of becoming; affect-images of “*transversal communication*” and “*abominable couplings*” between the *virtual/material, organic/inorganic, human/nonhuman*, etc. (Deleuze & Guattari, 1987, p. 10). Thus potentiated, machine-vision is mobilized to affect a processual, bewildering, and ecosophic pedagogical movement that takes stock of “the profound shifts taking place in and around what a human is” as well as the “ecological horizon of the Anthropocene’s fracturing of historical time” (Snaza, 2019, p. 155).

UNCANNY AESTHETICS

If aesthetic (as opposed to efferent) experience focuses the attention of the perceiver of images directly on the sense of what is being lived through, then a new kind of aesthesis had arrived with the *Earthrise* and *The Blue Marble* images. For Guattari, aesthetic affects are not generated from prefigured value judgments of beauty. Rather, as Chantelle Gray van Heerden (2017, p. 74) explains, affective aesthesis “holds a space of virtual potentiality” that is intensive and extensive, producing a perceptual resonance that does not represent or prefigure experience as much as “create a disruption that allows for a potentiality” to emerge. Running counter to the military-industrial complex’s triumphalist mantras, Gaia showed how the mobilization of an uncanny myth-science avatar could draw on aesthesis to elicit an intensive affect by making the complex assemblage-making relations between lifeforms, ecosystem cycles, and geological processes “clearly recognisable” (Lovelock & Margulis, 1973, n.p.). Humanity was thereby optically and haptically revealed as a mere “relay point in a swirl of chemicals, energies, processes, systems and interspecies encounters” (Snaza, 2019, p. 155). A materialization of more-than-human machinic networks whose ages spanned billions of

years thus potentized NASAs satellite images, changing them from a mere mechanically reproduced tracing to an uncanny machinic mapping of entanglement. In the span of a few short decades following the first satellite images of the blue swirl, digital processing techniques would make an array of unnatural nuptials between cosmological, geological, biological, and cultural strata even more abundantly visible. Yet this new perceptual language—this mapping of more-than-human entanglements—would require artists and pedagogues to mobilize its extensive and intensive affects. Deployed as a thinking-movement, Gaia ruptured the pictorial space of the blue marble and Earthrise images with a fluidity which stood (and still stands) in stark conflict with the straight lines of humanist reason. Mobilized as a pedagogical avatar, Gaia announced a liquid and fractaline swirl, signaling what Amanda Boetzkes (2015, p. 272) calls “ecologicity” or ecological/ecosophical aesthetics. This ecologicity, as Guattari (in Melitopoulos & Lazzarato, 2012, p. 1) explains, can only be potentiated by the deployment of a “machinic animism” that channels uncanny animistic situations and “rituals” into an aesthetic affordance that is able to redistribute “the self in relation to the other and/or object” and thereby to “assemble new kinds of spaces of being and becoming” (2012, p. 272).

Formed as core of visual artists in 1994, working alongside sound engineers, concept engineers, and media activists, 0D set out to mobilize this uncanny ecologicity. As founder Mer Roberts puts it (2016, n.p.), 0D grounded itself in a minoritarian ethico-aesthetic praxis; “a hive mind” that “subsumed individual identity in a radical experiment with artistic subjectivity to produce a singular artist avatar which operated out of virtual zones.” This singular avatar would deploy Deleuze and Guattari’s conception of minor art as a “being of sensation” (1994, p. 164) to invoke a multiplicity of avatars in conjuring a pedagogy of machinic animism. Their methodology would draw on the “dissonant accords” of a dark and “undomesticated” sublime; one that “liberated excess” by engaging the senses “in such a manner that they struggle[d] against each other like wrestlers, pushing each other to new limits and new inspirations” (Deleuze, 1994, p. 164). Whereas majoritarian humanist/anthropocentric artistic practices had sought to domesticate the sublime by blocking off its more-than-human aesthetic affordances, 0D sought to replicate the sublime shock of Gaia by mobilizing virtual avatars to enact a daemonotechnics that would make visible “liminal, vertiginous and exotic encounters with the virtual-material” (Roberts,

2016, n.p.). Deleuze and Guattari's deployment of conceptual persona as well as their dynamic modes of composition enact an analogous thinking-movement. Like these thinkers, 0D set out to construct a perceptual language that could mobilize an undomesticated sublime in moving toward that which is unrepresentable and uncontainable, beyond the limiting capacities of reasoned human thought.

"The future is implanting, a chemical clock ticking where you can never hear it, in the space that ravages the mind," announces the back-cover of 0D's first artistic foray, *Cyberpositive* (1995). Presenting itself as an apocalyptic cybergothic SF novel, *Cyberpositive* optically mobilizes the unrepresentable sublime via inserts of textual glossolalia and sinuous machine code, working the visual field of the text in the uncanny manner of a surrealist painting. This visuality presents an affect image of the subject of the novel—the confluence between the drug-tech nexus of the 1990s, an animist revival, and the spectral undertow of technological acceleration. The result is a schizanalytic textual/visual portrait of self and planet poisoning via chemical and technological acceleration, inverted, potentiated, and pushed toward the future inception of a radical ahuman possibility space. As with Lovelock and Margulis, 0D is concerned with mapping human entanglements in "cosmic, biospheric and evolutionary networks" (1995, p. 211). While NASA's satellite images—along with scanning electron micrographs, macrophotographs, and other machine-visioned phantasmagorias—had made this entanglement copiously visible, "human software circuits connected to domination, tradition, and inhibition" continued to erode this visual affordance (0D, 1995, p. 11). With the intention of delineating a new aesthetic language 0D, as Roberts (2016, n.p.) explains, set out to mobilize the uncanny capacity of digital/virtual to make "tangible the narrowing gap/porous membrane between the material and immaterial" and to blur "distinctions between the physical and the virtual, natural and supernatural."

Cyberpositive announced 0D's fascination with machinic animism, setting out an aesthetic program for "liberating texture from its environment [and] energy-flux from contoured form [with] the goal to recreate the intensity of being lost and possessed" (Reynolds, 2002, n.p.). The aesthetic space of machinic animism works via a becoming minoritarian whereby the "self that acts and recalls" is "ridden" by inhuman forces (Deleuze & Guattari, 1987, p. 162): The ego-self is shed in favor of "becomings, becoming-animal, becomings-molecular [that] have replaced history, individual or general. ... No longer are there acts to explain,

dreams or phantasies to interpret, childhood memories to recall, words to make signify ... [merely] colours and sounds, becomings and intensities” (1987, p. 162). In such a synaesthetic, sublime, and animistic virtual becoming space in which optics and haptics overlap, there is only what OD, citing experimental cinematographer Maya Deren, refers to as the “fog of proximity” (1995, p. 68) or what Deleuze and Guattari refer to as “a glowing fog, a dark yellow mist that has affects and experiences movements, speeds” (1987, p. 162). In their ensuing performative and visual work, OD pushed sublime aesthetics even further away from the modernist nostalgia that Ronald Barthes, in his work on photography, had identified as the “vertigo of time defeated” (1981, p. 97). Instead of replicating the mediated abyssal desert of the thoroughly domesticated and nostalgia-haunted post-millennial “sublime” (Derrida, 2006, p. 169), OD deployed machine-vision to make contact with an unrepresentable beyond (Fig. 6.1).

In their *Syzygy* performance/audio-visual event and its accompanying *Mesbed: digital unlife Catacombs* (1999) OD, in collaboration with the



Fig. 6.1 Orphan Drift, 1999, Xes Avatar wall collage, SYZYGY multi-media installation at Beaconsfield Arts London

CCRU, deepened their investigation into the affective and haptic intersection of machinic visuality and machine-produced sound, the crises of time-perception that this was engendering, and the actions of hyperstitional more-than-human agencies made perceptible by machine-vision. In both *Syzygy* and its accompanying *Catacomics*, time and space are visually imagined, performed, and presented as a labyrinth—not a physical maze, as such, but a “mesh”; a network of connected stimuli in constant flux through which the contemporary self must navigate as it moves, via the potentiated aesthetic affordances of machine-vision, beyond the human. In such a manner, *Catacomics* conjures a visual, temporal and spatial “zone” to imagine the human visual cortex as it dis-connects and re-connects through technological networks. The “zone” conjured in the *Catacomics* is a familiar science-fictional and postmodernist literary trope; a site, both visual and textual, where ontological shifts and slippages occur and different ontological and perceptual states collide; where “an alien space” is inserted “within a familiar space, or between two adjacent areas of space where no such “between” exists” (McHale, 1987, p. 46). 0D describes the “zone” their work invokes as a sublime “possession space;” a “drift-space” of occult correspondences, “wasp nest of shaman connectors,” an affect-image of the psychic underbelly of the technological space of flows (1995, p. 14). The *Catacomics* inhabits this ontological drift-zone, invoking it as digital hyperstition (a process whereby the virtual is made material) via five demon avatars—Katak, MurMur, Djynxx/Spl/ce, Oddubb/Xes, and Uttunul/IIS—that inhabit the fluid intersections of the mesh, between communications media (the space of flows) and a more-than-human brainstem that remembers distant evolutionary pasts while extending forward into uncertain nonhuman evolutionary futures.

Syzygy/Catacomics's demon avatars or conceptual persona represent the capacity of the digital-virtual to optically and haptically penetrate, subsume, enfold, and irradiate the affective material sensory body. The techno-animistic performances of possession by these machinic circuits, enacted at *Syzygy*, are mirrored in *Catacomics*'s bricolage of digitally manipulated text and images, illustrating the movement of the affective body through the digital virtual, “snaking into depths beyond sense” as it undergoes a sequence of becomings, from animal to imperceptible (0D & CCRU, 1999, p. 22). Demons, in 0D and the CCRU's vocabulary, are optic perceptual frequencies and haptic vibrational sensitivities that push and pull the sensory body across/through environmental effects and affects, making it occupy the unstable state of the mesh, exposing

it to thresholds and gradients of becoming. Mobilized to disband the “software circuits of anthropocentrism” (1999, p. 4), *Syzygy/Catacombs*’s machine-vision avatars effect an aesthetic rite of passage, destabilizing the detachment and perspectival mastery of the domesticated humanist sublime and taking it elsewhere and beyond via the dark yet liberatory madness of the fantastical and supernatural, the shamanic and the schizophrenic. As Simon Reynolds (2002, n.p.) observes, machine vision is here twisted into a subversive haptic aesthesis, made to enact a “sort of retinal trembling, as though vision itself was wavering, the mind-screen buckling and crinkling.” Visually, both *Syzygy* and the *Catacombs* work with manipulated screen space, twisting frequent Burroughs-like visual/textual cut-ups and allusions to ontological destabilization, possession, delirium, and madness into a complex mesh of patterns, strands, static distortion, and obscure symbols. Abstracted spines and DNA-strands morphed into alien configurations dominate the image flow and occult the performance and its accompanying text, privileging sublime aesthesis over the rationalist image mode. Animating the work, the five demon avatars function not only as the template for artistic/aesthetic production, but also for the pragmatic navigational tools of animist practices like shamanism and voodoo. The protocols for artistic and pedagogical experimentation, both here and in subsequent work by 0D, is an aesthetic sublime grounded in shamanism’s “paradoxical passages,” which as the anthropologist Mircea Eliade (1989, p. 490) writes, involve a perceptual synaesthetic language orientated around possession, contagion and the crossing of thresholds of becoming that bring the human sensorium into contact with a “suprasensible” more-than-human beyond.

Navigating the suprasensible beyond involves a contradictory and dangerous passage. Whether ecstatically navigating the “axis” between worlds or “surrendering your feelings to a pervasive military-industrial entertainment complex,” the trick as Hito Steyerl (in Heiser, 2010, n.p.) observes, is “to be immersed without drowning,” or, “to be embedded without falling insensible.” Survival in a world dominated by the pervasive infotainment networks of Integrated World Capitalism, as 0D’s work suggests, means pedagogically and artistically mobilizing the furtive, experimental, and “paradoxical” perceptual techniques of animism to forge new modes of attention and to plot lines of flight, resistance, and more-than-human survival. Cultivating an ecosophical aesthetics means learning to pay attention anew to visibility. After all, we now live in an image/data drenched world in which “not seeing anything intelligible

has become the new normal” (Steyerl, 2016, n.p.). Learning to see anew means resisting the aesthetic insensibility imposed on us by the franchised chimeras of commodity capitalism and letting go of the “anthropocentric modes of navigation” that are eroding our perceptual sense of the world (Gardner & MacCormack, 2018, p. 1). Ethically, we are called upon to “recognise the immanence of materiality and ideality” and to “embed new forms of being-presence and being-in-becoming” in our practices, “seeking out new individual, social and environmental ecologies of production, action and expression” (Geerts & Carstens, 2021, p.II).

RITUALS OF INSURRECTION

A 2016–2018 video collaboration, manifesting as a series of filmed and digitally edited performances between 0D and Plastique Fantastique—*Green Skeen*—responds to Guattari’s observation that “the ecological disequilibrium” engendered by “techno-scientific transformation” threatens to disrupt the “continuation of life on the planet’s surface earth” (2020, p. 18). To counter this disruption, *Green-Skeen* enacts a ritual of ecosophic insurrection and transformation based around a casting of the I-Ching – “an ancient technology of bibliomancy” for “harnessing chance” and allowing “the outside to speak” (Shaw & Reeves-Evison, 2017, p. 53). The title of the collaborative telematic performance piece refers simultaneously to a casting of Hexagram 49 (Lake over Fire), which counsels a “molting” or “skinning” ritual, as well as to the green screen CGI technique whereby 0D and Plastique Fantastique would concretize this skinning. In such a manner, the green screen filming technique for digitally embedding avatars is combined with an oracular summoning ritual. The virtual and the actively embodied are thereby made to intersect, reinventing “the relation of the subject to the body, to phantasm, to the passage of time, to the mysteries of life and death” in the Anthropocene (Guattari, 2000, p. 35).

Since its inception in 1994, 0D has evolved “a series of performative and formal techniques of invocation [for] calling in various agents, beings and circumstances from the abstract outsides encountered in their demonology and travels in the digital virtual” (Shaw & Reeves-Evison, 2017, p. 46). Plastique Fantastique (founded by Simon O’Sullivan and Dave Burrows in 2004) works with a similar investment “in the exploration of ritual and the digital as means of raiding, redesigning and reorientating our affective relations toward the outside” (2017, p. 48).

In bringing together a shared mode of speculative art-making/pedagogy, *Green Skeen* mobilizes machine-vision in a quest to make visible the abstract outside without prioritizing the “lower-order inside” of the “risable human subject” (2017, p. 49). In performing this insurrection 0D and *Plastique Fantastique* mobilize shamanism’s haptic and optical “language-twisting-twisting”—an affective aesthetic technique that deploys visionary avatars made of “three-dimensional sound-emitting images” to navigate contradiction and “see around” difficult concepts (Narby, 1998, p. 99). The impetus behind such a daemonotechnics, as 0D explains it in *Cyberpositive*, is to “implement what is forbidden [via] the power of infection and contagion,” exploring “alternative spaces, crossing over ... [and] migrating through alternative anomalies (0D, 1995, p.229). Such an aesthetic ritualized becoming/thinking-movement, as Deleuze and Guattari (1987) would have it, entails the construction of Bodies without Organs (BwOs)—ecstatically-charged bodies launched as navigational devices that are able to map the abstract currents that swirl at the intersections between bodies and the forces and virtualities that move across them. In their animistic construction of BwOs, members of 0D and *Plastique Fantastique* don masks, becoming six demon avatars that together preside over the ritualized creation of a green-skinned composite techno-animal, released into a dawn-lit city to potentiate, at the close of the performance, a new aesthetic digital-virtual ecosophic affordance. As in 0D’s prior work, the aesthetics of the digital/virtual, potentiated by a machinic animism, is mobilized here to effect “somatic voyages into transformative recoding practices” (1995, p. 229).

Early in *ATP* (1987), Deleuze and Guattari deliver a delirious ritualized lecture on schizoanalysis via a conceptual daemonic avatar, professor Challenger, in which they delineate a pedagogy of the uncanny that engages with a new kind of processual sensualism centered on a becoming-Earth. Creating circuits between virtual and material energies, as Deleuze and Guattari outline it here, involves immanentizing an uncanny, processual “philosophy of presence” that transversally binds together aesthesis, sorcery, science, objects and living beings, causal networks with substances, the universe, fate, and destiny (Grosz, 2017, p. 136). This, too, is the mode of ahuman aesthetic sublime figuration taking place in 0D’s work. In *Green Skeen*, as per *Syzygy/Catacomic*, conceptual personae are invoked in the manner of Deleuze and Guattari’s professor Challenger to enact a transversal optic/haptic ritual of insurrection that carries out a pedagogical thinking-movement. In carrying out

this movement, *Green Skeen*'s demon avatars incarnate invisible Anthropocene forces working through human/animal bodies: *Yue* (the catastrophic planetary and bodily implications of rare-earth metal extraction); *Fevveractal* (the non-separation of biological and technological forces); *Zahir* (the optics of attraction, warning, and camouflage); *Nanor/s5* (the embodied implications of molecular biology and quantum-scale engineering); *Eurnikern* (continuous cultural mutation as a result of leakage from biological, geological, and cosmic strata); and, *Husher* (time-traveling frequencies, trophic cascades, the proliferation of panic/future shock, and the geophysical impact of algorithmic flow driven capital). These demonic avatars work as BwOs; nesting becomings, durations, and stratums within one another, ritually pushing the conceptual stagnation of humanized reason into chaos and change. For *Deleuze and Guattari*, as Mark Fisher writes, demons and BwOs are part of a Gothic materialist project that combines sorcery and science in an operation "against stable identity, personality and subjectivity" (2001, p. 235). "What we encounter" in such a movement, as Deleuze (1994, p. 37) explains, "are the demons, the sign-bearers: powers of the leap, the interval, the intensive and the instant;" avatars that "operate in the intervals," leaping "over the barriers or the enclosures, thereby confounding the boundaries between properties (Fig. 6.2)."

Akin to African and Amazonian tricksters, *Green-Skeen*'s conceptual daemonic persona, like all mythical tricksters "poke, play with and shatter assumptions of origin and boundary" (Pelton, 1980, p. 105). As demons/tricksters, they represent the power to unsettle fixed identities by changing minds, manifesting as a coincidence of opposites, "characterizing the peculiar unity of the liminal; that which is neither this nor that, but both" (1980, p. 105). *Green Skeen* works its conceptual personae to instigate a speculative mode of pedagogy that makes contact with an abstract outside in order to immanentize the virtual and the actual, the human and the more-than-human. As the *Fevveractal* demon/avatar explains it in the video, *Green Skeen* draws its motive force from a place where "our own images of what it means to be human no longer hold ... where technology is no longer other to nature ... where binaries have long since been replaced by other stranger [and] complex patternings ... from a place where animals are, finally, seen for what they are: future beings." In such a manner, sublime aesthesis is made to enact both a mythic as well as a frictive counter-sorcery to the phantasmagoric telematic visuality of spectacular/hyperreal and anthropocentrically driven



Fig. 6.2 Orphan Drift, 2017, Husher Avatar (video still), GREEN SKEEN. single channel HD video collaboration with Plastique Fantastique. running time 45:00

technological society, using points of rupture as hooks on which to hang a kind of possibility space of future ahuman becoming, collapsing the so-called real and the virtual together, augmenting and even subtly altering the present as it summons a future audience that is appropriate and adequate to it. Movements of this kind, as O’Sullivan explains, involve “the production of a myth of some kind” ... a myth/ritual “that binds the holes,” created by points rupture in the present, propelling itself backwards into the mythic plane of the unconscious and forward “to an audience yet to come” (2016, p. 87). More pertinently, from the perspective of ahuman pedagogy, the encounters that such visibility mobilizes, create what Nathan Snaza (2020, p.124) calls “situations,” namely, “contact zones among many different kinds of entities, most of which are not human, that form the affective fields from which subjects emerge.”

EXOTICA IN THE MATRIX

Snaza (2020, p. 124) writes that “subjects (with identities) are not necessarily conscious of being suspended in and affected by ever-shifting

situations, in part because assemblages that generate Man as the over-representation of the human prime us to not attend to the affective participation of nonhumans and their animacies, even as our corporeal orientation in the world is modulated in and by this more-than-human situation.” In the video animation, *Miasma* (2018), made for the Res. Gallery’s Chrominance/Allembic project, 0D member Mer Roberts stages a ritualized situation that makes this affective suspension visible. Staging a reclamation and transmutation of Anthropocene ecocide narratives, *Miasma* takes place via a performative transformation of a damaged Anthropocene landscape. Inspired by failed water hyacinth terraforming experiments in Capetown’s Liesbeek river system, *Miasma* combines on-site filmed and LiDAR 3D scanned footage to capture and potentiate the vibrant nonhuman agency of a poisoned landscape, which is choreographed and made visible with digital processing tools (depth of field and After Effects filters, Google Deep Dream code as well as data-moshing). Spectral more-than-human agents are revealed at work in an urban waterway choked with dying blossoms and microbial mats. A swamp demon presides over the image-flow, ritualizing the opening of a xeno-communications channel between the body of the viewer and the dark and vibrant agential currents of a transforming Anthropocene landscape. Here, the entire work acts as a BwO—its zones, axes, and gradients shifting with flowing sensations like waves washing over the body of the viewer in a mutating mass of color, sound, and form that represent the shifting thermal forces of the landscape itself as well as the equivocal evolutionary affordances of visibility as a mode of apprehending and surviving in it (Fig. 6.3).

Machine-vision acts as a shadow operator in this work, conjuring a sublime expansive, tactile and fluid ahuman sensorium; its agency made manifest in the video as fractaline eyes that stare out from constantly shifting layers of screen space. Visually and sonically, water rushes continually, evoking “the encounter of the wave with Forces acting on the body” (Deleuze, 2003, p. 34). Squawking scavenging birds trawl the microbial and garbage mats, while their spectral counterparts constantly appear and disappear around the edges of the image frame, algorithmically deconstructed and reconfigured to produce a continual becoming of image. Beaked heads give way to four legs and a tail, the profile of a pulsating rhino appears on two legs, and lurking in the foaming liquid of the waterway, a large frog’s cranium morphs and erupts fluid and shuddering configurations of rodent, lizard, and bird while the presiding



Fig. 6.3 Orphan Drift, 2018, Synthetic (video still), MIASMA. single channel HD video for Chrominance, Alembic II at Res Gallery, London. running time 15:00

swamp demon continuously melts into and out of the amorphous ahuman image flow.

In the machine-visions landscape of *Miasma*, the production of human reality is completely opened to virtual nonhuman potential, creating liminal and vertiginous encounters with a materiality that extends far beyond the human. Here we encounter a play on what Murray Shanahan (2016) terms “conscious exotica”—nonhuman human-analogue intelligences (such as birds, mammal predators, cephalopods or even artificial memory-systems). In *Miasma*, as in other 0D works, demon avatars open machine interfaces as xeno-communications channels between the inside and the outside, between the human and the nonhuman, without differentiating between them. Instead, the ahuman communication flow is conceived of in terms of sensation; the spectral, affective, and informational layers of a material more-than-human landscape washing over different bodies and perceptual systems; a more-than-human mechanosphere, in which (non)conscious exotica are entangled within ecosystem flows of matter/energy. In the process, a techno-metabolic conversation between organic and artificial processes is initiated as a transversal flow of synthetic, biological, geological, cosmic forces. In

Miasma, the landscape as well as its creatures, spirits, and haecceities affect and are affected; exotic agential elements function as spectral pedagogical avatars, revealing an expansive, fluid affect-laden materiality nested within the virtual. This is a transversal pedagogical movement that learns the uncanny by detecting “the action of forces on the body” as well as “the intensive fact of the body” (Deleuze, 2003, p. 34) via the black mirror of the digital/virtual. In the process, strange afterlives are glimpsed in the ruins of the Anthropocene and contagion and morphogenesis are affected as more-than-human collaborative survival strategies in the (post)Anthropocene to come (Fig. 6.4).

The inhuman monsters and chimera produced via digital manipulation techniques, such as those employed by OD, mirror the uncanny displacements of the current anthropocentric technological disposition and take them radically elsewhere. This aesthetic movement of reinvention has continued in OD’s ongoing “*OctoAI*” research project launched in 2019. What if the algorithmic intelligences unscrambling, filtering, decrypting, refining, processing, and massaging data were modeled on cephalopod visual cognition? Could cephalopod consciousness serve as a template for addressing the paucity of human imagination and offer an alternative path

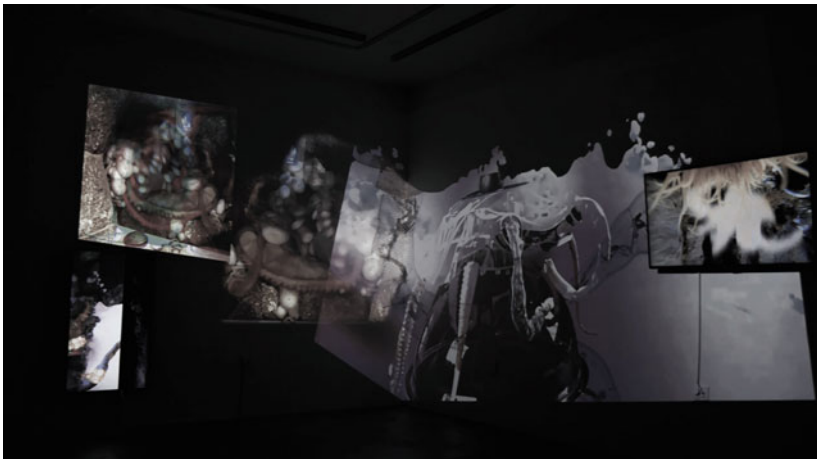


Fig. 6.4 Orphan Drift, 2019, *If AI were Cephalopod*. 4 channel HD video installation at Telematic Gallery San Francisco. running time 11:00

for machine and human learning? “*IF AI were Cephalopod*” (2019)—a four-screen installation made for San Francisco’s Telematic Gallery, and subsequently continued via a series of *Becoming Octopus Meditations* by Mer Roberts (2020), as well as an ongoing series of short visual “If AI” essays—explores such questions. Machine vision harnessed to the megapixel multi-tentacular screen of the octopus body enacts a sublime and uncanny aesthetic transversal movement or “gate-opening” between the anthropocentric Anthropocene and Donna Haraway’s (2016) conception of a more-than-human Chthulucene. Across the various iterations of the “*OctoAI*” project OD wonders what alliances chthonic nonhuman intelligences might make with machines. In “*IF AI were Cephalopod*” (2019), for instance, technogenesis is playfully imagined as not being affected between machines and humans, but between an evolving artificial intelligence and an octopus’s distributed consciousness, which responds with independently thinking iterations across eight arms of distinct yet co-evolving neural networks. Here, a tentacular avatar and voraciously intelligent predator perform a transversal gate opening between the technological and the mystical, the heterogenous and the singular, the human and the nonhuman. As with *Miasma*, the notion of conscious exotica is invoked only to be transformed via a haptic exploration of texture and affect that invoke Eve Sedgwick’s “array of perceptual data that includes repetition, but whose degree of organization hovers just below the level of shape or structure” (Sedgwick, 2003, p. 16). In OD’s *If AI* visual-textural situation, becoming-animal shape-shifts into a becoming fluid and becoming-imperceptible via the agency of an octopus-avatar that continually signals its intent via an affective language of chromatic signaling, skin texture variation, postures, and tentacular locomotion. In *If AI* this amorphous luminous demon explores a series of morphing virtual environments with questing electromagnetic and algorithmic tentacles, reaching out from the virtual into the material via laptop cameras, sensors, and a variety of smart appliances, moving across screens directly into the sensorium of viewers, evoking uncanny/sublime pedagogical affect-pairings of paranoia-pleasure and fear-sensuality as it generates an ahuman thinking-movement. As with *Miasma*, *Green Skeen*, and *Syzygy/Catacombs*, the threat of human extinction and ecological succession is paired with the promise of a radical symbiogenesis between humans and a more-than-human outside; an unholy transversal alliance or unnatural nuptial potentiated and made visible via the strange agency of animistic machine vision. In the process, a dynamically networked

mechanosphere—alive with dark and vibrant matters and active agents—is brought into focus. Machine-vision, potentiated in this way as machinic animism, calls us toward a pedagogy of the uncanny by mobilizing such contact zones of spectral encounter, making visible creative liminal zones of becoming and seeking out, as Keith Ansell Pearson (1997, p. 225) writes, “zones of indiscernibility in which the points that connect and separate things are no longer discernible.” This process of becoming imperceptible is akin to the archaic shaman or sorcerer’s journey into the *nagual*.

In *ATP* Deleuze and Guattari invoke and reappropriate the figure of Carlos Castaneda and his fictional pedagogue Don Juan to describe such journeys as the protocols of a pedagogical encounter with bewilderment, mobilized via a series of grapplings “in which becomings-molecular take over where becomings-animal leave off” (1987, p. 248). Their philosophy calls for a pedagogy of experimentation that touches base with the unknown; one that explores becomings, transformations, and shape-shiftings, invoking sensory bewilderment in order to disturb the reductive single-vision of the humanist project. Confronting the difficult to determine, the betweenness of things, the transversal movement that sweeps away the human self, such a pedagogical movement mobilizes a sublime aesthesis to draw attention to the fact that, as Deleuze & Guattari (1987) remind us, it is the sublimity of *this* world in all its ceaseless becoming and incomprehensibility that summons us to such a conceptual/virtual task. OD’s aesthetic rituals of insurrection conceive of this world as the *Earthrise* and *The Blue Marble* images reveal it to be: variegated, fluid, and fractaline in its more-than-human luminosity. Such an aesthetic/pedagogical movement defamiliarizes the dominant image-complex of the Anthropocene and its language of mechanical reproduction by defamiliarizing it and rendering it uncanny. Such *ostranie*, or making-strange, is the movement taken by Deleuze-Guattarian schizoanalysis, serving as a primer for an ahuman pedagogy that learns the uncanny by mobilizing the schizoid visual and haptic affordances of digitally-processed telescope and satellite images, micro and macroscopic renderings of inner, outer, fractaline and non-spaces, polyrhythmic audio-sonic experimentations, etc.—to generate an ethico-aesthetics of immanence that traverses the multiple entangled layerings of the more-than-human Anthropocene subject.

CONCLUSION: THE AHUMAN ART OF WONDER

Meg McLagan and Yates McKee (in Demos, 2015, p. 11) urge us to be attentive to the “politics of aesthetics” that is emergent from the “network of financial, institutional, discursive, and technological infrastructures and practices involved in the production, circulation, and reception of visual-cultural materials” that are both producing and reproducing the Anthropocene event. Simultaneously, as MacCormack and Gardener (2018, p. 1) note, there is a dire need to move beyond “anthropocentric modes of navigation” that never seem to leave the loop of the “sexed, raced, sexualised, economic, labouring human.” In the “language-twisting-twisting” work of OD, as well as in Lovelock and Margulis’ potentizing of NASAs satellite images, the dominant universalizing aesthetical politics of the Anthropocene is unsettled by means of a perceptual language that collapses boundaries via unnatural nuptials and rhizomatic movements. In OD’s work, machine interfaces are bidirectional, making complexity more tractable to the human sensorium, but also opening a xeno-communications channel between human and nonhuman perceptual systems. Such uncanny aesthetic navigational modes lure us into haunted virtual landscapes where divergent perceptual worlds converge, suggesting a form of virtual/material knowledge production that is mobile, nonlinear, and multilateral. Alive with fractaline swirling edges and indeterminate zones, this kind of thinking-movement conjures a mode of sublimity that undermines the dominant Anthropocene/anthropocentric narrative that continues to center “the human as its ultimate form of vision and destruction” (Emmelheinz, 2015, p. 141).

The optical and “signaletic soul and/or encoding of the machine is not peculiar to man,” but rather part of an array of “physico-chemical and organo-chemical assemblages” that access the mechanosphere (Guattari, 2013, p. 95). As Manuel De Landa (1997, n.p.) reminds us, “all spheres of reality, including geology, possess virtual morphogenetic capabilities and potentialities.” Virtual connective ligaments are transversally distributed through heterogenous registers and strata; a situation that OD’s mobilization of the digital-virtual makes copiously visible and visceral. The ecosophical aesthetics produced in OD’s machinic and minoritarian artistic/pedagogical praxis does not attempt to render the Anthropocene representationally—as in, for instance, the Anthropocene landscapes of artists like Edward Burtynsky. Instead, the pictorial space is pierced with a-signifying ruptures; uncanny animist situations that

agitate the field of vision and induce retinal trembling, constantly redistributing the relation between landscape and viewer. Their work suggests that pedagogically mobilizing the affordances of the virtual requires an acknowledgment of material vulnerability and negative capability (being at home in uncertainty). Machine-mediated optical bewilderment thus restores the human eye to its more-than-human materiality as a “jelly-like orb, a muscle capable of being stressed, strained, even injured, as opposed to a disincarnate, invulnerable perceptual apparatus” (Reynolds, 2002, n.p.).

Animist navigation tools—such as 0D’s deployment of shamanism’s optic/haptic “language-twisting-twisting”—remain the most efficacious and uncompromising methods for shattering the rationalist humanist “presumptions which are the foundations of the logic” that has set this multitemporal/multi-scalar apocalypse called the Anthropocene in motion (MacCormack, 2020, p. ix). What happens when we see *The Blue Marble* and *Earthrise* images in the shadowy yet material context of the Anthropocene event whose arrival they signalled? Are we filled with the smugness of *potestas*, or the sublime pleasurable fear of *potentia*? If anthropocentrism is “the inability to perceive otherwise than human” (MacCormack, 2020, p. 12) then mobilizing ahuman ecologicity involves echewing *potestas* (power and knowledge) for *potentia* (the desire to enter into relation with difference). Both minoritarian pedagogy and art function by mobilizing such affective virtualities. As I have demonstrated via the sublime aesthesis employed by 0D, mobilizing the daemonotechnics of the digital-virtual helps us shift the affordances of machine-vision in the direction of ecosophy, creating an optic/haptic identification with desire as “everything that exists before the opposition of subject and object” and difference as “the teeming flow of all things within nature as interactive and collective within themselves” (MacCormack, 2020, p. 25). For 0D, for Deleuze and Guattari, and for other ahuman pedagogical thinkers, “affect has both virtual and actual expressions” that are defined not only by what happens when bodies encounter other bodies, but also by “virtual expressions” of such encounters (Gardner & MacCormack, 2018, pp. 11–12). Rather than using machine-vision as an aesthetic tool to co-opt, colonize, tame and exploit the world, 0D suggests that we can mobilize it to enact an undomesticated sublime, experiencing the pleasurable horror of mapping the transversal connections between all the subjectivities and nodes of relation in the web of entanglement that comprises the more-than-human swirl. Such a journey

beyond the human, away from conceptions of unified subject positions, requires a literal twisting of focus and a refocusing of the gaze. Mobilizing the ahuman affordances of machine-vision means shedding “our mechanist visions of the machine” (Guattari, 1995, p. 107). To get from the machine to the machinic, from the human to the ahuman, from the blue marble to Gaia, will require the mobilization of a new aesthetic; a sense of “machinic becoming” that “promotes a conception”—an ecologicity – “which encompasses all of the aspects [of the machine]: technological, biological, informatic, social, theoretical, and aesthetic” (Guattari, 1995, p. 107). As I have demonstrated, this is a movement of the undomesticated sublime; an ahuman optics and haptics of minoritarian becoming (from the molar to the molecular), “a process of aesthetic expansion that puts the human into contact with other bodies or haecceities on a smooth place of consistency where no one subjectivity takes precedence ... but where powers, affects and intensities are compressed in the transition between multiplicities” (Magearu, 2020, p. 256). This is a spectral movement in which the human perceptual system encounters the lineaments of a more-than-human materiality; an encounter of aesthetic slippage where the anthropocentric image is transformed by the virtual production of new forms of vitality. In this movement, machine vision mediates an “in between of worlds,” opening up “mythical dimensions” that are both intimate and expansive, becoming “a tool for developing new perceptual and aesthetic languages that no longer privilege the human” (Levitt, 2018, p. 5).

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Transversing Digi-Spaces and Newcomer Youth Encounters: Considering a Minoritarian Politics Online

Adriana Boffa

RECONSIDERING MINORITY COMMUNITIES

Manners of Being

“The emphasis is no longer placed on Being...it is placed on the manner of being” (Guattari [1992] 2006, 109). Drawing on Félix Guattari’s words, the question that guides this investigation is: “How might one talk about subjectivity and, for this research in particular, the question surrounding newcomer|immigrant (N|I) subjectivity in the contemporary technocapitalist (Suarez-Villa 2009) era?” That is, a capitalism that is “heavily grounded on corporate power and its exploitation of technological creativity” (3). Collectively, humans are sensing and experiencing a shift in their “manner of being” upon this planet (Guattari [1992]

A. Boffa (✉)

Department of Secondary of Education, University of Alberta, Edmonton, AB,
Canada

e-mail: boffa@ualberta.ca

2006). As a result of the ongoing pandemic (COVID-19), digital and online communication has entrenched itself as a way of being, rather than existing as a mere technological tool. Online is no longer conceptualized as a separate world from the “real” world. Instead, it is entangled with everyday life as embodied identities (Schultze 2014) and “fully integrated into the offline life” (Taylor and Pitman 2013, 4), all of which complicates how the digital realm is to be understood and approached. Although the digi-sphere is also conceptualized, particularly in educational spaces, as a liberatory space defined by flexible borders, interactivity and user-friendliness, the online world is nevertheless a space controlled and standardized through specific means and ends. This is especially the case for newcomer and immigrant (N|I) youth who connect with digital media spaces on a daily basis.

While these digi-spaces and social platforms may simultaneously provide a sense of community and connectivity with the world, both on and offline, they concurrently standardize images of who or what N|I ought to be, what they might want, where they might be, and/or what they ought to do as individuals and online users. N|I youth subjectivity is continuously affected and impacted by the imperceptible, yet very real and intensive flows of influence or *desires* (i.e., intensities that modify) that might act on their digital bodies in the digi-spaces they navigate (Deleuze and Guattari [1980] 1987; [1972] 2009). Given this situation, the major pedagogical question brought forward is: *where and how, if at all, might youth develop “counter responses” in digital spaces given current educational transformations?*

With this question in mind, this research intersects with the work of Gilles Deleuze and Félix Guattari ([1975] 1986; [1980] 1987; [1972] 2009), in order to transverse, contemplate, and map digi-spaces. It focuses primarily on TikTok as a social media space and platform, and attends to the desires, that is, to the intensities that modulate, code, categorize, consume, and modify a subjectivity, which flow through and between its innumerable, often unseen and yet-to-be created niches. As a transversal project, the attempt is to bridge and transverse (Guattari [1992] 2006) disparate concepts and ideas to open up thought and opportunities for “becoming-with” as a work of public pedagogy (jagodzinski 2014). According to Genosko (2002), channeling Guattari ([1992] 2006), a transversal project works to establish new organizations (groups or spaces) and to access new media (modes of communication), allowing opportunities for “resingularization” by opening up new spaces

of connection to others (91). Transversality functions to understand the relations between pedagogical, educational, and socio-political forces, and is a tool to map N|I youth place|making in digital online spaces and beyond.

A Note on Newcomer/s

The term “newcomer” is multilayered in its use, complex in its meaning and approach, and comes fraught with complications. Newcomer, as a term, is laden with connotations and assumptions regarding those individuals and collectives for which the term has been assigned. Youth arriving to Canada and into educational spaces, for instance, find that they are defined by their “new immigrant” status (Selimos and Daniel 2017, 92). For those who carry the burden of the term “newcomer”, it can mean never truly belonging as they are considered “new” and arriving to a place (see Fig. 7.1).

In this social media example, Rashima Shariff is referring to the troublesome use of newcomer within the Social Studies K-6 Curriculum rewrite, *NewLearnAlberta* (2021) draft, that has little regard for the complexity of immigrant experiences in Canada, such as treating immigrant communities as monolithic (Banting and Kymlicka 2010) conflating European settler communities with immigrant settler communities. For those who impose and use the term, most often governmental and educational agencies, non-for-profit organizations, academics, and educators, the use of newcomer can mean a way of distancing belonging, permanence, and forms of “Othering,” as exemplified in the Alberta curriculum draft. What the draft demonstrates is how important the affects|effects of such a document can have upon the broader national Canadian aesthetic.

It is not solely about what a newcomer *is*—how they are defined by hegemonic forces—but, what the term newcomer can *do*: the affects|effects it can produce on those who come into contact with them. The perceptions produced from the oversimplification and denigration of “newcomer” (and “immigrant”) can have a damaging impact on how N|I understand and place themselves within the space of schools and the community at large (Selimos and Daniel 2017). How a nation feels toward immigrants and immigration has an enormous impact on the experience of acculturation. The experience of discrimination, according to Berry and Hou (2017), is the “single most” important factor that negatively impacts immigrant youths’ well-being, influencing belonging and

Fig. 7.1 Rishma Shariff, 2021, @rishmashariff (with permission). Voicing her critique of the term “newcomer” in the *NewLearnAlberta* Curriculum 2021 draft



attachment to place (30). Where is the space for N|I voice within the curriculum document, classroom, and society? The aim of this work is to disturb and create spaces to transform how newcomers (and immigrants) are interacted with, both as a categorical term, as well as considering “real” material impacts on N|I youth in connection with individual, local, and the collective national aesthetic—that is, what is “experienced together” as “nation-state-territory” (Shields 2014, 189–190)—to assist with place|making for N|I youth in the spaces they navigate.

A Collective Aesthetic

According to Rob Shields (2014), a Nation’s collective experiences often include visual and cultural representations expressed as images, song, literature, and the like. They also include markers of place and nature, which

are often not heard or seen, what Shields refers to as “visual silences.” Such visual silences are purged or privileged in a nation’s “social drama,” that is then reflected and perpetuated politically and ideologically in the national aesthetic through various media (190). For instance, anti-immigration rhetoric makes its way into a political party platform in times of election or on an individual’s social media thread.

Drawing from the philosophy of Deleuze and Proust, Shields (2014) works with virtualities, or what he labels *visualicities*. These are the forces that cannot be seen, yet are real and have an impact upon the world, where the visual is understood alongside the invisible, stating that a “visualicity draws attention to the operational processes, techniques, and technologies that support visibility and invisibility in their everyday senses” (190). Using the example of digital media as the “visual apparatus,” for instance, visualicities would emphasize the feedback from human and inhuman (e.g., bots) users, for instance, likes, comments, reposts, duets, or algorithmic recommendations), as the means of visibility that renders the invisible visible: subjectivity formation, production, and connection with others. In the case of the invisible intangibles of what a nation, ethnicity or community might produce in-real-life versus the online world are yet-to-be-known through their affects|effects, however, their impacts will vary. Whatever the “visual apparatus” is that brings forth the visualicities, its significance is to “articulate the unseeable with the seen” allowing us to see what is “easily overlooked” or rendered “invisible.” In spite of being focused on what constitutes a “nation-state-territory” (Shields 2014, 190), the aim of this research is to consider how N|Is (as a collective force) might approach a national aesthetic; specifically, how they might position themselves in direct relation to a nation-state-territory aesthetic to be visible, heard, and co-create impact.

For such a project, newcomers are understood as *both/and, and*. Newcomers are representative of a group of people who are new to a space and place both on and offline. Newcomers are migrants crossing borders and *transversing* time and space such that they are simultaneously constructing and bridging connections from self|place to other places and beings as “diasporic subjects” (Awan 2016). This process is what Guattari ([1992] 2006) might call building “transversal bridges” (109). Newcomers are also immigrants that have arrived at a place from elsewhere. The newcomer can be considered as a philosophical construct and concept to “think with” in ways that invoke a “minoritarian sense

of becoming” to challenge its current categorization (Deleuze and Guattari [1980] 1987). As it conjoins with transformations of place and its subjective expressions, such a minoritarian politics might be expressed across modes of becoming-other/digital/N|I. The intersections of N|I occupy any number of positions in their relation to immigrants. An immigrant, at one point in time was a newcomer and can potentially become a newcomer once again.

What Can a Minoritarian Politics Do?

According to Claire Colebrook (2002), “all effective politics is a becoming-minoritarian, not appealing to who we are but to what we might become” (xxv). While a minoritarian politics may begin as an expression of a people, it is focused on the creation of a people to come (Deleuze and Guattari, [1975] 1986). Thinking the ontological, political, and ethical question of what N|I youth *might become* when connected with the digital world requires an effective consideration of a N|I minoritarian politics on and offline. When connected with the concept of the minoritarian, to observe and expose majoritarian forces online, one could analyze how digital spaces affect|effect N|I subjectivity for the consideration of a becoming-other. Deleuze and Guattari ([1980] 1987) state: “it is important not to confuse ‘minoritarian,’ as a becoming or process, with a ‘minority,’ as an aggregate or a state” (291). Immigrants may be minorities under certain contexts, however that does not make what they do minoritarian. While in the digi-sphere N|I youth, as diasporic digital subjects, may transform themselves by reconfiguring or reterritorializing themselves as a minority by assuming a performative state, like taking on other identifiers on TikTok, for example, #third-culturekid. “Becoming,” for Deleuze and Guattari, means to become “deterritorialized” (291), a de-subjectification of identity. A deterritorialization is a break or a “diassembling” (Deleuze and Guattari [1975] 1986) from the territory a coded molar subject where it is then allowed to seek connections beyond itself. In such a dissipation, often produced by small intensive actions, can create an opening to produce new relations or modes of thinking—becomings (Colebrook 2002). For N|I subjects online, as content creators on platforms such as TikTok, it is about their ability and potential to produce connections beyond themselves through

online productions. Becoming-minoritarian for a N|I would be a deterritorialization from one's "molar" or "major" identity, language, gender, given qualifier or code online (291).

When considering a politics of the minoritarian, Deleuze and Guattari ([1980] 1987) are advancing a politics of difference that works against the majority, which they define as "the determination [or expression] of a standard," (291). This standard expression is inclusive of the smallest numbers within that group (the minority), to which all that are unlike them will adhere. As such, holding a position or state of privilege or "domination" (291). White cis-gender men are often considered the majority because they are perceived as the standard representatives of society, *not* because they are necessarily the most in number. In social media spaces, what the expression of the standard *is*, will be constantly changing and will depend on a variety of factors, such as the platform in use, the time engaged, the algorithms manipulating space, its users, and content. The minority or minoritarian group, on the other hand, is the one with "no grounding standard." It mobilizes its identity with each new member (Colebrook 2002, xxv). The minoritarian subjectivity of Black, Indigenous, and People of Color (BIPOC) is one that is often questioning and pushing against if "POC" should be used or incorporated, even if this is an assigned moniker adopted to describe themselves.

The minority are considered "different from...the constant...by nature and regardless of number," and are always seeking to deviate from the standard that is being inscribed upon them and in the process, perhaps, transform that standard (Deleuze and Guattari [1980] 1987, 105). The minority, as such, exists in relation to the majority and ceases to be a minority if it has found a universal expression, at which point it becomes "majoritarian" (Deleuze and Guattari [1980] 1987). There are content creators, on Twitter and on Tiktok, like Kamala and Hanna ("Who's gonna join me", #diversevoices #blacklivesmatter #learnontiktok, 59K likes, 2554 comments) that wish to change "POC" to People of the Global Majority (POGM). All content creator names have been anonymized and selected Tiktok profile information is used for context. For instance, Kamala's post instigated a Tik Tok post for Hanna, which then was stitched by a tiktoker named Erik ("All in favor?" #stich with Hanna, #council #funny, #fyp, 70.1K likes, 7224 comments). Both had over 130,000 views and approximately 129,000 likes and 9800 comments, displaying the beginnings of a trend. However,

will this minoritarian expression against the term “BIPOC,” or rather BIPOGM, catch on and become the new norm?

As Deleuze and Guattari ([1980] 1987) state, “becomings are minoritarian; all becoming is a becoming-minoritarian” (291). When thinking about the N|I subject online, one might ask: What is the standard discourse or image of the N|I youth that is being categorized or coded based upon the platform they are *engaging with*, such as TikTok? The N|I (or anyone) who connects with the TikTok algorithms, as one of the potential codifying forces, are the minority that are constantly trying to deviate from the imposed standard of the platform.

Considering a Minoritarian-Becoming

A minoritarian-becoming must include everyone, even those who are part of the majority. To consider becoming-minoritarian, one needs to understand what can go on to instigate a becoming of deterritorialization. As a pedagogical move, let us contemplate the space of the mosh-pit at a rock concert as a transversal thought experiment. This space is a chaotic place, full of sweaty, overexcited bodies crashing into each other, but what is really going on? Mosh-pits are spaces of affect. Affects are the preconscious, non-reflexive, and non-articulated intensities or forces that, according to Clough (2008), have the ability to “augmen[t] or diminis[h] a body’s capacity to act” when in connection with, and activated by, someone or something else (1; see also Clough 2016; Massumi 2002; Deleuze [1970] 1988). This silent activation means that one is often unaware that they have been affected until it is made conscious in their minds later on. The mosh-pit is a visceral experience where one gets pulled and moved by the energy—music—pulsating around them. Much like a digi-space, like TikTok, can be or could potentially be. Why? The mosh-pit is about “losing” one’s self to the music, to the moment, and to the pit (Wilcha 2002).

One is influenced by many variables and by adjusting those variables, one can and will vary the potential outcomes. Once one is in the middle of a mosh-pit, you, as a sole identity, would drop away and you become but a part of the assemblage (a greater whole), an assemblage of “haecceities” (Deleuze and Guattari [1980] 1987, 261) where the “body is defined by...the sum total of the material elements belonging to it under given relations of movement and rest, speed and slowness...the sum total of the intensive affects it is capable of at a given power or degree of

potential” (260). With every push, with every collision, with every flash of strobe light, and with every electric riff that invades your senses you are “becoming-mosh-pit.” Affect is what determines your next move in the pit and whether or not you can navigate that space effectively without being crushed or severely hurt. Online, with every neurological or personal connection made, with every *click*, with every *follow*, or chat *response*, imagine a potential *becoming-minoritarian*. In generating these affective moments, one is breaking continuity of the narrative and bringing forth that which was never thought of or experienced before. It is in these moments of excess where one interacts with these intensities and become with them (Massumi 2002). These intensities work at a molecular or micro level upon the body—digital or otherwise. They vary from psychoanalytic affects in that they are “pre-personal” or pre-individual and are not based on a pre-given image, identity, or subject. Affects, however, produce subjects, or, what Clough (2008) calls biomediated bodies—bodies with the capability of giving form to affective responses.

What is at stake then: the user, the platform, the digital content, the “clicks,” and the affects produced in the various social spaces where users engage and post, present the potential emergence for becoming-digital or becoming-something else. In the case of N|I youth, it is in the counter-stories they tell to incite a “becoming-N|I” that provides such a potential. Creating a minoritarian-becoming for all may seem paradoxical, could seem undesirable in some cases. Eugene Holland (2013) explains in regards to Deleuze and Guattari’s work with a major and minor language in their book on Kafka: “No one conforms perfectly to the standard, and in fact everyone deviates from it to some extent- so that, paradoxically enough, becoming-minoritarian becomes the new universal” (Holland 2013, 81). There is a difference between being in the minority, where one is not part of the standard, versus becoming-minoritarian where there is a molecular transformation that affects both the minority and the majority. When thinking with the N|I in the digital realm, one might ask what sort of “collisions” and transformations that affects both the minority and the majority might occur? To consider what might become, this research considers how N|I youth could position themselves within these spaces and transverse them *differently*.

DIGI-SPACES AND N|I SUBJECTIVITIES

What Can a Digi-Space Do?

As humans, we collectively exist in a world that is everyday more resistant to welcoming new immigrants. Whether through the exclusionary logic of State borders or through appeals to a particular Nation's aesthetic, the place of newcomers is a contested territory. What has been witnessed over the last ten years is a wave of anti-immigration sentiment growing in the US, Canada, and in some regions of Europe exacerbated by the election of Donald Trump in 2016 (Hooghe and Dassonneville 2018; Kern 2018). This has been amplified by climate change catastrophes around the globe. The world witnessed the extreme measures taken during Donald Trump's presidency to keep immigrants out, such as decreasing admissions into the US, in particular from Muslim and Arab countries, Mexico, and Central America, increasing detentions at their border, and, finally, using harsh rhetoric to describe Mexican or Central American migrants as thugs, drunks, or rapists to fuel xenophobic and anti-immigration sentiments among his voter base. This is demonstrated through Trump's many statements spoken during his political speeches, then distributed among various media platforms, from news networks to Twitter rants (Scott 2019).

In the Canadian context, similar xenophobic, racist, and anti-immigrant rhetoric is used by its various leaders to mobilize or rile up their base, and is then echoed in right-wing media further perpetuating damaging perceptions for N|I and marginalized communities (Domise 2019; Fírtová 2021; Levitz 2019). For example, this was experienced in both the US and Canada with Donald Trump's and other Conservative Party leaders' harmful description of the Coronavirus leading to the rise of anti-Asian hate crimes across North America (Reja 2021). The words and actions of leaders have direct and indirect impacts on the perceptions of individuals and, consequently, have direct and indirect effects on N|I youth lives.

Taking the notion of aesthetic immaterial capture, as *visualicities*, into the material realm, such as digital social spaces like TikTok, and then, thinking what representational forces might physically *do* for binding a subject to a space that is not of their own making, such as being sorted into TikTok niches based on race or ethnicity (Mellor 2020; Chen 2021), this research wonders how place|making might occur for those who have been displaced both on and offline. For educators and

all who work with youth or young adults who are being co-opted, consumed, and transformed by the forces of advanced techno-neoliberal capitalism and digital media, such a problematic demands urgency. For N|I who are specifically affected, captured, and impacted by hurtful representational forces in curriculum, over-coded media imagery and audio, and by the harmful rhetoric in the socio-digital-political realm that can emerge from National and global tensions, such urgency is multiplied. Digital and “virtual” media spaces can produce misguided perceptions, resulting in unexpected and unwanted “real world” effects. These incongruent perceptions can emerge from an array of online productions, such as memes, rhetoric experienced on platform comment boards, timelines, or “Stories,” to name a few. Such actions, intended or not, can create unbearable consequences for youth in Canadian educational spaces (Gaztambide-Fernández and Guerrero 2011).

Digi-Spaces as Social Machines

To think with the online Deleuze and Guattari’s ([1980] 1987) conceptualization of assemblage and machine theory is engaged with as a conceptual tool. This helps to “disentangle and render visible constitutive threads” of reality as they are perceived, sensed, or experienced by a person or thing (Buchanan 2014, 126). In other words, one can observe the various enunciations or expressions by users—their posts, comments, challenges, and hashtag movements. An assemblage or “machinic assemblages” (Deleuze and Guattari [1980] 1987, 71) are the planes or territories upon which an expression is organized or composed. *Digi-spaces*, in this case, are the territories where N|I youth are being composed, both the digital realm and N|I youth machinically acting by connecting with one another to produce “something” through their encounters. Assemblages are inherently social, connective, are not produced in isolation, and hence, are immanent to the desires (intensities/affects) that flow through them. Assemblages, as such, have to do with the various technical, capitalist, and desiring machines and how their “components are arranged in relation to each other” as they do not act alone (Harper and Savat 2016, 17). Technologies, therefore, are not be considered in isolation, rather examined within the social assemblages they find themselves in: if one connects a smartphone, a social media platform and its users, a N|I subject, capitalism, a nation-state, and ethno-cultural markers as separate

machines, it may be possible to examine and diagram a variety of enunciations or expressions. The complexity of this endeavor aside, it is important to note that such a diagram is not representative but generative of the movement being actualized.

The above listed machines are each inherently social as they are reaching beyond themselves; they are connective, not produced in isolation from one another, yet they can work independently from one another, and while also in relation with another can work to produce something new or different (Buchanan 2014). One cannot predict the outcome of an assemblage, let alone judge whether it will be helpful or harmful. Janelle Watson (2012) makes the point: “the technology itself...is less important than the subjective and social mutations that go with it” (315). On the one hand, the abovementioned connective forces can come together to produce a racialized or marginalized N|I subject in the digi-sphere and beyond, wherein racist comments are made on a N|I’s thread or they are shadow banned from TikTok. The latter was the case for a tiktoker by the name of Sasho (“#@tiktok do better wtf,” #racism#hatespeech#asian, 399.8K followers, 27.7M likes) who spoke against anti-Asian hate on the platform and was reported for it. Conversely, the same forces can come together to produce a collective movement that extends beyond the N|I’s subject, taking their expressions beyond their expectations. These would be collective movements, such as those beginning with TikTok’s *duets and stitches*, which can become larger causes or hashtag challenges going viral and resulting in-real-life actions. The most recent exemplars being #BlackLivesMatter and #TulsaFlop (Solender 2020).

Media Wounds and Affective Productions

Social media and digital technology are a pervasive part of our lives, and its many affects|effects cannot be ignored since they are intimately tied to the ways in which youth locate and create place for themselves within the world in which they live. Our digital selves are so enmeshed with our everyday selves that it complexifies notions of space and place online, as well as identity formations. As such, Schultze (2014) argues against a representational engagement with an online identity, since it fails to grasp the complexity of experiences that contemporary new media users have in the virtual realm; this requires a different approach of engagement *with*.

Working with subjectivity requires an examination as how to engage individuals *in situ* (online), *as singularities*, in connection with others, and the world around them. This always makes the question of subjectivity a political and ethical question (Deleuze [1990] 1995).

Traumatic Impacts or Wounds that Cut

What can new media technology *do* for reconstituting a N|I subjectivity and for opening up space for a *becoming-other*? One such affect|effect is that of an imposed trauma. The intention here is not to fetishize or disrespect those who have been effected by any of the traumatic practices or experiences induced by migration, especially since the ways trauma has been engaged with, both in psychoanalysis and in the digital realm, has become problematic (Levine 2014). According to Levine, the term trauma is complex to define since it has been constructed over the years from diverse forms of usage across differing domains of psychology and psychoanalytic theories. In addition, it is difficult to unite or define a traumatic experience, there are, however, some commonalities. First, there exist an “overwhelming” of the nervous system or sense of helplessness in the individual. Second, trauma is an individual, “context dependent and highly subjective” experience even though many humans can experience similar events, such as war, (sexual) assault, or diaspora (Levine 2014, 215). Finally, experiences are varied and cannot be spoken of generically. As observed by Anna Freud in 1967, and further explained by Levine (2014), the term, *trauma*, is in “danger of being emptied of meaning through overuse and overextension” (215). Levine also explains that the confusion behind trauma’s meaning stems from the various contexts of use, connotations, and differences in meaning. This phenomenon becomes particularly apparent on TikTok in the “#MentalHealthTikTok” niche, where the overextension and overuse of “trauma” as a term is a common occurrence. This research does not seek to engage with the N|I trauma itself, although it is a part of a N|I subjectivity. Instead, it engages with the concept of *trauma*, in a non-psychoanalytic definition, to think through the affects|effects of desires upon the spaces they flow through.

With this in mind, trauma is thought of *as media affects*. Digital media technology, according to Clough (2016), is a medium that transmits a “unique form of trauma” that has an impact upon subjectivity and the milieu one can inhabit (75). In her article, *Trauma Expanded/Aesthetics Expanded*, Clough is building upon Marshall McLuhan’s (see McLuhan

1994) notion that new media has a violent and overly stimulating effect on the human sensory and nervous system, and, as such, trauma acts in a similar fashion to affect. While trauma can conjure up negative connotations and reactions, especially for those who are contending with, healing from, or have experienced the effects of displacement, it can be thought of as creating an impact—visible or not—on a subjectivity. The Sanskrit etymology of the word trauma (2021), “turaḥ,” is “wounded hurt” (n.p.). Digital media are capable of “wounding” a subject, which might be understood as a rupture or opening, for affects to stimulate and act upon the world, and all living or non-living things within it. Employing the concept of the wound as an effect that occurs at the surface, and not a *cause*, is one that has been grappled with by the Stoics, as a philosophy, and carried forward by Deleuze ([1969] 1990) in *The Logic of Sense*, as an *event* or cut in time. Jack Reynolds (2007) explains the connection Deleuze makes between the wound and the event in his article, *Wounds and Scars: Deleuze on the Time and Ethics of the Event*:

Deleuze treats the event as synonymous with the wound, the wound is both temporal and transcendental, rather than an empirical event that happens. For him, the event never actually happens or is present; it is always that which has already happened, or is going to happen. (145)

Colebrook (2002) further explains Deleuze’s event as a confrontation that allows for perceptions from the past to “cut” into the present, showing us time’s potentiality; its movement from the virtual—as the unthought of forces or that which cannot be seen—to the actual—real everyday life. One such example is hearing a song from one’s childhood in a coffee shop and deciding to listen to it on your digital streaming service on your phone utilizing Spotify, and then sharing it on your Twitter account, which then gets “liked” and retweeted or cross-posted to another platform, then played by someone else on their Bluetooth speaker in their home, which then might transport one to a time and place long ago and they might weep for a memory or love long-lost, then prompting one to hug their kids a little longer that evening—thus, pulling from the virtual past to the actual then back to the virtual, then actual and, perhaps, to the virtual again, and so on. This to-and-fro between actual|virtual is not accidental, as the event is always so. According to Deleuze, as explained by Reynolds (2007), this conception of the event builds upon the Stoic maxim “my wound existed before me, I was born to embody it.” This

form of a wound is the explication of the effect without cause or the expression that is untouched and which “does not obey the logic of anticipation,” as the ticklish individual feels the tickle before it actually happens and anticipates the action. Reynolds, therefore, states, “it is the future and the past that wound us; that is the time of the event,” thus, it is an ethic which considers that which is not embodied, which is the virtual wound: as an embodiment of affects, intensities, forces, desires (149).

Media is not limited to the digital-technological realm that one might imagine and, as such, also includes material objects found in nature, in a classroom or occupied place, such as artifacts or texts. Clough (2016) states that “media is extended to various platforms—organic, inorganic, chemical, and neurochemical” (78). As such, she emphasizes the need to rethink media technology and its trauma (or traumatic effects) by looking into how they “can extend matter or intervene in matter’s materializing itself” (76). Clough speaks to the importance of including intensities into what constitutes media. In the educational context, it is important to consider how digital technologies and digital media have effectively, and affectively, traumatized, or opened up the spaces individuals inhabit in the form of intervention, by external or outside forces such as social media, by way of manifestations of subjectivity through creative or non-creative productions, by conceptualizations of knowing through processes of subjectification, and by potential creation of future learning and knowledge or social spaces as referred to by Watson (2012) as “portable homelands.” These portable homelands are also conceptualized as “existential territories” by Guattari ([1992] 2006; see also Guattari and Rolnik 2008). Such potential ruptures as wounds or traumas working upon the online digital subject can be carried forth into offline spaces in a manner that seeks to transform their openings into expressions of connection with other places and individuals, as place|making.

Returning to the workings of Levine (2014), a psychoanalytic trauma is seen to foreclose space|places where the subject becomes cut-off from connections, whereas for this research, trauma is seen to cut open and rupture spaces for potential becomings and connections. Just how these “traumatic” expressions are connected with are determined by those who interact with them, and therefore are connections that cannot necessarily be foreseen or planned. These social and “portable” spaces are not tied to any one individual’s ethnicity, place of origin, or any geographical location. Instead, they are spaces reinventing and reconstituting a subjectivity—collective or individual (Watson 2012; Guattari [1992] 2006).

When speaking of a collective in relation to a subjectivity, Guattari ([1992] 2006) is referring to “the sense of a multiplicity that deploys itself...beyond the individual” in the realm of the social (9). That is, Guattari is referring to the collective enunciations or becomings that are a part of an immanent formation of collective desires that come together in a space or existential territory.

Watson (2012), expanding on Guattari, maintains that subjectivity needs territory to survive, yet such territories need not be tied to a geographical location. An existential territory might include digital media spaces of today, or the digi-spaces of digital classrooms or social media platforms like TikTok, Twitter, Instagram, and Second Life. These singularities as manifestations, existential territories, and collective enunciations are not limited to an individual, collective, or even a human becoming—they can be a-signifying and not necessarily involuted with the conscious, nonconscious, or unconscious (Guattari [1992] 2006). Existential productions can be in the form of images, bodily reactions, data entries, or machine communication including, for instance, computers talking to one another. On TikTok, specifically, I examine just such potential—yet-to-be determined—collective or individual aesthetic productions, interactions, modifications, negotiations, and experiences in the digi-sphere as experienced by N|I youth in assemblage with other human, nonhuman, inhuman bodies as forces in that space.

TIKTOK—A CASE *DESIRE* ANALYSIS

This section outlines a case *desire* analysis of collected research for a dissertation study, *Digi-Spaces and Newcomer Youth Encounters: Considerations for Place|Making in Educational Spaces* (Boffa 2022), that began in February 2020 of the user-generated content space and video streaming platform known as TikTok—created by Bytedance in 2016 (Zhao 2021). As a desire-infused analysis, it intersects schizoanalytic philosophy (Deleuze and Guattari [1980] 1987; [1972] 2009) with virtual online ethnographic observations that incorporate techno-netnographic techniques for online research (Kozinets et al. 2018; Kien 2008, 2009; Sandlin 2007; Fenton and Procter 2019). As an active observer-user and non-content creator, I immersed myself fully into the experience as a tiktokker to engage with and collect user enunciations.

Due to the limitations of space, the research findings cannot be fully explicated. These include a deep-dive into TikTok’s history, politics, business practices, and algorithmic intricacies. In addition to a discussion of TikTok as an example of a digi-space and desiring machine. But that will be left aside as well. Specifically, the case analysis mapped the ways in which desires flowed through TikTok in order to standardize and constrict users; the desires of users-content creators that would run counter to TikTok’s algorithm; and how desires were expressed as place. This remaining section, is a synopsis of what N|I youth were able to do in these spaces from observations and gathered expressions. Following this short analysis, I return to the question, *do youth desires translate into a minoritarian politics online|offline?*

Desires That Standardize

TikTok, as a platform, evolved in use after the pandemic hit in March of 2020. Since then, TikTok became a magnet for users of all ages and with corporate interests vying for ways to “activate” youth, and anyone on the platform, for consumption and monetization (Dolliver 2019, 9; Williamson 2019). TikTok became a new frontier looking to be conquered by most and a space to try out new ideas for all. TikTok, as a business machine, works with and through the desires of an established money market and neo-liberal political system that works through the machines of affective labor capitalism—i.e., an affect and user-driven algorithmic data-harvesting system (Suarez-Villa 2009; Andrejevic 2013; Clough 2008; Bakir and McStay 2020).

The forces of capitalism occupy an enormous and pervasive presence online; they need to be acknowledged and understood. Specifically, as affects—as wounds (Deleuze [1969] 1990), *traumas* (Clough 2016) or *visualities* (Shields 2014)—that cut into the various digi-spaces from the virtual that can have profound impacts on youth who might spend extended periods of time online. Deleuze’s ([1990] 1992) *Postscript on the Societies of Control*, which adumbrates the full-blown online digital world, maintains that “individuals have become ‘dividuals’, and masses, samples, data, markets, or ‘banks’” (5). It is up to those who are caught in the “telos” or “coils” of the corporate digital systems to discover “what they’re being made to serve,” thus, discovering different, and creative, ways of being and thinking within these systems of control (7).

As a social machine (Holland 2013), capitalism functions to strip away individuals “intrinsic values” such as their identity or creativity, expressed through desires, since capitalism is unable to code everyone the same, individual desired preferences must be somehow managed. Capitalism “replaces it [desire] with strictly quantitative, monetary value.” It seeks to commodify the individual for consumption. In the moment of stripping away one’s intrinsic value, capitalism simultaneously frees the individual, deterritorializing them away from “social codes” (7), such as an imposed socio-ethno-cultural-racial identity, a composed subjectivity, if only momentarily. Once deterritorialized from the social code, media platforms have the potential of catering to select individuals, as if they are not being re-captured by capital or the forces of consumption, leaving them free to *become* something or someone else. This process of capture and re-capture, or movement of flows are termed by Deleuze and Guattari ([1972] 2009) as a *deterritorialisation-reterritorialisation* of desires.

In the digital realm, technocapitalism manifests differently than in everyday life. According to Luis Suarez-Villa (2009), corporatism, the power that business corporations hold over society, colonizes and degrades all who exist upon the planet—human society and nature—turning all the most precious qualities and resources into commodities. Suarez-Villa argues that this form of corporatism is not grounded in the technology, such as phones or computers, rather, it is embedded into the character of this type of corporatism and the authoritarian hold that it exerts over the technology and its overall design, especially the algorithm codes.

Activating the TikTok User-Creator

TikTok is an entity that morphs and adapts with every single user and impulses that it connects with. TikTok, as if in a relationship, engages the user by sharing everything that is fun about its world through 15 second to 10 minute videos that are made, and pushed, by content creators that are (mostly) “every day” individuals. Videos are funny, weird, and at times informative. They incorporate music samples, filters, quick edits; they may seem repetitive, and rely on meme culture. Users use hashtags and music “sounds” to upload, personalize, and trend their videos (Williamson 2019). TikTok allows you to feel like you are special, since no two feeds are the same (Matsakis 2020; Zhao 2021). According to Zhao (2021), the algorithm works on a multi-leveled and hierarchical

system of filtering to guarantee quality views and exposure for its users (Zhao 2021; Matsakis 2020; Klug et al. 2021). This, in large part, is what makes TikTok so addictive to users. It is an app that is dependent on an AI to distribute recommended content to users based on personalized collected data from them. It is an addictive combination that occurs between the algorithm and a user's passivity (Zhao 2021). On the one hand, users receive ready-made personalized feeds that are matched to their personalities, content labels, and environmental characteristics, while on the other hand their effort is being alleviated by the mechanistic ease of choice—just scroll and choose (Zhao 2021). This ease and willingness to be a passive user speaks to the notion of *interpassivity*, where users willingly give up their freedom and time, in exchange for ease of mind and use (Pfaller 2003; see also Savat 2010). From the beginning, as one interacts with the app by reacting to videos on their device of choice—be it Smartphone or laptop—on a potentially *hashtagged* post that comes across a user's "For You Page" (FYP), TikTok gets to know you *really* well.

It happens over time, since you keep going back due to the positive feedback loop that the algorithm creates for you (on your FYP) after sharing that same video with a larger group of users (Matsakis 2020; Zhao 2021). Suddenly, you are no longer unique and, then, it happens that this entity knows you in ways that most people do not. It feels comfortable, inviting, soothing, even reassuring, and, then, extremely frightening all at the same time. You are drawn in, hooked, and time spent with the app becomes irrelevant (Zhao 2021; Klug et al. 2021).

TikTok is shown to be manipulative (Klug et al. 2021) in its actions and without mental and behavioral awareness, it has the potential for harm. TikTok is an app of contradictions. As a platform, it is composed of different spaces—niches or "Toks." There exist spaces of belonging and of exclusion. Spaces of destruction and of creation. Spaces of solidarity and collaboration, and those of isolation. Spaces that include a range of all human and nonhuman emotions, and of emoting, and those that seek to void them altogether. That said, depending on how a user connects with it, as with any platform, it can also be a positive, connective, collaborative, engaging, creative, potentially lucrative, and even a self-affirming space.

Re|Directing and Transforming Algorithmic and Desiring Flows

What are the conditions needed in order for youth, specifically N|I youth, to create “counter-responses” and place, on TikTok and beyond? When thinking about TikTok and how some users are so willing to give into the ease of the experience and power of the algorithm (Zhao 2021), one might think that there might not be much room for re-singularization (Guattari [1992] 2006) given the power of the algorithm to code and filter a subject. As I have observed, there are those who are actively learning the algorithm in order to use it for their own gain, such as those in the Marketplace (Klug et al. 2021). There are users who suggest working with the algorithm, such as the #Breakthealgorithm movement, as stated by Mari (“Repost Lets Keep this going” #breakthealgorithm#diversity#inclusion#love#blacktiktok#blacklivesmatter). There are those who learn to manipulate the algorithm, like Micha (“Tiktoks algorithm is rllly unique but it’s so easy to manipulate in your favor if you aren’t actively interacting with poc creators that’s on you”) and Uma (“!!MANIPULATE THE ALGORITHM!! PART3! Point system coming next! Comment your questions below”), who used it for their own purpose or for others. There are those who seek to counter TikTok openly as a corporation to speak against their various infractions upon BIPOGM communities, as demonstrated by a tiktoker by the name of @ziggytyler (2021) and Jeanna (“this one took me for a doozy lmao” #theothersideoftiktok#hellofromtheotherside#malefeminist). Finally, there are those who seek to subvert or circumvent the algorithm, such as Alexa (“Industrialization =/= civilization” #marxist#leftist#immigration#abolishice#blm#usa#uk#eu#nigeria#problack #quickrecipes#healthyrecipes#chef) who raises awareness on immigration issues in the US by disguising her video as a cooking tutorial.

FINAL THOUGHTS

N|I Place|Making and Becoming N|I

As perceived on TikTok, there are many N|I youth content creators that used the platform as a way to connect with other individuals like themselves. They interacted in the first person, addressing their audience in the familiar way, hoping to connect, relate, engage, and attempt to create a space for themselves within the app, while at the same time looking to create a place for others to feel safe sharing a bit of themselves

with others. They accomplished this through the community creation tools of stitching, dueting, sharing, commenting, and livestreaming on numerous issues that impact N|I youth. Some of the hashtags encountered were #firstgen, #heritage, #immigration, #ourculture, #culturechallenge, #whereamIfrom, #thirdculturekid, and #immigrant. Also witnessed were N|I youth engaging in social activism on #justice, #equality, #racism, #bipoc, and #diversity.

Some of the most powerful N|I creators were those who were seeking to change their immigrant or ethno-cultural-racial aesthetic by challenging perceived or stereotypical images of thought in others' minds. This was accomplished through educational videos by using various techniques, such as stitching—posing their followers a question, provocation, and challenge that they must respond to by dueting. This was done to incite calls-to-action in many cases, to amplify a message, or to ask for allyship or solidarity, as demonstrated by Filip (“What is diaspora?”#learn), Karita (“Any thoughts on the #Honduras caravan that keeps getting stopped in #Guatemala?”), and Anastasi (#argentina#latinoamerica#brasil). They also used mediums of music, food, comedy, poetry, and visual art to educate and talk about important issues related to immigrants, as observed with Leila (“Really proud of us bc we’re definitely a different breed”) and Max (“They never got in trouble either, just me”).

Thinking with the notion of newcomer as a conceptual tool to “think with” the digital spaces that constantly change with each connection made, one could say that the spaces of TikTok, and the places it creates through its sorting algorithms and video introductions, creates newcomers of all its users in one way or another. The question is: What might users and creators *do* once there?

A Minoritarian Politics Online?

Remembering that freedom and fluidity is illusory, highly monitored, and codified in these digital spaces (Andrejevic 2013; Savat 2010, 2013; Deleuze [1990] 1995), youth who transverse these spaces will always be at the mercy of the algorithm. Similarly, they will be bound by the structures and design of the platform and the spaces that the algorithm has recommended for them. Nevertheless, youth and anyone who connect with these spaces are machinic subjects that can be co-creators and producers of the digital reality they are presently in. While these limits

or boundaries exist, they have not prevented youth desires from circumventing, breaking, or creating new spaces for themselves and others. It is in these circumstances where one might begin to think and consider the concept of a minoritarian becoming. That is, the initiation of a deviation from the majoritarian standard by minority digital subjects to potentially produce connections, or relations, beyond themselves.

For N|I digital subjects online, it can become about their potential for producing connections, on and offline, through their shared content and online interactions. To “become-N|I” is to provide space and the potential for a minoritarian way of thinking—to provoke thought outside of the standard. Thus, to learn and “think with” N|I expressions and allow them to affectively cut into classroom spaces to provoke new modes of being or thinking with others.

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Practicing the Future Together: Power, Safety, and Urgency in the Distributed Model

Christina Battle

ONE: RESPONDING TO CRISIS

At the start of summer 2020, in the wake of protests responding to George Floyd’s murder (preceded by Breonna Taylor, followed by the death of Regis Korchinski-Paquet, and on, and on), arts and educational institutions across the country began to post black squares on their social media feeds in solidarity with the Black Lives Matter movement. Trending under the hashtag “Blackout Tuesday,” the gesture—even when well-meaning—read as hollow acts of virtue signaling to many Black artists, creators, and educators across the country: empty of both tangible and structural change. Even more troubling, the posts were in fact debilitating to the growing movement since other hashtags used in association with the black squares effectively disabled access of critical information

C. Battle (✉)
Edmonton, AB, Canada
e-mail: cbattle@cbattle.com

related to the activist response. At the time of this writing, for instance, the hashtag *#blackouttuesday* had been used over 20 million times on Instagram, almost completely taken over by advertising, attention-seeking selfies, and fashion shoots. The response of Black artists was a resounding “enough,” as the realization that the change we had been seeking within institutions was nowhere near being made real.

In response, Black, Indigenous and artists of Colour (BIPOC) began connecting and organizing themselves, creating spaces where they could meet and work through the grief and frustration brought on by the current moment in critical ways that were both caring and supportive. I am grateful to have been part of three such spaces, and quickly became aware of how unique their mere existence was: arts and educational institutions with mandates focused on supporting particular cultures or identities have had critical roles within Canadian culture for decades, but my experience within these emergent spaces was different. These new spaces were removed from public view: partly because of their virtual existence (fostered by the physically-distanced reality shaped by the COVID-19 pandemic), and partly because of their insistence on remaining invisible to institutional purviews and non-BIPOC counterparts. Since many of these spaces are not public-facing, they are not explicitly named here. For clarity, I will refer to these spaces as part of a distinct distributed network of response: They are sites where issues of power, safety, and urgency are being reframed and remodeled through collaborative practice and “prophetic organization” (Harney and Moten 2013, p. 27).

The rapid development of this distributed network of collaboration and response followed in ways that are typically seen in times of disaster, where the tendency is for those most impacted to work together and turn to one another for support. Their very existence, as emergent, self-organized *spaces* as opposed to pre-determined *organizations* or *institutions*, allowed for an ephemeral and adaptive quality. In these spaces of collaborative response, the artists involved essentially “took the temperature” of the moment, in the sense that Christina Sharpe (2017) evokes within what she calls the weather: “[where] anti-blackness is pervasive as climate. The weather necessitates changeability and improvisation; it is the atmospheric condition of time and place; it produces new ecologies” (para. 11). In response to the proliferation of black squares and their affiliated hashtags, artists removed themselves from the climate shaped by those hollow gestures of support in favor of creating more urgent, more caring,

and safer BIPOC-only spaces. There, they could hold conversations situated within the present moment of crisis with those who would better understand and relate to its unequally distributed impacts.

Critical segments within artistic and educational sectors have often had a unique and fluid relationship to one another: with both invested in the shaping of, and response to, broader shifts in cultural climates. I am particularly interested in the overlap between artistic and educational institutions as they intersect with the multitude of crises occurring since the spring of 2020. Specifically, I am interested in looking closer to this distributed network of response and reflecting on its occurrence: Both its refusal to directly engage with the educational and artistic sector it has tended to align with in the past, and its insistence on creating something new. Through these reflections, I have been imagining how this distinct distributed response might unfold into the future, considering the ways it might help shift the overall “temperature,” as Sharpe refers to it, across the country and bring about the structural change we urgently need, and which these BIPOC-only spaces were developed in response to.

TWO: THE INSTITUTIONS WE HAVE AREN'T SAFE FOR US

In a recent interview, Dr. Angela Davis explicitly tied social change to *care*, articulating that “our notions of what counts as radical have changed over time. Self-care and healing and attention to the body and the spiritual dimension—all of this is now a part of radical social justice struggles. That wasn’t the case before” (Hobart and Kneese 2020, para. 1). While there has been an expansion of literature around care in recent years, this distributed network of response especially picked up on Davis’ cues as her work was extensively revisited at the time of the network’s forming. Because these online spaces developed as direct responses to crisis, they hold at their center the demand to strategize for a more just future, working to visualize and practice ways out of our current social predicaments. This network of response is reconfiguring artists’ ideas around our relations and responsibilities to one another (both human and nonhuman) in ways that the sectors they run parallel to have yet to fully embrace. Attuned to the complexity of disaster as a series of interwoven crises that are both unequally created and unequally felt, the spaces prioritize social justice, community building, knowledge sharing, and strategies of world-building. Within these spaces, BIPOC artists have been *practicing the future together* (brown 2017, p. 19). Refusing to exist publicly allows

those within the network to redefine how they envision community and to visualize themselves in ways that challenge dominant hegemonies. The need for this response isn't new, but I argue that the imposed isolation that COVID-19 precipitated, combined with relatively open access to online tools, aided in the ease with which the response was made possible.

Stefano Harney and Fred Moten's (2013) *The Undercommons* helps articulate the feelings of despair felt with the artistic and education systems that we were bound to and struggling within. As Jack Halberstam writes in the introduction, "[w]e cannot say what new structures will replace the ones we live with yet, because once we have torn shit down, we will inevitably see more and see differently and feel a new sense of wanting and being and becoming" (Halberstam 2013, p. 6). While these sentiments resonated, the opportunities afforded by the overlapping layers of crisis that 2020 ushered in presented yet another way to approach resistance against institutional norms: A way to make more tangible the parallel systems of support that had always run alongside those more formal spaces in which we found ourselves. We always knew we needed spaces of our own, and while Moten, Harney, and Halberstam helped us envision the dismantling of the old along with the generation of the new, "Blackout Tuesday" catalyzed us to take a step closer to manifesting it. With the turn to the online that COVID-19 afforded, we didn't need to tear systems down in the ways previously anticipated. The pandemic offered an opportunity to remove ourselves from the toxic racism we encounter within institutional spaces: freeing up the energy, confidence, and solidarity required to allow the development of something new.

We already knew that traditional educational and cultural spaces were more likely than not unsafe for us, but the events of 2020, along with COVID-19, helped make that reality more visible. While this essay is primarily concerned with artistic and post-secondary educational institutions, there are numerous examples of racism within Canadian schools. As Robyn Maynard has outlined:

Black students are not only treated as if they are inferior but they are also frequently treated as if they are a threat inside education settings. The presence of Black children and youth remains unwelcome and undesirable in many public schools, and their movements are closely monitored and subject to correction. While racism and harassment from other students has long played a vital role in making Black youth and children feel unwanted in many Canadian public schools, school disciplinary policies

have helped to cement the undesirability of Black students that is apparent within the education system. Black youth face heightened surveillance and disciplinary measures at massively, disproportionately high rates compared to their white peers. (Maynard 2020, para. 12)

As students moved to online learning across all levels of the Canadian education system at the start of the pandemic, reports of Black and BIPOC students *thriving* in online learning contexts began to percolate across news sites alongside ongoing exposures of anti-Black racism within classrooms. An NPR study in the US, for example, articulated the benefits many Black students felt when removed from the racism persistent across brick-and-mortar classrooms. Quoting Adams-Bass, Elizabeth Miller writes, “[...] it’s no surprise some Black students are doing better at home than they were at school. School can take a lot out of them. ‘There is emotional energy and a cognitive energy that goes along with navigating the spaces where you don’t feel welcome or comfortable. You’re always on alert, you’re always on, you’re always deflecting, so you would be exhausted at the end of the day on top of growing’” (Miller 2021, para. 18). The pandemic has, in a sense, offered an opportunity to reimagine and reclaim the spaces in which we participate.

The very nature of the spaces within this distributed network of response being tenuous is what has given them strength: They formed rapidly with limited resources; are adaptable to shifts; and connect and rally together across distance. The infrastructures that these spaces built have quickly moved beyond the realm of response, now taking hold as a developed network of support. Responding with urgency to the pervasiveness of white supremacy held within formal institutions, these online spaces are now being reinforced as parallel webs running alongside them. These networks move beyond resilience, taking cues from Stephanie Wakefield’s (2018) insistence on developing infrastructures that operate and thrive outside of the neoliberal models shaping our dominant systems:

Resilience assumes a future of inevitable and worsening crisis and seeks only to minimize its effects, adapting to changing conditions so as to keep existing socioeconomic conditions of liberal life the same (or perhaps more accurately, on life support). If there is a difference between resilience infrastructures and modern infrastructures, there is also a relationship between the two. Resilient infrastructures are designed to manage destruction and

disaster caused by the ongoing function of modern infrastructures like pipelines, mines, and power plants. (Wakefield 2018, p. 6)

Instead, these spaces are actively working to develop infrastructures that operate outside of the trauma and despair shaped by dominant institutions. As they collaborate to find new infrastructural possibilities, those within the network imagine a complete restart, and consider how to integrate new relations with the land, as well as with one another, in ways that operate beyond exploitation or extraction. The cultural impact of this distributed network, while not overtly visible to the overall public, is challenging hegemonic formations of power in new and radical ways. They are reimagining, shifting, and shaping the artistic sector in Canada anew while actively removing themselves from its dominant institutional frameworks.

THREE: SHAPING A DISTRIBUTED RESPONSE AND THE POWER OF INVISIBILITY

A number of the spaces that emerged in response to 2020 were organized with funding diverted from empathetic host artist run centers, often utilizing temporary injections of funding from arts councils because of the pandemic, without sustained or long-term support in mind. From the dominant cultural sector's perspective, this network of response was never intended to last. But pulling resources from formal institutions while insisting on operating outside of them, is a unique strategy of response, reinscribed by Moten and Harney; and the networks are now working to develop tactics for continuing on and building for the future. One strategy of approach is tied to the network's engagement with online tools: The spaces adapt to whatever technology is at hand offering the ability to connect with others in accessible and expansive ways. Redefining boundaries and borders, they have created spaces of support not bound by generation, the local or regional, thus challenging the definitions of both professionalism and regionalism often prioritized by cultural funders. It is a community response to crisis working to actively look toward the future and, while its reliance on technology, which is often predatory and proprietary (much like those academic and cultural institutions have been to these groups), doesn't entirely offer the agency the network strives for, it is an infrastructure that is responsive to the times.

The spaces making up this network of response follow models of the internet, taking the shape of a distributed web: connecting, sharing resources, and spreading out like a vast network. Both online and off, the form of the distributed network offers the potential to deprivilege central bureaucracies in favor of a model where each user connects and supports the next: “[e]ach point in a distributed network is neither a central hub nor a satellite node—there are neither trunks nor leaves. The network contains nothing but ‘intelligent end-point systems that are self-deterministic, allowing each end-point system to communicate with any host it chooses. Like the rhizome, each node in a distributed network may establish direct communication with another node’” (p. 11). Here, Alexander Galloway (2006) reminds us that online networks need to be understood “not as metaphors, but as materialized and materializing media, [as] an important step toward diversifying and complexifying our understanding of power relationships in control societies” (p. xv). Similar to academic institutions, “the Canadian arts sector reflects elements of the more modern decentralized model of computing, one where individual computers maintain the resources to perform their own tasks” (Battle 2019, p. 296). Counter to these existing decentralized structures, through this developing distributed network of BIPOC spaces, new power dynamics are being fostered and new models developed. I hesitate here to reveal too much, and wrestle with strategies for shedding light on the form of such shifts while also maintaining their deliberate anonymity. There is power in being under the radar: of running alongside and parallel to, as opposed to within, and so, the exact shape of the network’s infrastructure needs to remain obscured. My strategy for speaking about this network of response is to focus on the broad strokes, instead looking to the network as it relates to existing online models.

Across this distributed network, artists share resources, stories, and warnings operating as immersive toolkits for survival, utilizing technology as a way to build up community infrastructures. Those within the network learn from familial histories and cultures outside of Western perspectives, building up new legacies of knowledge while strategizing approaches to the social and environmental impacts imparted by colonialism. They provide both strategies for surviving within the dominant decentralized network while concurrently developing a strong distributed one to soon replace it. BIPOC artists move across both networks, and the invisibility found within this strategy allows them to better navigate the dominant, while concurrently supporting and sustaining the development of

something new. This insistence on anonymity allows for the potential to expand this model of distribution in ways that aren't yet known. As artists pull from generational knowledge and relearn ancestral languages and perspectives, they offer a unique strategy for shifting away from current trajectories in ways that decenter the individual for the collective, and the human for a more relational balance with the environment.

Often in times of disaster, community response gets swallowed up once calm returns and normalcy resumes. But the reality of this particular crisis, and given the minimal structural change organizations have implemented after the so-called “Blackout Tuesday” that sparked this response, not much is likely to change. In fact, if things do return to “normal” in post-pandemic Canada, the refuge that these spaces offer will continue to be necessary. As Dionne Brand wrote in 2020:

[t]he repetition of ‘when things return to normal’ as if that normal, was not in contention. Was the violence against women normal? Was the anti-Black and anti-Indigenous racism normal? Was white supremacy normal? Was the homelessness growing on the streets normal? Were homophobia and transphobia normal? Were pervasive surveillance and policing of Black and Indigenous and people of colour normal? Yes, I suppose all of that was normal. But, I and many other people hate that normal. (Brand 2020, para. 2)

Consider the disaster capitalism being implemented by a number of provincial Premiers such as Jason Kenney in Alberta and Doug Ford in Ontario: both are actively working to push through disastrous austerity measures under the shroud of pandemic. As both manipulate their white-supremacist bases in order to further empower and legitimate their far-right ideologies, the impacts that led to shaping the climate from which these resistant spaces have emerged will not disappear once the pandemic subsides—in fact, they are more likely to amplify. BIPOC artists recognize that the distributed models being developed and expanded today need to be reinforced and solidified now in view of this future. They intuit that this doubling down of disastrous policy requires a response that refuses to repeat the same systemic traps which the system fostering it allows. This network offers an opportunity to imagine the role that humans play into the future anew, and their insistence on making their tactics known only to one another offers an assurance of possibility. The priorities sitting at the core of this distinct distributed network's focus: of

social and environmental justice; of equality; of healthy communities; of reinforcing support and care, are being shared in ways that can help to instigate the structural change urgently needed across cultural life today.

While diversification has been utilized in the past when institutions attempt to challenge the systemic racism at the center of their foundations, numerous studies have made clear its failure as a lasting sole strategy. Similar to formal academic institutions, “[t]he statistics detailing the demographic makeup of Canadian arts organizations illuminates a lack of overall diversity” (Battle 2019, p. 290). I’ve previously written about the statistics and makeup of such institutions highlighting, for instance, a 2017 study by Michael Maranda, which examined the numbers and revealed the lack of diversity in arts organizations across Canada. One of Maranda’s central findings was that: “[g]allery management is whiter than Canadian artists in particular, and the Canadian public in general” (Maranda 2017, para. 13). More recent research, compiled and written about by oualie frost in 2020, was directly prompted by the #blackouttuesday response. As they wrote:

[o]ne ARC statement I saw rubbed me the wrong way. It was well done: they had paid a Black person to help consult; they had made semi-specific acknowledgement of the issues at hand; and they had recently made their workforce more diverse. But still, there was a sitting discomfort, the largely unspoken truth bothering me: Could I remember that gallery *ever* showing a Black artist? (frost 2020, para. 2)

Supported by Levin Ifko, Alicia Buates McKenzie, Uii Savage, and Michaela Bridgemohan, frost’s study focuses on their local artistic sector in Calgary. One of the many eye-opening statistics they revealed was that, “[o]f the spaces profiled, four of ten, or 40%, had 6+ total years of the past ten years, or 60%+ of the time, without showing a Black artist” (frost 2020, p. 3).

These brick-and-mortar spaces, often considered the ideal toward which cultural institutions strive across the country, erroneously so as both Maranda and frost illustrate, are neither safe nor supportive of BIPOC artists. Across 2020, as the crises brought on by white supremacy have only amplified—as tiki-torch-bearing, white supremacists occupy central squares while Black and brown bodies continue to be violently dispossessed and brutalized—these virtual spaces of gathering offer more than just safety in an emotional sense. They are critical material supports

of infrastructure in BIPOC artists' lives. How might the ideas, education, and community developed online across these spaces be shared in ways that maintain and prioritize the safety of the invisible network that these artists have created in order to extend some of their future-forming ideals into the public sphere?

This invisible network of support, it should be noted, isn't new across BIPOC communities. I have seen under-the-radar networks of support develop closely alongside academic institutions, where BIPOC students and faculty support one another as they navigate the racism so common within post-secondary classrooms. I have been thinking more deeply about the many conversations I've had over the years with students and colleagues across institutions and departments who have reached out. I have always considered this act of connection in itself a critical response, and a part of the academic experience necessarily hidden from view of the institutions themselves. A sort of survival system of support for BIPOC folks navigating the oppressive and exclusionary realities of post-secondary life, the network is distributed, fluid, adaptive, and responsive: taking shape when it is needed most, then hovering in the background until needed again. More caring than academic institutions are capable of given their systemic legacies of racism and neoliberal frameworks, the distributed network offers an expansive alternative. It is a space that learns from shared stories while disseminating research and ideas by Black, Indigenous, and teachers of color who aren't otherwise available or recognized within formal classrooms. Intersecting with this new distributed network of response at a number of nodes, this academic survival system of support similarly gathers its strength from remaining invisible to its non-BIPOC counterparts.

FOUR: PRACTICING THE FUTURE AS "PROPHETIC ORGANIZATION"

While the networks do connect, these new, BIPOC-only online spaces, are different from those that have consistently run parallel to academia. Even when, at times, weaving in and out across formal institutions, this new network sits very much outside of them—as if gearing up to replace the sway and influence that academic institutions hold. These spaces operate in place of all that has been lacking for Black, Indigenous, and people of color inside of classrooms, and through them, new legacies of knowledge are shared and explored. Across this new network, artists engage

with what Moten and Harney refer to as “prophetic organization.” As they write, “[i]t is not teaching that holds this social capacity, but something that produces the not visible other side of teaching, a thinking through the skin of teaching toward a collective orientation to the knowledge object as future project, and a commitment to what we want to call the prophetic organization” (Harney and Moten 2013, p. 13). While the network of support running alongside post-secondary institutions lacked a developed infrastructure, taking the form of discreet, temporary connections made when in need, these new spaces developed in response to 2020 have a more recognizable shape, hovering in the space between visible and invisible.

In their recent publication *This work isn't for us*, about the urgent need to address tenacious racism within the artistic sector in London (UK), Jemma Desai teases apart the impossibility of trying to work otherwise within the logic and language of colonial systems. As Desai writes, “I would argue that genuine solutions to the unjust position we find ourselves in require a fundamental disavowal of the logic of their language which is the language of establishment, business, political expediency and an embracing of a new more thoughtful and embodied one of humanity (and humility) and understanding” (Desai 2020, p. 6). Focusing on strategies for bringing about change to working with institutions, their text utilizes its title as a call to a specific readership, beginning with an insistence on resisting “the need to explain why that change is needed” (p. 5), instead assuming the readers they are writing for understand it as a given. I take Desai’s strategy of approach as a model to both learn from and emulate. Timing is often critical, and with Desai’s text moving across communities over the summer of 2020 concurrently to when these BIPOC spaces began to self-organize, the network similarly takes steps to ensure it stays encoded: like an algorithm reaching only those within its immediate online ecosystem.

Through this distributed network, working standards for formal systems (both artistic and educational) are created and learned anew. The strengthened selves shaped by these networks of support carry on into the offline: right back into those toxic spaces that have been failing us from the start. Through this transition from online to off, we bring new understandings of self, community, learning, and caring into more formal networks. We reshuffle our notions of relation and restructure, not only the priorities of the systems that we’re part of, but ourselves as well. Through this restructuring, we shape space to learn (and relearn)

new cultural imperatives. Perhaps through these realignments, we will get closer not only a new sense of self, but more importantly, one that realigns more profoundly with the needs of the moment.

This online response to the toxicity and racism felt across the offline and back again, shapes a sort of feedback loop previously articulated by Beth Coleman and what they refer to as “X-reality”: “I am calling this sense of being in two places at once X-reality, by which I mean an interlacing of virtual and real experiences” (Coleman 2011, p. 19). While the impacts of this online network seep in, they may not be visible, or even recognizable, but they are most certainly viable. As Coleman writes, “[w]ith the drawing of distributed networks for communication technologies, we find a profoundly altered landscape from any traditional concept of community” (p. 25).

A visible example of this X-reality occurred in the fall of 2020 at an event by the UC Davis Women’s Resource and Research Center: *50 Years of Imagining Radical Feminist Futures: A Conversation with Angela Davis and adrienne maree brown*. At the online event, over 8000 participants from around the world came together to connect and bask in an inspiring intergenerational conversation centered around imagining the future. During the event, a collective deep inhale was felt at precisely the moment it was needed the most as the movement of community-building between online and off was exposed in real time. As Vanessa Segundo, of the Women’s Resource Center, noted during the event:

[w]e’re witnessing this conversation and I’m thinking about how I even saw in the chat someone already started a Google document to start coding the things that have been shared to start noting different resources. I already saw someone start a Slack and Discord channel as well for folks who want to connect. I saw folks dropping their IGs in order to sort of follow each other, I also saw community organizations dropping their emails and phone numbers and web links regarding these spaces [...] I’m still happy to see that collectively, we’re already there and thinking about what that might look like: to collectively move forward with what really that future may look like for us. (2020)

I know from the conversations I’ve had with many of those within the invisible distributed network that the event played a critical role in energizing the response—especially the vision provided by Dr. Angela Davis, who helped ground us in the reality we are continually impacted by while

simultaneously giving us a place to start ushering a new future into reality. To quote Davis at length:

I like what Stuart Hall says about engaging in [this] work against racism, against capitalism, against misogyny, against hetero patriarchy. That we do the work because we believe that a different world is possible. But at the same time, we have to recognize that there are no guarantees. Because, the history does not by itself conform to our dreams and our ideas. But at the same time there emerge these moments of these conjunctures, such as the one we're experiencing now. No one could have ever predicted that we would have a pandemic—a global pandemic that is also a product of global capitalism, and that it would be the pandemic that would give people the opportunity to reflect on the structural character of racism. Because people could see what's happening to the Navajo Nation and Indigenous communities. They could see that in Latinx communities, people are suffering so much more. In Black communities. And that all of this would begin to make sense when we collectively witness the lynching—the police lynching of George Floyd and, and then Breanna Taylor. No one could have predicted that. But, on the other hand, had we not done the work all along. Had we not done the organizing, had we not engaged in the kind of intellectual labor that created new ideas and new possibilities. This moment might have happened and we would not have been able to take advantage of it. We would not have been able to seize the time. So, what I hope is that we will work hard to create new institutions, and that's work. That is not so dramatic. It's not like the mass mobilizations, it's not the work that gets us so collectively excited. It's, sometimes it's tedious work, but we have to do that if we are going to make this moment matter. (2020)

There is so much that the public arts and educational sectors could learn from this network and this response. I know though, the reality of how knowledge and strategies found within the margins has continually been extracted by dominant institutions for superficial and often harmful means. Such extraction is precisely what solidified this particular BIPOC response in the first place. If institutions aren't capable of making the significant changes we need in order to feel safe, secure, and heard, why bother sharing with them at all? The distributed model is one to both replicate and a tool to facilitate the methodologies and forms of knowledge that are better practiced outside of formal institutions. We know that racism and bias also sit at the core of the technological systems making

the network as we know it possible: Ruha Benjamin reminds us that anti-Black racism in particular is a “precondition for the fabrication of such technologies” (Benjamin 2019, intro). Following Charlton McIlwain’s call to look closer to the tools we rely on online, and to challenge how they might “enable us to outrun white supremacy” we might discover tactics that consider how this network might, in turn, come to be seen as an entirely new sort of school in its own right (McIlwain 2020, intro). Repeating Dr. Davis’s vision: “what I hope is that we will work hard to create new institutions” (Davis 2020), this network illustrates that we can imagine “the institution” in new and expansive ways. The shape of the distributed network offers a unique opportunity to rethink institutions as well as the legacies they pull from into the future. Turning again to oualie frost (clearly evoking Morten and Harney): “In other words, there is no decolonizing colonial institutions; change will come only from dismantling them and rebuilding structures not rooted in whiteness or capitalism” (frost 2020, para. 24).

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PART III

Non-Pedagogies for Unthought Futures



“Against” Education: A Roundtable on Anarchy and Abolition

*Andrew Culp in Conversation
with Jessie L. Beier, Vicky Osterweil, and Jose Rosales*

Andrew Culp: Thank you for joining us for this forum “Against Education.” The title is meant to raise two separate questions: first, how education might oppose elements of structural domination like white supremacy or patriarchy; but second, to question if education may itself be

A. Culp (✉)
School of Critical Studies, California Institute of the Arts, Los Angeles, CA,
USA
e-mail: aculp@calarts.edu

J. L. Beier
Horizon Postdoctoral Fellow, Concordia University, Montreal, QC, Canada
e-mail: jlbeier@ualberta.ca

V. Osterweil
Philadelphia, PA, USA

J. Rosales
Lisbon, Portugal

an obstacle to realizing the political dreams of abolitionists. These issues stem from the *Lectures in Ahuman Pedagogy* Speaker Series held at the University of Alberta in the Fall of 2019, in which I gave a talk on political conflicts in the present. And I am so happy to include one of its organizers, the educational theorist Jessie L. Beier, joined by two brilliant thinkers contending with abolition in our political present: Jose Rosales and Vicky Osterweil.

Jessie L. Beier: Thanks for convening us, Andrew! I am so grateful to take part in this dialogue and to be able to learn with and from you all. As Andrew mentioned, the *Lectures in Ahuman Pedagogy* Speaker Series brought together a range of thinkers from across disciplines to examine and, importantly, to speculate on contemporary educational research and practice attuned towards today's unthinkable convergence of crises. One of the key questions the series posed was how to think about education in the context of a range of shifting planetary conditions, which, if taken seriously, challenge some of the most long-held fidelities within educational thought. Riffing on the concept of the *ahuman* as proposed by Patricia MacCormack (2020) in *The Ahuman Manifesto: Activism for the End of the Anthropocene*, the various talks that made up the series worked to examine the anthropocentric modes and methods that pervade education today. The purpose was to redirect and reorient educational questions in ways that take into account the non-human and inhuman forces that co-constitute contemporary pedagogical life. But more than that, the series asked how the growing calls and practices aimed at decentering all-too-human educational organizations are themselves caught by the imperatives of contemporary education and its demands for a fully-automated liberal subject, not to mention ongoing pedagogical protocols wherein the "human," even in its decentering, is reinstalled through racist, gendered, ableist, and classist conceptions of education.

With this important tension in mind, many of our discussions on the role and import of an ahuman pedagogy ended with difficult questions about if and how education is capable of transforming in ways that are adequate to today's pressing ecological, social, and political crises. Or as Andrew puts it above, if it is instead the case that education may itself be an obstacle to actualizing desired otherworlds. Put another way, the question of abolition—not only abolition of inadequate subjective molds and out-of-synch pedagogical practices—but *the abolition of education itself* was something that was raised throughout the series. These thoughts of

abolition, however, were and continue to be incredibly difficult to think, especially for educational practitioners like me, perhaps, who have spent a good amount of time and energy working *in* and *for* education. Indeed, for many educational thinkers and practitioners, the thought of being "against education" is a heretical one! But, perhaps this is why this provocation, and the questions we are working through here, are important to pursue. And so, to get this heretical investigation of education and its potential abolition under way, I thought we could maybe start with a big picture question, that is, *what are we talking about when we talk about abolition in the context of education?*

WHAT IS ABOLITION?

Jose Rosales: Of the many ways of approaching the question or status of abolition, and given the parameters of our discussion here, two positions, I think, are crucial. Firstly, ever since the financial crisis of 2008, we have seen abolition through the revival of the writings of Marx and Engels. And it is from this context that what was revived, and would ultimately become somewhat of a new ground for thinking communism in the twenty-first century, was Marx and Engels' definition of communism as not "a state of affairs which is to be established, an ideal to which reality [will] have to adjust itself" but as "the real movement which abolishes the present state of things" (Marx and Engels, *German Ideology*, 57). This definition of abolition would come to be popularized, in part, by the North American reception of various Marxist currents from France, Italy, and Germany that is largely known today as "communization theory" (despite the contested meaning of the term). The second point of reference for clarifying what we mean when we talk about abolition today draws on the work of thinkers such as Angela Davis and movements for prison abolition (whose three key principles are: moratorium, decarceration, and excarceration).

These two positions paint an incomplete picture of abolitionist discourse, but they mark significant attempts at thinking through and applying a specific understanding of abolition—whether the object of abolition is a specific mode of production (Marx and Engels) or specific power formations within a given society itself (prison abolition). This is not to say that each position is opposed or incommensurate with the other (for it is indeed quite the opposite!). The point, rather, is to underscore the way in which both uses of abolition become relevant to a discussion of

education. Accordingly, abolition takes education not only to be a specific institution or formation of power within society, but as something that, given its current form, belongs to our current world that remains incommensurate with the vision of an abolitionist future that is anti-capitalist, anti-racist, anti-sexist, and so on. My suspicion is that *what we mean when we talk about abolition lies somewhere within the coordinates mapped out by the struggles that have come before us*, especially as it pertains to both the theory and collective action undertaken by the anti-state currents who are the inheritors of previous cycles of communist struggle and prison abolitionists.

AC: Thanks for the recent context, Jose. Charting out previous struggles is absolutely crucial. For one, it allows us to see how they have been lived out in the world. When I was first getting my feet wet in radical politics, a friend introduced me to anarchist approaches to education. We debated Paulo Freire, explored Ivan Illich, discussed John Taylor Gatto, and looked at Zapatista approaches to education. But I treated them like speculative theories whose lived reality were thin, if at all. It was not until much later that I actually met people who had gone to democratic and Quaker schools or were unschooled, which is to say, did not attend middle school or high school. I was intensely curious when they disclosed this to me, as the myths of compulsory education were still rattling around in my head. Unlike the Christian homeschoolers I knew from my youth, my unschooled friends were not otherworldly or even maladjusted. While I was debating elementary principles, living examples were in the room with me. Deschooling no longer appeared like a pie-in-the-sky project, and it was standing right in front of me, in-the-flesh. I now knew smart, generous, capable people who were the product of movements against institutionalized education. I was intensely curious and asked them a million questions. But at a certain point, it fed back into those abstract questions I had long considered: What is schooling? What is it good for? What would it mean to abolish schools? What would fill their place?

Vicky Osterweil: I think maybe one early step we can take here is to separate “the process of learning”—gaining knowledge, skills, or general understanding of each other and the world around us—and “education” as a form of activity outside of or removed from everyday life, practice, play, and flourishing. One horizon for the abolition of education would mean destroying this separation by way of the specialization of learning,

of knowledge, of skills, which thereby also means destroying hierarchies of knowledge/knowingness and power as embodied most obviously in the university, but also in the numerous cultural, economic, and social deployments of experts and expertise that justify oppressions of all kinds. This includes abolishing experts of revolution, namely activists, authors, and academics, who feel called to educate/free the masses from their ignorance or to discourage or manage forms of struggle and resistance that do not serve the purported "real" goals of "the class."

JB: Totally agree, Vicky. There is an important distinction to be made between education and learning, or even education and pedagogy and, in turn, this distinction might raise different questions for an abolitionist project. Education as the Organisation for Economic Co-operation and Development (OECD) defines it is "organised and sustained communication designed to bring about learning" (Education, n.d.). Elsewhere, education is most often defined as the transfer of information through a centrally managed institution that directs learning towards transformations that are tied to the production of some sort of societal "betterment." In such a definition, it is simply taken-for-granted that education is inherently oriented to the production of something "better," for instance, and as the OECD puts it, "better jobs and better lives" (Education, n.d.). Within this definition of education, there are some hard-wired assumptions not only about education and its reasons, but also about what counts as something like "better lives." Despite the OECD's rhetoric of empowering disadvantaged individuals and communities, social "betterment" here most often refers to the production of a workforce that functions to reproduce specific modes of production and power formations that are, as Jose highlights above, incommensurate with abolitionist movements. And so, linking back to Jose's comments, the question of abolition within education is one that must not only interrogate the way in which power operates in educational domains, but also how education is itself a necessary technology for reproducing the very conditions against which abolitionist projects are directed.

Pedagogy, on the other hand, and as Andrew points to in his examples of deschooling/unschooling above, takes place in all sorts of places and manifests in ways that are often difficult to reproduce, measure, and streamline through "organised and sustained communication designed to bring about learning." Despite best efforts to *educate*, pedagogy

may or may not occur based on a wide range of forces and intensities at work within and without educational apparatuses. In my own approach to pedagogy, I often think about pedagogy not as a formulaic process that can be transmitted between discrete bodies and managed through educational techniques and curricula, but instead *as a form of life* that develops through the creation of problems (or not). Drawing on Deleuze's assertion that the power of life—all life, not just that limited to the human—lies in its capacity to develop problems, pedagogical life is not a discrete “something” that can be captured, transmitted, measured, and repeated through standardized forms so as to actualize fantasies of ongoing “betterment,” but is instead understood as the immanent process through which pedagogical becoming occurs (or not). And so, thinking back to the question of abolition, I cannot help but wonder if being “against” education might mean being “for” pedagogy?

AC: Super helpful, Jessie. Thank you for slowing things down. I feel like we may be crashing the party with our fast-and-loose use of education terms. It seems like Deleuze is a great figure for thinking through this, he saw transformation brought about by unbecoming as the essential process of life. It is that un-doing of ourselves and our world that makes him such an ally for joining education with abolition.

Tying education to the production of problems reminds me of a recent piece on so-called diversity, equity, and inclusion initiatives in the university. The author argued that when they are treated as administration-led initiatives, they result in prescriptive training that sidesteps the educational approaches we employ in the classroom. While I am certainly for their stated goals of changing workplace climates and the demographic composition of schools, I worry about what happens to oppression when it is treated as a set of guidelines to follow rather than a set of social issues that necessarily begin-and-end beyond the walls of the school.

JB: Indeed. (And, in my mind, education as a discipline needs way more party crashers! JOIN US.) I did not mean to be too didactic above (ha!), but instead have been thinking about, as Vicky also mentions, how education has become cut off from so many important practices found throughout everyday life, including pedagogical ones. I am thinking here with theorists such as Stefano Harney and Fred Moten (2013), for instance, who assert that “study”—that is, the practice of getting together with others to think, co-determining desires for learning without a specific

objective, output, or end point determined in advance—is in many cases antithetical to (and almost impossible within) contemporary educational institutions such as universities, which are now characterized by various forms of ac(credit)ation, debt, instrumentalization, completion, and professionalization.

I am also thinking here with your work on *Dark Deleuze* (2016), Andrew, and specifically the pedagogical potentials, but also challenges, that come with processes of unbecoming and un-doing. That is, in thinking about abolition in the context of education, I have been grappling with how pedagogy might be oriented not towards “better lives, better jobs” but instead modes and methods of unbecoming that involve the dissipation of those connective tissues between the subject and its orthodox referents of “identity” that have come to overdetermine the educational field. It is perhaps here where Patricia MacCormack’s (2020) work on abolition might enter the frame, in the way that she discusses how abolition involves processes of “unknowing” where knowing is positioned as a process of negating. As she writes, “[i]f knowing is negating, and knowing comes from the homogenous domains of power and knowledge whose individual epistemes reiterate each other in order to create consistent values across seemingly disparate fields, then activism must creatively unknow” (p. 29).

VO: Connecting this to Jose’s comments, I like the framing that the “real movement which abolishes the present state of things” is a process of “unknowing” ideology: unknowing that blackness is abject, that property is sacred, that gender is biologically ordained, that police are correct, that we must listen to our betters. In a moment of revolt or direct action, there is also a forgetting of the self as ideology would define it, and a glimpse of the collective self that we might call “communism.”

But short of a call for constant strike and revolt (which I am happy to make), I think we do have to look directly at the school, and the production of the “better,” both our social “betters” and a version of our individual “better” selves, which so often just looks like a more compliant, more acclimated, and socially non-resistant subjects: a self-better at producing value. How do we make the school and the university a terrain for abolition? And how can folks such as ourselves, who are no longer subjects of this process of education (e.g.: students, lol), ally ourselves with those within the system looking to break out?

AC: In philosophy, education is brought up to argue for the necessity of subordinating oneself to a master. This is still how many parts of higher education treat graduate school, with its familiar lineages of which mentor begot which student. It is presented as an apprenticeship model—teacher as master, student as apprentice.

I wonder how much various “party” Marxisms have a similarly uncritical notion of education. For Leninists, features included in the party’s key role of providing discipline is a delineated authority to educate. This approach treats education as a key ingredient of politics, namely the education of people about their class conditions, presenting them as if they were secret—and that once that secret is revealed, then the jig is up for capitalism. “Education as ideological demasking,” we might call it, in which the answer is submission to the party line to fall in line with the mass for the service of a collective will. I wonder if abolition as “real movement” could lead us away from the cheap trick toward a different type of political education? Maybe the next step is to consider an important question: *how exactly do education and “movement” fit into abolitionism?*

TERRAINS OF ABOLITION

JR: To fuse some of the points made thus far, I agree that the question is one of clarifying how positioning oneself “against” education involves answering the question of how individuals who spend time in institutions of education can transform those spaces into “terrains of abolition,” as Vicky puts it. My suspicion is that to engender this “real movement of abolition” within the terrain of education is not something that is relegated to official sites of learning (school, university, other institutions, etc.), but rather is a struggle that has to be undertaken within “leftist” or radical milieus and precisely for the reasons you mention.

As you put it quite rightly, Andrew, the institution of education is tied to a specific understanding and organization of social relations between student and teacher, older and younger generations, and so on. Much of our education system can be directly traced back to Kant’s 1803 “Lectures on Pedagogy,” where he writes that “[p]edagogy or the doctrine of education is either physical or practical. Physical education, or maintenance, is that part of education which the human being has in common with animals. Practical or moral education is the education by which the human being is to be formed so that he can live as a freely acting being”

(Kant 2007: 448; 1902–1923: 9:455). Therefore, the task of pedagogy is twofold: “[c]orrection [*Zucht*] is therefore merely negative, that is to say, it is the action by means of which man’s tendency to savagery [*Wildheit*] is taken away. Instruction [*Unterweisung*], on the other hand, is the positive part of education” (2007: 438; 1902–1923: 9:442). Just over a century later, the American education theorist William Bagley will echo this exact sentiment: “[o]ne who studies educational theory aright can see in the mechanical routine of the classroom the educative forces that are *slowly transforming the child from a little savage into a creature of law and order*, fit for the life of civilized society.”

What is more, it is this relationship between Correction and Instruction, between the disciplining of a set of assumed natural givens and the correct orientation of individual wills, that finds itself played out in various conceptions of social movements, on the one hand, and their organizational expressions, on the other—e.g. the party as intellectual organ of the working-class, vanguardism, or nineteenth-century anarchist theory whose telos was the construction of the free individual.

So, to be “against” education, to work toward its “abolition,” at the very least implies some disruption, modification, or annulment of this power dynamic that attributes ignorance, unknowing, and immaturity to various segments of a population. Precisely because it is such a division of the human into various attributes and its subsequent, unequal, distribution via categories of race, gender, and class, that is the hallmark both of education as an apparatus of state capture and the internal limit to leftist groups seeking to participate in a revolutionary process. Insofar as we remain trapped within a model of education that is predicated on the Kantian distinction between savagery [*Wildheit*] and the rationally free individual as product of instruction, to be “against” education or desire its abolition necessitates the dissolution of social structures that reproduce the unequal distribution of human attributes via categories of race, class, gender, and beyond.

VO: Yes, thank you Jose, my mind was also moving toward other forms of abolitionist practice that occur outside “educational spaces” but serve as vital moments of mass learning. For example, I think there was a moment of mass abolitionist pedagogy, one of the most important in American history, with the burning down of the 3rd Precinct in Minneapolis in the summer of 2020: suddenly, everyone could see that the police were able to be defeated, they were returned to the realm of history—their ideological position as a transhistorical and always-already present social force was

“unknown” through direct demonstration. I am thinking here of Huey P. Newton, in his speech “The Correct Handling of a Revolution”: “In Watts the economy and property of the oppressor was destroyed to such an extent that no matter how the oppressor tried in his press to white-wash the activities of the Black brothers, the real nature and cause of the activity was communicated to every Black community.”

But this moment of abolitionist action and radical unknowing also connected to and increased calls for the removal of police from schools and universities. And high school walkouts have been a consistent part of abolitionist movement over the last decade, including most famously in the Baltimore uprising in 2015. Here in Philly, there was a concerted “cops off campus” moment over the summer of 2020 that then carried over into the uprisings for Walter Wallace Jr. in November.

So there are undoubtedly links between the question of police abolition and educational abolition, but these links are very easily captured by the idea of “reform,” which has so dominated educational discourse since the takeover of the debate by the Gates Foundation/Charter School ideological nexus behind Obama. How do we take and push these moments of abolitionist learning and pedagogy further, beyond the bounds of the riot? It seems very valuable to incorporate techniques and critiques of pedagogy and “education” more suited to moments of less intense street movement into this framework.

JR: The burning down of Minneapolis PD’s 3rd Precinct is, for me, a prime example of mass abolitionist pedagogy. A point I keep returning to and that is worth keeping in mind here is that 54% of the American public viewed the burning down of the precinct as a legitimate and sensible response to the murder of George Floyd (*Newsweek*, 3 June 2020).

That is more popular support than it takes for a candidate to be elected U.S. President. The burning down of Minneapolis PD’s 3rd Precinct was a moment of mass pedagogy on various fronts: with respect to the public bearing witness to what tactics are feasible, which will be met by larger and larger crowds in the days to come; also with respect to the general sense of newly-viable direct and combative language and positions that can be taken in public; and with respect to understanding how antagonistic and combative desires, namely how they shift over time and what this change in the desire for a different form-of-life makes possible, in terms of both strategy and tactics.

AC: Speaking of terrains of abolition, I want to challenge the socialist rhetoric of “fund human needs, not war!” (In part because it is being picked up in recent conflicts over the meaning of “defund the police.”) The phrase is usually followed by a this-not-that chart of how many school principals’ salaries could be covered with the cost of a cruise missile, or the number of college scholarships that could be funded in exchange for one less fighter jet. But is not the myth of education as the great leveler just another version of class warfare, with schools primarily functioning as class-sorting machines?

But the class-function of schools is only part of the story of how they are useful to the forces of order. Schools serve as the nexus point for the entire social sphere. This is how they came to serve as the linchpin to colonial projects, such as residential schools, and why they remain the site of biopolitics *par excellence*—a flashpoint for intense investments in the family, national identity, race, gender and sexuality, disability, and so much more. The cruel underside to this is its necropolitical function as the place where many youth encounter the police on a daily basis, an environment thick with sexual abuse, and populated by a battery of staff whose authority extends deep into students’ personal lives, homes, jobs, and other life opportunities. Abolition must then interrogate how education became such a dumping ground for other issues, and subsequently take seriously how it can still be treated as such a virtuous place. Cynically, perhaps education’s status as a moral bastion is not in spite of these scandals but because of them.

Where might free schools or social movement-based popular education fit in here? To be honest, I find many teach-ins very stilted. While everyone there wants to make them democratic, they are almost always led by a subject-expert seeking a pre-packaged intended outcome (e.g. to learn their talking points about youth incarceration in California). Even the pair-and-share activities are largely “performative allyship.” At most, workshops mine participants for personal experiences that the conversation leaders can loop back to some long-established campaign talking point. Looking in the mirror, perhaps it is us as abolitionists who need a better concept of what education can do.

JB: I have thought a lot about this as well, Andrew, especially in light of 2020s educational spaces, both formal and “free,” as they moved online. One of the most interesting, albeit disparaging, things about the far-reaching move to “remote delivery” brought about by the pandemic, at

least for me, is how it underlines the way in which pedagogy is commonly reduced to a process of information transmission wherein specific content (i.e. talking points) can be delivered remotely and in a relatively straightforward manner, not unlike an Amazon package. The constraints and affordances of what we might call “platform education” seem to play out in similar ways in both accredited university classes as well as in teach-in spaces, artist talks and activist dialogues. And so, besides presenting all sorts of challenges in terms of accessibility, connectivity, surveillance, and privacy, the growing shift to online learning, which some educational scholars have argued is here to stay (see for instance Le Grange 2020), provides a very real example of how, as Jose put it so well above, education functions as an apparatus of state capture while also creating limit points for the mobilization of revolutionary processes.

JR: This seems to be a crucial obstacle for all of us would be revolutionaries. Why do free schools, or teach-ins and other modes of popular education, tend to run into the same problems encountered in general assemblies and various models proposed by those coming from the radical democracy camp? In one of their more polemical formulations, the Invisible Committee defines the problem in the following terms:

[t]he assembly is where one is forced to listen to bullshit without being able to reply, just like in front of the TV, in addition to being the place of an exhausting theatricality all the more false for its mimicking of sincerity, affliction, or enthusiasm. The extreme bureaucratization of committees got the better of the toughest participants, and apparently it took two weeks for the ‘content’ committee to deliver up an unbearable and calamitous document that, in its opinion, summed up ‘what we believe in’. (*To Our Friends*, 59)

VO: I want to hold this critique in tension with its maximalist parody: that we can only learn through doing, that the only available route to “proper” learning is non-verbal, through action alone. How do we maintain communication, consent, and other crucial modes of making meaning and making ourselves without collapsing into the democratism-for-its-own-sake critiqued above? I do not like general assemblies either, but I have also been in situations even this year where action has been immobilized by an inability to communicate among strangers. This tension seems ripe, and important, and I think the desire to reject speech

or discourse entirely is an easy (but ultimately reactionary) way out of this actually very important contradiction.

JR: I completely agree with your insight, Vicky, that finding ourselves unable "to communicate among strangers" not only necessitates some viable model of communication but is indicative of the fact that even in those moments where there is a sense of collective, non-alienated, existence, we remain estranged in a manner that stymies our ability to further articulate practices of non-alienated living.

EDUCATION AS ALIBI

AC: I am also wondering about the rise of a specific type of political education, namely anti-racism trainings. They seem so slick and geared toward shaping individual behavior that seem to fit equally comfortably in the middle school classroom for a unit on cultural diversity as a corporate boardroom doing HR-mandated training on reducing discrimination. Might education sometimes *serve as an "alibi" to not confront an issue*? What happens when racism is said to be something that can be "unlearned" through a series of workshops? Should we instead look to new models for radical education that diverge from "democratic" models of collaboration and participation? As Vicky said, do we feel differently about education when it escapes the walls, e.g. popular ed, free school, reading groups?

VO: I had a secretarial job at a medical school over the summer of 2020, during the uprising, and I watched as an initiative to transform the institution on anti-racist lines (in response to unrest at the school) quickly turned into an educational and learning committee "about diversity," just as movement pressure decreased outside. It happened within weeks. By the end of the summer, it seemed to be little more than a "conversation" about "educating" doctors and professors.

"Anti-racist education" necessarily frames racism as a problem of individual biases that need to be "corrected" in individuals who must be "bettered," as we put it earlier. The idea that what is needed is simply more knowledge also justifies, for example, the circulation of videos of anti-Black police violence and the consumption of black death and suffering. But the moral position of education as the be-all and end-all of respectable change—I mean, who can be against "educating" people?

—serves as an incredible alibi for the grifters, bureaucrats, and capitalists who benefit from and protect these systems.

JB: The education-as-alibi question reminds me of some of the discussions that took place during the “Scholar Strikes” in September of 2020. In the Teach-Ins that took place at the time, for instance, thousands of academics in higher education paused their teaching and administrative duties to organize public digital teach-ins to protest anti-Black, racist and colonial police brutality in the U.S., Canada, and elsewhere. One of the sessions that stood out the most to me was Desmond Cole’s talk titled “Abolition or death: Confronting police forces in Canada” (Scholar Strike Canada 2020). Among many other important points made, Cole asserted that the slow killing of a Black man on camera is not a “learning opportunity” (Scholar Strike Canada 2020, 24:55). This has stuck with me and is something I return to often when I am working through my own approach to anti-racist and anti-fascist pedagogies. I think it raises some difficult, but necessary, tensions around the limits of confronting something like anti-Black violence as an issue of individual closed-mindedness that can be resolved through more exposure, or more education.

JR: Anti-racism training is the educational equivalent of body cameras for the police. It confuses individual sentiment for structural processes. It is no surprise that the problem encountered by Plato in his *Republic* (*Republic*, BKVII) regarding the threat posed by legitimate forms of state violence (*who will police the police?*) is repeated with respect to the question of the threat posed by the legitimate need for education (*who will educate the educator?*).

Given the seeming inescapability of the paradox of educating the educator, it is worth returning to the cardinal epistemic virtue of the method of historical materialism, which grasped the fact that it is the historically produced, and materially concretized, conditions of a society that determines individual consciousness and not the rational intellection of the self that determines social reality. Seen in this light, anti-racism training as a mechanism for correcting inequality of income and access predetermines the very question it claims to resolve. Namely, *is racism an essentially educational problem?* While the possible answers to this question vary, insofar as racialization remains a fundamental process that structures the current order of things, it is not clear to me that addressing racism in spaces of learning has to necessarily take the form of training.

This is especially true when training remains limited in effecting qualitative, structural, transformations while seemingly an unlimited source of satisfaction to university bureaucrats.

This brings us back to the alternate models that Andrew raised. More often than not, when confronted with the question of what is possible via education, I am reminded of Huey P. Newton's description of the Black Panther Party's education program as embodied in the Intercommunal Youth Institute (IYI):

[t]he Intercommunal Youth Institute's primary task...is not so much to transmit a received doctrine from past experience as [it is] to provide the young with the ability and technical training that will make it possible for them to evaluate their heritage for themselves; to translate what is known into their own experiences and thus discover more readily their own. Black and poor youth in this country have been offered a blurred vision of the future through unenlightened and racist educational institutions. The institute is the realization of a dream, then, to repair disabled minds and the disenfranchised lives of this country's poor communities, to lay the foundations as to create an arena for the world without such suffering. Our aim is to provide the young of these communities with as much knowledge [as] possible and to provide them with the ability to interpret that knowledge with understanding. For we believe without knowledge there can be no real understanding and that understanding is the key to liberation of all. (*The Black Panther Party: Service to the People Programs*, 7)

HUMAN STRIKE AND THE FIGURE OF THE CHILD

JB: Yes! Linking to what has been said above, perhaps one of the prime tactical questions for an abolitionist orientation to education today is how to develop modes of pedagogical collectivity, modes of "communicating among strangers" (and through screens) so as to develop practices of meaning-making and knowledge protocols that necessitate, in their very formation, being "against education."

VO: That is exactly right, and I think we can go a long way by recognizing that the experiences of riot and street action are moments of mass mutual pedagogy. Questions posed like "how do we stay on the street together?" and "how do we drive out the cops?" become experiments in collective improvisation and individual contribution. Over the summer, I saw a group of people answer the question "how do you open a safe on

the street?” The answer was: get enough people to pick it up and throw it to the ground over and over till it pops open. That was much simpler, more collective, and less elegant than the mystifying image presented on TV and movies of the expert safe cracker and her team of heist specialists. Yet this was precisely a moment of unknowing and demystification when a bunch of people got thousands of dollars to reproduce their lives.

Education offers to “improve” or “better” a person at some point in the future—university, career, adulthood. The common student critique, “when am I gonna use calculus?!” actually gets to the heart of it—you are not going to, actually. With the exception of the future engineers and scientists who discover an aptitude or pleasure in these classes, school is primarily an experience of arbitrary discipline and humiliation. This is just as true in history class as it is in gym class. The goal is not to create a Renaissance Man but to reproduce the illusion of necessary and natural specialization, discipline, and judgment while separating out the more readily compliant and trainable children. The lessons learned in direct action are of a very different quality.

JB: I hear you, Vicky. In place of education’s investment in the reproduction of a particular person, perhaps the question for pedagogies oriented toward abolitionist otherworlds should be, following Claire Fontaine (2013), “how do we become something other than what we are?” (p. 29). Education is often positioned as a transformative technology, but what exactly is being transformed? Within dominant institutional educational frameworks, transformation—which, as Vicky highlighted above is most often pitched (and sold) in terms of educational reform—is not only positioned as a taken-for-granted *result* of education, but has been identified as a necessary response to the “shifting global gravity” and “global mega-trends” (see, for instance the OECD’s reports on “Trends Shaping Education”) that now characterize a transformed and transforming world. Within this transformational framework, education is understood as a necessary communicative technology for bringing about unquestionably “positive” transformations both at the individual and societal level. With this in mind, the question of transformation is itself an important site of pedagogical struggle, and thus a potential terrain of abolition wherein we might practice (un)becoming something other than what we are.

“We need to change ourselves,” Claire Fontaine writes, going on to say that: “everyone agrees on this point, but who to become and

what to produce are the first questions that arise as soon as this discussion takes place in a collective context” (p. 30). This is key to Claire Fontaine’s development of the “human strike,” which is, as they write, about “adopting a behaviour that does not correspond to what others tell us about ourselves [...]: the libidinal economy, the secret texture of values, lifestyles and desires hidden by the political economy are the real plane of consistency of this revolt” (p. 29). One of the key things I take away from this call is the difficult realization that adopting such behaviours cannot be pre-programmed through curriculum and formalized through reproducible instructional strategies (such as pair-and-shares, etc.). As Claire Fontaine puts it, “[t]here are no lessons of human strike, it is nothing but a disquieting possibility that we must remain intimate with” (p. 31).

VO: Yes, schools have become crucial in creating acceptable limits of what personal change, growth, or advancement can look like. One thing I am thinking of is how, during this coronavirus lockdown, there has been an explosion of suicides among students in Nevada. In response, the state is looking at reopening schools so that the students might have access to social services and support only available to them there.

Schools have become fundamental and almost singular sites of reproduction for children within society, as the nuclear family unit is under increasing pressure from precarity, inequality, increased costs of living and stagnant wages. Conservatives (and many on the left) see this crisis of the family as a moral collapse, something that must be resisted (the left solution calls for welcoming “non-traditional,” e.g. gay families), but what would it mean to look at this generalized crisis of care for “children” through an abolitionist lens? For me, this means interrogating society’s need for the feminized, othered, helpless “child” as an object of protection, stewardship, and “limitless potential”—what do these myths serve, how do they structure our understanding of the self, of “adulthood,” work and learning?

JB: Schools currently provide very material conditions not just for learning, but for social reproduction, which make calls for their abolition incredibly difficult. In the case of schools, education is not only a prime technology for the creation of value (i.e. formal schooling is almost always tied to the production of a workforce), but have absorbed so many other social functions, providing childcare, food, mental health supports, and social services to name but a few. This comes alongside the

ongoing hollowing out of the “public” part of public schooling through ongoing defunding, privatization, and demonization of teachers and other educational workers.

As Vicky notes, the current pandemic shines a spotlight on the crisis of care that now characterizes public schooling, while also highlighting how education reproduces particular subjective figures, such as the “child,” so as to maintain and perpetuate its supposedly transformative imperatives.

JR: I wanted to briefly return to Vicky’s remarks regarding the relationship between proponents of abolishing the family and proponents of abolishing education/pedagogy: the centrality of the figure of the child. For what is perhaps unique to the demands for the resumption of in-person classes is the fact that, unlike other periods in American history, the implicit common sense has prevailed around the need to protect the lives of children at all costs, seems to have been sacrificed for the sake of the transformation of domestic space into office space and ultimately the economy itself. Contrast the current relation between the figure of the child and the education system with the McCarthyist repression against suspected communists “corrupting the youth of America” with anti-patriotic sentiments or the calls for the safety and security of children. Consider the anti-LGBTQI legislation as happened with the 1978 Briggs Initiative, whose language sought to ban both gays and lesbians from teaching at public schools throughout California, or even the more overtly white supremacist supporters of Trump’s ban on the use of racial sensitivity training for federal employees and attack on Critical Race Theory who view these policies as upholding the “fourteen words” wherein it is the figure of the Aryan child that is in need of protection.

What is revealed here is that the figure of the child has always been a contested site of the processes of racialization, gender discrimination, class immiseration, and so on, such that the school-to-prison pipeline ensures the segregation of the child “in general” who is presumably born without class, nor race, nor sex, nor gender. And what is indicated by the *racialized*, *proletarianized*, *gendered*, and *sexed* child, who finds themselves displaced from both the home and the school? Central here is how both the family unit and the education system prop themselves up as solutions to the crises of social reproduction and its compounding effects. This is what I take to be one of the central implications of Vicky’s remarks, and it serves as the grounds for the various ways one can position themselves “against” education.

VO: Yes, and the way this is shaped always eschews the question of the teacher, who in popular discourse is either a saint or an overpaid and ungrateful union whiner. So much of teaching, as with all traditionally feminized professions, is built on a blackmail of loving your job and your students/subjects. While on one level, it is outrageous to refer to teachers as police—for one thing, they are paid and respected much less in general—structurally, especially in impoverished schools, teachers often function like the police. There cannot be a school-to-prison pipeline without someone loading kids into the pipe, right?

The abolition of education seems to also point toward a general abolition of work—because when we identify ourselves with our profession, as workers, we must deceive ourselves about the power structures we participate within. But I also recently have been thinking a lot about the maintenance of identity as a kind of meta-work from which all other work flows. The production and reproduction of the child—from gestation, as Sophie Lewis has demonstrated, through education—are forms of work that involve dozens of different kinds of careers, specialists, and, well, police. One reason abolitionist approaches are valuable is because they so often blossom out into these multidirectional critiques of networks of power and production.

NO LESSONS!

AC: I see a similar challenge in the early Covid deadlock between the biopolitics of lockdown and the necropolitics of opening-up. Schools have been a central zone of conflict. Administrators and politicians openly admitted that society treats public schools as daycares for the working class. This meant that teachers and other care workers have been forced into unsafe conditions. One reason for the rush to open back up is that stay-at-home orders forced the bourgeois to do care work that they could conveniently farm out to others. And in many cases, the added care work was so great that many white-collar workers could not immediately go back to their jobs.

Point in case, here in Los Angeles, it was rich white women who were pushing the public schools to open back up. While it is more complicated than this, it felt like they could not stand caring for their own children and needed to know that it would end. Black and brown parents were not only more cautious about reopening schools, but they did not treat

their own children as an impossible burden. No doubt so much of this comes down to the politics of care work.

Instead of using the pandemic as an opportunity to rethink care, however, we projected the same old general anxieties on children. Are they missing out on socialization? (Aren't we all?) Are there health effects from staring at screens all day? (Something the recent "tech-lash" has discussed to no end, with Silicon Valley bigwigs bragging about putting their own children on zero-screen regimens.) What about the students who are falling between the cracks? (In which their family's life circumstances are treated as a risk factor to be mitigated, not as a generalized social condition that must be fought.) The funny thing is that the solution given for all of these issues is invariably "more education."

JB: Where the solution to today's range of crises (be it climate catastrophe or white supremacist violence or mental health crises) results in the call for "more education," the problem is that we are not yet educated enough, that we require more information or better analyses of the situation so as to overcome them. This mode of problematization has produced all sorts of inadequate, even stupid, educational responses. I'm thinking here of Deleuze's (1994) writing on "stupidity" or the "faculty for false problems," where stupidity does not refer to ableist notions of cognitive deficiency or poor development, but rather, stupidity refers to how problems are determined in the first place. As Deleuze (1994) puts it, a "solution always has the truth it deserves according to the problem to which it is a response, and the problem always has the solution it deserves in proportion to *its own* truth or falsity" (original emphasis, p. 159).

JR: The crisis to which the current model of education, based on austerity and privatization, was indeed a solution to is a problem the institution was forced to confront. But what these measures sought to resolve was not, as you rightly point out, the deficiency of information or better analyses but rather the crisis of the school and university as sites of disciplinary power.

While around 8% of the US population attended college in the early 60s, the percentage of the US population in possession of a bachelor's degree as of 2019 was around 36% ("Educational Attainment in the United States: 2019"). And yet, while this expansion of access to the university has not quite secured the upward mobility of previous generations, it has only seemingly confirmed Deleuze's (1995) claim that, today, "a man is no longer a man confined but a man in debt" (*Negotiations*,

181). It is this logic of control that transforms, not only the nation-state itself, but its institutions and public services into sites for the investment and realization of value.

Alongside undercommoning, one of the most interesting ways of thinking through these crises is what la paperson calls the “third university” (la paperson 2017) or the decolonial university, whose figure of subversion is the *scyborg*—rather than subjectivity transformed by the relation between human and machine, *scyborg* names a kind of “structural agency that produces the third world university” (*A Third University Is Possible*, 60). The *scyborg*’s mode of intervention assumes the form of “system-interference,” a kind of subjectivity that takes up Deleuze’s dictum that what we require is not more communication but vacuoles of non-communication in the halls of the university. Given the colonial legacy of the university system and US public education in general, the decolonization of its institutions is as much a modification of space as it is of time: “the *scyborg* as the agentive element, the decolonizing ghost in the colonial machine” (ibid., xxiv).

AC: This reminds me of a blog post that made the rounds right as we were getting word that education might go online due to Covid, “Against Cop Shit” by Jeffrey Moro. He catalogues techniques, technologies, and concepts used against students. Some are suited to the new online world, such as ed-tech software that tracks students and plagiarism software. But others will continue independent of virtual classrooms: the discourse of “grit,” “resilience,” or “rigor,” strict adherence to policies regarding due dates, attendance, or other disciplinary regimes, and supporting official police by reporting student immigration status to ICE or inviting safety officers into the classroom. Moro is calling out those who are teaching discipline not content. But we already know that from the Hollywood teacher film, right? Outside of *Dead Poet’s Society* or *Mr. Holland’s Opus*, I cannot think of a single film about education that is not about “life lessons,” which is just code for showing up on time, being compliant, and following directions.

JB: This is something I run into a lot when I teach undergraduate education courses. Many people who decide to become educators have had, in one way or another, generally “positive” experiences of schooling, leading them to decide to pursue a career within education. One of the challenges, then, is to address how school is, indeed, not a “positive” scenario

for most people! But this goes directly against these future teachers' personal experience.

AC: Perhaps a more extensive catalogue of how teachers police their students is a topic for a future discussion. It seems like we have genuinely lived up to the title of our discussion with the laundry list of things to be “against!” We explored the many turnings of the phrase. Not only did we identify a lot of things to be against, but we also considered if radical politics can count on education to build opposition “against” them—as in anti-racism workshops, decolonial pedagogy, and free schools.

Subtending these conversation was a question of the humanist subject. Taking a cue from the vigorous debate in Black Studies right now over the category of the human, we have pushed at the limits of humanist education. And we have gone beyond much earlier education theorists like Michel Foucault who challenged us to think about the ways in which school was a training for the factory. Peeling back the shabby veneer of the student, we found that education is largely figured through the child, in which learning serves as a proxy for growth under the watchful eye of a parent.

In turn, we combined the insights of radical movements with the call for abolition. Instead of seeing political problems as issues of insufficient education or school reform as a vehicle for social change, we picked up the abolitionist provocation: should it cease to exist altogether, and what steps need to be taken to make it falter? This is not to say that the critique of schools is anything new. Novel is the political challenge the intersection of radical critique and abolition poses to the liberal ideals of self-possession or cultivated mastery.

As a parting gesture (“No lessons!”), perhaps we can return to the closing to Gilles Deleuze and Félix Guattari’s (1991) *What Is Philosophy?*. The prescription they offer in the final climactic take-it-home moment is “a relation to the negative”—a bit unexpected for a pair of thinkers popularly taken to celebrate the affirmative (217–218). Perhaps they had heard echoes of the same call of abolition, leading them to propose the “three no’s” of a non-philosophy, non-art, and non-science. After today’s conversation, I would add a “non-education”—a non-education that would upend the biopolitical membrane of the social, unwind the positions subjects find themselves thrown into, and unsettling the systems of violence assembled against them.

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Terminal Protagonism: Negation and Education in the Anthropocene

Petra Mikulan and Jason J. Wallin

The Real of contemporary curricular thought is one fundamentally preoccupied with a *refusal of the negative*. For while the dramatization of antagonistic relations features ubiquitously in curricular scholarship, such performativity most often sides *against* negativity. Insofar as the negative is preserved, it is plied as an anathema to those liberatory aims that continue to define the apex of becoming within the field. Such engagements with negativity as *Education in an Age of Nihilism* (2001), Roy's (2004) *Overcoming Nihilism* and Smeyers' (1998) *The Threat of Nihilism* argue that the forces of negation constitute a dead-end for educational

P. Mikulan

Educational Studies, University of British Columbia, 6081 164A Street, Surrey,
BC V3S3V8, Canada

e-mail: p.mikulan@ubc.ca

J. J. Wallin (✉)

Department of Secondary Education, University of Alberta, 14615 108 Ave
NW, Edmonton, AB T5N 1G9, Canada

e-mail: jjwallin@ualberta.ca

philosophy and theory. Such an assessment might be seen to extend a generic attitude of curriculum studies born from its precursor in the civil liberation movements of the 1960s, from which the field was defined in reference to its capacity to triumph over negation and the conditions of negativity as seemingly antithetical to its aims of liberation and freedom, personal, socio-cultural, material, and otherwise.

It is no doubt folly to speculate on the general preoccupations of the curricular field, let alone to assert that the exorcism of the negative constitutes a prevailing contemporary commitment. The field today seems resolved against such unfashionable hyperbole, having long since gone to the side of embodied and case-based specificity. Risking an unfashionable act of overgeneralization then, it nevertheless occurs that the contemporary field of educational thought exercises what Francois Laruelle (2017) refers to as a “monopoly on the Real,” or rather, a claim to the Real that informs upon a “standard” mode of thought and experience. This claim to the Real is not specific to curriculum thinking. For Laruelle (2017, 2019) the claim to the Real is a constitutive maneuver of philosophy, which begins, he contends, with the postulation of the world as fact. Such fact henceforth becomes the positive condition by which the world is given to philosophical reflection. Laruelle contends that this dual maneuver inheres across myriad instantiations of philosophical thought, where for instance Platonic philosophy postulates the Real as the ideal world and its copy, Kantian philosophy the phenomenal world-for-us and noumenal thing-in-itself, Badiouian thought the mathematical “fact” of set theory, and new materialisms matter “itself” (Culp 2016; Laruelle 2013). The list goes on. Across such instantiations of the Real, Laruelle detects a profound narcissism. That is, philosophical decision first names the “fact” of the world, and second, erects a mode of philosophical reflection “proper” to corroborate such facticity. The Real becomes monopolized through both the philosophical decision that names from the virtual multiplicity of the world its “fundamental facticity,” and so too, mobilizes the apparatus of philosophical reflection through which such “facticity” is given reality. The narcissism of this dual gesture pertains not only to the wholly anthropocentric naming of reality, but the constriction and standardization of thought relative to the Real it presupposes.

While curricular theory only obliquely coincides with philosophy, it nevertheless conspires to produce a “monopoly on the Real” correspondent with what Laruelle articulates as the central aim of Western philosophical thought (Laruelle 2017). The event of curriculum reconceptualization would draw upon the energies of post-structuralism to upset the historical metaphysical and teleological aims of education (Aoki 2005; Lyotard 1984; Pinar et al. 1995), but would supplement in its wake a renewed apex of becoming through the “fact” of *protagonism*. While etymologically speaking, the idea of *protagonism* elicits the image of masculine heroism and the primacy of its agential importance, its general definition in this essay will pertain to the way that *protagonism* marks an axiological preoccupation with the powers of affirmation and commitment to transcendental, redemptive optimism as a given “fact” of the world (Sexton as cited in Barber 2017). This commitment inheres the founding of curricular reconceptualization, wherein Joseph Schwab’s (1978) diagnosis of curriculum’s terminal state and Huebner’s, 1976 eulogy on the death of curriculum thought (Jackson 1980, p. 160) would transpire neither the end of curriculum, or the question “why curriculum at all?” (Britzman 2002), but counterintuitively, an enlivened and vital field seemingly auto-immune to prognostications of its demise. While the suspension of curriculum theory’s death sentence might be attributable to the field’s timely coincidence with the revolutionary energies of the American civil rights movement and revolutionary ardor of the 1968 student protests in Paris and elsewhere, the reconceptualized field might be understood also as a special effect of reconceptualism’s proposition on the Real. As Sexton (as cited in Barber 2017) articulates, “nothing palpates the rise of life like a conjecture on non-being” (n.p.). The vitality of the reconceptualized field of curriculum studies occurs against the very threat of such non-being, siding with the affirmational-optimistic ideals of overcoming and liberation as a bulwark against the forces of negation. A vitality that operates as a future promise, safeguarding Reason against its own existential condition, that is, the potentiality of its non-being: “[o]nce humans think of themselves as a life-form, and then as a life-form with the exceptional capacity of thinking or reason, it becomes possible that the potentiality for thinking could cease to be, and that such a non-being of thinking is what must be averted at all costs and without question” (Colebrook, p. 152).

A preoccupation with *protagonism* figures prominently throughout the discourse of curriculum reconceptualization, finding axiological expression in the affirmation of “life” and optimistic telos of “hope” that have long since comprised master signifiers in the field. The affirmation of life and vitalism spans the reconceptualist project and inheres within many of its foundational concepts, from the affirmational life-study of *currere*, the optimistic power attributed to the lived-curriculum, and to hope as an implicate mood of emancipation focused pedagogy. While such concepts stem from varied intellectual referents, the mode of thinking they advance shares a similar aim of overcoming the negative. *Currere* becomes a ground for overcoming the threat of non-being, lived-curriculum defrays an image of curriculum for no one in particular, and hope buttresses thought against the threat of pessimism. The conceptual ballast of educational thought appears today thoroughly occupied by the automatic gesture of protagonism and its relation to an image of vitalism that evades the problem of non-being and in so doing, remits the horror of absence for the presence of vital action (becoming over and against non-being). In fidelity to a particular image of vitalism, as grounded in self-actualized and autopoietic becoming in action, curricular thinking perpetrates a fundamental division of the world and cutting-off from axiologically “othered” modes of negative difference (i.e., decomposition, destruction, refusal, deformation, entropy, error, randomness, void, nonsense) by way of relegating them to the field of forces in need of overcoming, redeeming, and suspending.

In its commitment to overcoming the negative, education appears thoroughly preoccupied with vitalism and the reign of the subject presupposed in protagonism. Here, the privileged status of vitalism is continually made to coincide with the subject of educational thought, most notably in the field of critical curriculum theory, where the resigned subject figures as a “victim” while its “active” counterpart is often accorded “emancipatory” status (Sexton 2019). So it goes that the field’s lauded strategies of direct action, micro-intervention, and active conscientization constitute expressions of vitalism by dramatizing the subject’s active transcendence over those forces of antagonism that would obstruct the world’s correspondence to the subject’s actions. The overcoming of non-being signaled by such fidelities is redoubled in the commonplace practice of equating emancipation with the task of problematizing the “real” identitarian perspective of the scholar, a gesture that insists in its first instance

upon establishing the recognizability of subjectivity as a foundation for becoming and hence the conceptual straightjacketing of difference to what Deleuze (1991) calls “difference in degree,” or rather, difference relative to an underlying referent to which difference is representationally enjoined. The Real of protagonism articulated through such gestures insists that the subject constitutes a privileged ground for the transcendent maneuvers of emancipation and liberation. Where the Real of educational thought presumes the reign of the subject as a “fact” of the world, the world is made corollary to the subject as the (re)source and fulcrum of its significance. In other words, the negative, as support and signifier of that which is simultaneously enacted and rejected by the Real of protagonism, operates ironically within the field of education as an excess (horror of the noumenal Real) that continues to haunt and abduct its curricular fabrications.

Constituting the Real of much educational thought, the protagonistic reign of the subject fabricates an image of the world as a looking-glass that is ultimately *for-us* (Thacker, 2011). In an act of what Thacker (2011) dubs “anthropic subversion,” the reign of the subject given in protagonism establishes as a “fact” of the world its correspondance to human will and action. To presume that the “fact” of the world corresponds to the thought of the human, or that the world pivots on human action, establishes what Laruelle refers to as a “standard” mode of thought and experience. Such mode of thought presumes an ironic point of view, “consist[ing] in treating things and beings as so many responses to hidden questions, so many cases for problems yet to be resolved” (Deleuze 1994, p. 63). Today, such “standard” thinking might be seen across a surfeit of educational scholarship preoccupied in its first instance with the human-centered recognition of subjectivities, identitarian perspectives, and ideology (Brassier 2010). Such scholarly comportments have today become so “standard” as to constitute a “fact” of educational inquiry, proliferating in every domain of educational research to such a degree as to confer upon them the status of “common sense.” Here, education’s proposition on the Real of protagonism aligns with an unabashed fidelity to anthropocentrism that continues to constitute an automatic gesture of educational thought. As educational scholars working at an intersection with posthumanism have articulated, the Real of protagonism figures in the fetishization of meaning, the curricular fabrication of an *all-too-human world*, and the presumption that the world is always already *given* to

the orthodoxies of established theory and its recognizable subjects. The much referenced work of Freire (1968) is indexical here, primarily for its postulation that the Real of education pertains to becoming more “fully human,” a trajectory that reflects the ‘anthropic’ ground now commonly attributed to educational thought.

Protagonism not only figures in the anthropic correlation of the world to a “standard” mode of thinking relative to the conventions of human desiring-production, it establishes a mode of thought that insists on the world’s becoming in the image of human ideology and subjectivity. As frequently dramatized across the field of contemporary educational thought, the problems of non-being and non-meaning are refused by their often baseless rehabilitation into protagonistic significance for-us (Thacker 2011). The horror of the object’s withdrawal from human meaning and its expression of noumenal realisms remote to human significance is today inoculated for its predestination in representation (Baudrillard 2008). As Baudrillard argues, the object is only a detour on its way to subjectivity. As an index of protagonism, the “anthropic subversion” of the Real via representation is corollary to a refusal of the negative, in that it amounts to an ironic “...refusal to acceptantagonism as anything less than...protagonism” (Sexton as cited in Barber 2017, p. n.p.). The overcoming of non-being that seems a genetic impulse of much educational thinking transpires upon the “negation of negation,” where the prospect of a noumenal Real is remitted to empirical, or more often phenomenological significance in which the withdrawn and inaccessible “thing-in-itself” is brought into the light of hermeneutic countenance. Methodology, broadly speaking, labors in this very way as to actualize from noumenal realisms the standardization and regularity of the Real according to the elevated vantage of the human organism. In educational research, this ironic (elevated) limit manifests as an incapacity of the field to signify otherwise, away from transcendentalism (self-determination) and of the possibility of (not) *knowing* without Modern categories of the Real (Time, Space, Subject, Object). Even the conceptualization of transcendence is *always-already* given in curriculum thought to the presumption of what Colebrook (2013) calls “man-after-man,” which presumes that life will, in its last instance, redeem and reterritorialize according to the centrality of “political Man.” Thus pre-posed, educational methodology cannot account for fundamental indeterminacy of the noumenal realisms.

Birthing in the scene of subjective and social upheaval intimate to the U.S. civil rights movement, it occurs that the field of curriculum thought inherits as a template of the Real the “fact” of *all-too-human* orders of becoming and transcendence. The contracted metaphysics endemic to much curricular thought signals not only the profound hubris of correlating the Real in its first and last instance to the image of human centrality, but a profound lack of imagination for its habit of remitting metaphysics to human orders of significance. The conventions of educational research often dictate the discovery of life’s givenness to such frameworks of significance, where researchers are today impelled to identify and disclose as an opening gambit of scholarly work their identity as it is *given* by socio-political and economic frameworks. As Colebrook (2013) avers, a fundamental gesture of so much contemporary research in education pertains to problematizing the subject’s Real position, their true identitarian perspective as the condition and ground for emancipation and conscientization. This now automatic gesture might be seen as an index of protagonism, where the “fact” of educational thought is made to conform to the cul-de-sac of representation, and perhaps more dire, a conceptualization of difference that attends only to “degrees of difference” from a founding representational commitment to the image of Man (Deleuze and Guattari 2003). Teresa de Lauretis (1984) expands this idea in her postulation that many contemporary formulations of subjectivity fail to see how this subjectivity is “engaged in the cogs of narrative” where the very work of narrativity engages the subject in certain protagonistic “positionalities of meaning and desire” (p. 106). Discussing the work of such protagonistic structuration as an index of difference of degree rather than kind, she suggests that:

Opposite pairs such as inside/outside, the raw/the cooked, or life/death appear to be merely derivatives of the fundamental opposition between boundary and passage; and if passage may be in either direction, from inside to outside or vice versa, from life to death or vice versa, nonetheless all these terms are predicated on the single figure of the hero who crosses the boundary and penetrates the other space. In so doing the hero, the mythical subject, is constructed as human being and as male; he is the active principle of culture, the establisher of distinction, the creator of differences. Female is what is not susceptible to transformation, to life or death; she (it) is an element of plot-space, a topos, a resistance, matrix and matter (p. 119)

Similar to the negation of the negative (of the female, nature, object, inhuman, nonhuman, other), adherence to the ambit of human meaning rife within educational thought commits to the axiological negation of the negative (i.e., destructive, impossible, pessimistic, indifferent, nonsensical, decomposing). Where the world thought by education is the *world-for-us*, regulated as it is within given regimes of representation, it marks a decision recalcitrant to negation and the problem of non-being. Everywhere in educational thought there persists a scaling down of antagonism, where negation is evaded through what Sexton (as cited in Barber 2017) dubs “baseless protagonism,” which everywhere remits the noumenal, accursed, and conspiratorial impulses of the world to human ideology and becoming. Today, this maneuver plainly collapses with what it means to conduct “helpful” and “useful” research, where it seems that we have already heard enough about pessimism. Regarding what Thacker (2011) articulates as two *general* trajectories in philosophical thought, the gambit of curriculum thought eschews a long trajectory of despair in lieu of wonder, “shimmering presence,” curiosity, and the euphoria of knowledge (p. 8). Today, even critique is defensible only insofar as it is capable of mobilizing positive contents (Sexton as cited in Barber 2017). Such commitments have come to largely define the pulsional motors of curriculum thinking, which today seem imbricated with a therapeutic commitment to making us feel smarter, better, or wiser, the explanatory functions of showing how the world presents itself and functions in the first instance, and the hermeneutic function of atavism which compulsively traces an image of the world’s givenness to human significance and inheritance, thereby palpating a familiar and limited image of how things really are, unthinkingly privileging proximity and auto-affectivity as the *prima facie* value of relationality and appearing. Here, the question is not that of immanence of life in all events, but of how the “vital” immanence fabulated in educational thought is turned toward the world’s givenness as the condition of all relationality and appearance.

Though this oscillation between vitalism and mechanism in curriculum’s “monopoly on the Real” is only one expression of protagonism, it is an important one, for it exposes a certain tension. Success, becoming and action are privileged over and beyond failure, non-relation, and passivity or inertia. Even the posthumanist claims of overcoming the Cartesian cogito might fail to offer a different logic. For therein, the self-presence

or auto-affectivity of the cogito is not so much overcome, for the idea of the proximity through which man appears to himself is today fashioned as a power that is attributed to all life, including thought. Following Colebrook (2013), it is possible to say that rather than rejecting cogito as an autonomous power or feature extended to all life, what might be explored is a different logic, one that does not unthinkingly privilege proximity and auto-affectivity as the *prima facie* value of relationality and appearing, but looks for other styles of relating (i.e., indifferent, negative, passive, contagious). The move from the so-called malevolent cogito toward the autopoietic web of life of which man is one part, is not a radical move into a different direction, for the principal value of privileging auto-affectivity and literal proximity over sheer alterity and distance remains unquestioned. What seems to be privileged in educational theory today is experiential immediacy over and above abstraction, and this experiential and presentational immediacy is believed to be *essentially* positive, affirmative, affective, proximate, and intra-related. For us, the practice of the negative is not a question of limitations, since “[I]mitation produces nostalgia, dreams of the forbidden possibility for your abstractions to rule undisputed [...]” (Stengers 2008, p. 104). To practice the negative is to practice abduction of abstractions as such.

The general problem of curriculum’s “monopoly on the Real” pertains not simply to its evasion of negation, or to the overcoming of negation through dialectical synthesis. Rather, the problem of negation in curriculum thought concerns the fact that for all of its labor to the contrary, the negative insists as an ironic excess of protagonism’s mode of thought. Rather than falling back into some pre-theoretical proximity with the outside of thought, or examining human abstractions as disclosing some hidden sense or truth, dissembled or deferred by the demands of subject-predicate logic of sense and translation of meaning, curriculum study might create new abstractions and practices of the negative, as forces that demand their due attention, forces detached from the obligation of disclosure and synthesis. What becomes invented, welcomed, exchanged, or prehended in an *event* of negative practice (i.e., theory) is a tearing, a splitting, indifferent to the parts (i.e., subject, object, symbolic) that mediate its appearing. If educational theory is believed to be a transformative comportment to the world of practice, it cannot fabricate concepts deprived of any architecture of negative abstraction, because theory is its capacity to entertain chance, probabilities,

(im)possibilities, and the unknown. What is lost in educational protagonism then, is a detached, passive, splitting, and abductive force of the negative. In contrast, even some current turns in curriculum theory to matter, intra-agentiality, and affect maintain a redemptive and reproductive notion of the Real which precludes any realization of other modes of existence of possibles, superimposed as they are in the present *tense*, because the negative forces of composition have not yet been registered in their opacity, as otherwise than, and indifferent to those of the human organism.

Where curricular thought has committed to seeking ideas, references, and systems of thought for overcoming the return of the negative, it has baldly evaded the negative as mode of thought that Laruelle (2017) dubs “non-philosophy,” which entails in part a heresy against the monopoly of the Real. Where curricular thinking commits to the philosophical decision of protagonism and its myriad instantiations, it functions to both limit the frame of experience and so too, spare experience the horror of the Real that herein might be thought as the negation of education’s philosophical decision. For where curricular thought has committed to protagonism in the first and last instance, it has impeded intellectual progress and maturity, more so for the fact that the surfeit of scholarship committed to protagonism has yet to solve the problem of negation, of non-being, and of passive cosmological eventualities like the extinction of the species that have scarcely shocked the curriculum project from the fashions of anthropocentrism and human centered-ideology. We’ve had 50 years of curriculum thought. If protagonism and its attendant expressions were an adequate mode for overcoming the negative, surely the force of the negative would today be defeated. Yet, the negative has not gone away, and by all accounts has seemingly intensified in its virulent power.

Where a familiar impulse of curriculum thought might entail doubling-down on optimism or the mobilization of some new reference to be plied against negation, this essay aims to assume negativity as a mode of thinking, and more pointedly, as a strategy for intensifying the “practice of negativity.” That is, we suggest that curriculum theory’s givenness to protagonism and the optimistic correlation of the world to the ambit of human desire forecloses its own condition (the negative) and thus places a limit on what can be thought as possible/thinkable and impossible/unthinkable (Thacker 2011). While we imagine that the “practice

of negativity” could be mobilized along myriad trajectories, namely, the “*Dark Deleuzianism*” of Andrew Culp (2016), the xenofeminism of Laboria Cuboniks (2018), feminist afro-futurism of Zakiyyah Iman Jackson (2020), and Denise Ferreira da Silva (2017), or afro-pessimism of Jared Sexton (2011, 2017), the particular mode of negation that informs this essay extends from the so-called fatal strategies of Jean Baudrillard (1993). The choice here is entirely tactical in that Baudrillard’s “fatal strategies” articulate a procedure of “[deepening] negative conditions” as a fulcrum for relaunching thought, and particular to this essay, the preoccupation with protagonism seemingly endemic to curriculum study (p. 223). We suggest that curriculum study is not negative enough to be able to imagine and thus account for the infinite “fatal” expressions of different, (im)possible modes of existence.

Baudrillard’s “fatal strategies” encompass an array of ideas, but as a generality, it might be wagered that they share a common feature in their constitution of a counter-system founded in the idea of *reversibility*, or rather, the immanent potential within any system for “subversion or metamorphoses” (Pettman 2008, p. 14). At its surface simplicity, this orientation hardly seems remote to the varied aims of curriculum thought, which aims equally at the habilitation of subversive forces for countering dogmatism. However, Baudrillard’s “fatal strategies” eschew the rehabilitation of subversion upon the scene of protagonism, going further still to articulate not the “sovereignty or prosperity of the subject,” but the “accursed share” of reality that withdraws from the centrifugal force of protagonism and returns diabolically to “thwart human hubris and lack of imagination” (pp. 15–17). “Fatal strategies” articulate the revolutionary insurrection of the object from under its internment by protagonism and arrest via the equilibrating model of dialectics, which above all things, performs in its preoccupation with synthesis and reconciliation of the *negation of negation*. Baudrillard’s (2008) “fatal strategies” wagers that the Real is in no way sworn to the victory of the subject over the object, a development that is today central to the critique of *correlationism*, or to the optimist’s wager that the Real aligns to the “greatest good.” Baudrillard’s “fatal strategies” instead articulate a world given to extremes, unmoored from dialectical regulation, and victorious over the reign of the subject (p. 25). While Baudrillard’s “fatal strategies” articulate a mode of justice that reverses the monopoly of the Real, and

in particular, the monopoly of human-centered ideology, it is significant that the field of curriculum thinking stubbornly refuses to retreat from such “default trajectories” (Pettman 2008, p. 16). Where today we face confrontation along fronts and scales scarcely anticipated by our “species-specific being” (most prominently today would be the example of school lock-downs due to Coronavirus pandemic), the field yet remains hostage to the momentum of protagonism, and so too, its location of liberation in politics despite the deepening challenge of metaphysical and cosmological varieties (Baudrillard 2008, p. 141). The connection being insinuated here pertains to the relation of climate change to education and so too, the idea of education relative to a growing body of research on the “Anthropocene,” perhaps better expressed through the more specific indexes of its instantiation: *Capitalocene*, *Plantationocene*, *Anglocene*, *Gynocene*, etc.

It is undoubtedly the case that politics informs significantly on matters of climate and ecology. In politics remains a significant ordering power over the world, as its motors are directly linked to the management of natural resources, the regulation of the status of life (including human and nonhuman life), and to the cleavage of the world into human-beings and those refused the status of such designation. While this gloss of the “Anthropocene’s” political motors is crucial to understanding its potential intersections with education, a project that has been capably realized in the works of such scholars as Helena Pedersen, Nathan Snaza, Jan Jagodzinski, Randall Curren, Elen Metzger, and Teresa Lloro-Bidart among others, the crux of “fatal strategies” enjoins with the question of climate futures as to intersect directly with curriculum’s particular “monopoly of the Real.” In the sense that “fatal strategies” dramatize the reversal of the object and by extension, the reversal of the world as a supposed object *for-us*, it could be gambled that climate change and its attendant challenges might themselves constellate a “fatal” expression. For as a number of climate change and “Anthropocene” researchers in education today suggest, the conditions given by climate change and the geological epoch of the Anthropocene fundamentally delink from the human-centered thinking of protagonism. The deepening conditions of negativity rallied by the effects of climatological “change” transpire a different metaphysical orientation in ecological catastrophe, biodiversity loss, conceptual obsolescence, and extinction functioning at a scale and

form that both dominates the subject and withdraws from its installation in the political.

The challenges of anthropogenic climate change constitute a “fatal strategy” that transpires through the reversal of the object and a negation of the assumption that the world conforms to its meaning *for-us* (anthropocentrism) or reflects in the image of our desire (anthropomorphism). As climate change research and its extension in the field of Anthropocene studies articulate, the metamorphoses of the planet from under the presumptions of anthropocentrism functions as a vehicle of negativity against which the ordering of the world according to human interest is exposed as hubris. If climate “change” can be thought of as a “fatal strategy,” it is due to its implicate heresy relative to the established order of the Real. For instance, the confrontation of Anthropocene studies and education elides that education’s implicate protagonist orientation toward mastery and transcendence over the world is today doomed to failure. Such obsolescence implicates not only to the conceptual universe of education as it attempts to remit the world to its meaning *for-us*, but to the very image of educational futures as they extend from a present moment that grows increasingly out of synch with encroaching forces of climatological “change” always already possessed of their own momentum and powers of reversal. While the “dark” energies of the geologic underworld loom large in a sublime of the negative, educational Anthropocene research continues to insist on its elevated desire for the mastery of illumination.

The “fatal strategy” of climate change is marked by its articulation of an insoluble world *without-us*, or rather, a world remote to education’s fundamental alliance with protagonism and its “epistemological” transcendence over the object (Thacker 2011). As mounting consensus in the scientific community reports, the future planet will be increasingly alien to human life. For example, as Heather Davis (2016) shows “Plastic, and its associated plasticisers, are among the many anthropogenic compounds that are heralding-in an increasingly infertile future, or a future filled with strange new life forms.” This is not only to register how the object reverses its subsumption from under the desire of the human, but more completely, to articulate a scenario in which the “given” world is cut-off from its historical purpose and thrown into conceptual crisis. Such deepening of negative conditions is, of course, heretical to the world

“given” by the human-centered preoccupations of educational thought and so too, the imagined future as it is formatted in an image of the present. In the wake of this climatological “fatal strategy” and its articulation of the Real delinked from its monopoly in protagonism, continued fidelity to the present order of things symptomizes a “pathetic twinge of self-esteem” against the mounting forces of climatological and ecological negation (Brassier 2010, p. xi).

Baudrillard’s (1993) “fatal strategies” conspire not only to articulate a noumenal “logic” of objects as they withdraw from representation and cognition, but mobilize in this effort aspects of the speculative science known as *pataphysics*. Where for Baudrillard the once expansive field of metaphysics has been co-opted by the preoccupations of politics and sociology, “fatal strategies” habilitate a virtual mode of thought as it extends from the work of Alfred Jarry, whose book, *Exploits and Opinions of Dr. Faustroll, Pataphysician* (1911), articulates *pataphysics* as a speculative vehicle for surveying realities beyond the phenomenal and traditional worlds of man. Drawing upon Jarry’s work, Baudrillard contends that the aim of *pataphysics* is in part linked to its articulation of both a universe and universal law supplemental to this one. Through the introjection of *another* law or order of reality, the function of pataphysics is tantamount to a heresy against the “given” world. Pataphysics does not simply describe *another* world. As a mode of negation, pataphysics implicates the “given” world in the details of a noumenal order astride this one. Yet, the articulation of a supplemental universe in *pataphysics* is not merely aimed at introducing another positionality, but aims at absorbing the “given” world, and hence, opposing the monopoly of the Real which founders therein (Baudrillard 1993, p. 132).

While pataphysics is typically made to labor in service of optimism and benevolence, Baudrillard’s (2008) formulation of pataphysics rejoins with the negativity of the “accursed share” or excess energy supplemental to the given order of things. Herein, Baudrillard links pataphysics to the *theater of cruelty* and the assertion of its primary practitioner Antonin Artaud that the limitation of Western theater stems from its preoccupation with the representation of individual suffering and group struggle. For Artaud, the very aim of the *theater of cruelty* was to drain collective abscesses or accumulative preoccupations of the culture, particularly as they manifest in the habit of representation. Against the representational

models of political and historical overcoming in which Western theater predominantly labors then, the *theater of cruelty* aimed to actualize the idea of perpetual conflict in which we might become interested, as Sexton (as cited in Barber 2017) argues, in a mode of thought that is both against our own interests and against interest in general. The *theater of cruelty* is hence not “cruel” in the conventional sense of the term, but for the way it articulates realities opposed to “every event said to be real,” is “cruel” for its conspiracy against the “given” world.

It has of course always already been the case that climate “change” is all *too real*. The speculative articulation of ecocatastrophe has already transpired, if but unequally upon those minerals, animals, and peoples sacrificed in the extractive geologic in the making of the “first world.” In the midst of ecological “change,” the mobilization of *pataphysics* as a speculative vehicle for surveying inhuman futures seems already outmoded. While the preoccupations of education remain yet committed to the perpetuation of human-centered ideology and desire, it remains that the articulation of futures out-of-synch with contemporary fidelities might yet transpire a mode of thinking in which the pretensions of protagonism are no longer the fashion, and in which current models of educational thought become heretically routed. As Baudrillard argues, the project of *pataphysics* pertains to the articulation of worlds that we *must* see, a challenge all too prevalent where education continues to labor in the “eternal return of the Same” by insisting that negativity be understood as nihilist, antithetical to its aims of irradiative liberation and freedom. For as we learn from front line climate science, the conceptual bulwarks of the world “for-us” are already doomed to obsolescence, constituting thus an indictment against schooling everywhere that attempts to reproduce an image of reality that is already, irretrievably past, despite the current rage of atavism. The acceleration of conceptual obsolescence postulated by climate science is undoubtedly figured in the idea of obsolescence more generally, where human-centered ideology and its correlate in “the future” is collapsed under the encroaching forces of extinction, which, as Brassier (2010) articulates, retroactively extinguishes the primacy of meaning and its privileged manifestation in the desiring-subject. To understand climate change as a pataphysical formulation entails in the first instance the reversal of contemporary educational orthodoxies relative to the “return of the object.” Such a return is today figured in the rise of an alien earth that “no longer” reflects in the desire

of man and on all fronts, eclipses its claims of control and mastery over reality. Such reversal is for Baudrillard intimate to “fatal strategies” as they arrest the reign of the subject as the privileged locus of desire.

As climate science and its extension into the so-called ahumanities today conjecture, the future of the planet might very well be one *without-us*, both in terms of the recognition of inhuman planetary “wills” at scales beyond the ambit of man, and ultimately, the prospect of extinction in which the object will subsume the subject completely, retroactively nullifying meaning and so too, the very possibility of “vitalist” embodiment fashionable in contemporary educational research (Brassier 2010; Thacker 2011). The articulation of a pataphysical planetary “will” remote to human desire herein functions not only to reverse fidelities to the subject endemic to educational thought, but acts as a “fatal strategy” that “absorbs” the very orthodoxies of education. That is, the pataphysical articulation of an inhuman will disarticulates the vaunted metrics of human desire, human-centered ideology, and the idea of active (i.e., progressive, reproductive, redemptive) vitalism in which the revolutionary ardor of the field remains steeped. The inhuman remits the monopoly of the Real that continues to founder in the “common sense” of educational practice and research. After all, climate science and its speculative advancement in the “ahumanities” posit that the future will acquiesce to *another* order, and therein postulates a Real that is fundamentally heretical (sovereign) to the present order of thought. Following Nietzsche, Bataille suggests that “sovereign communication” (as expressive of the Real and expressed in instances of laughter, death, eroticism) takes place between life and death, knowing (*savoir*) and unknowing (*non-savoir*), possible and impossible. For example, in “Nietzsche’s Laughter” (2001b) Bataille writes: “The possible and the impossible are both in the world [...] The possible is organic life and its development in a favorable setting. The impossible is the final death, the necessity of destruction for existence [...] For man, the possible is good, the impossible is evil” (p. 18). Bataille suggests that in this dialectic, the possible is fabricated as “goodness” or “appropriateness,” and the impossible as “evil”—unthinkable destruction and negativity (death in its final instance). Because “[t]he possible, so it seems, exists at the limit of the impossible” (p. 19.), setting limits to the Real by insisting on its possible, proximate, positive and “material/given” conditions only, betrays the educational force of a negatif, as a sovereign *expression* of difference. When *possibles* are absorbed in

education's "monopoly of the Real" as that which offers intelligibility and continuity, what they make important alongside, is the machinic contingency of the negative. The tension between possible and impossible is suggestive of Bataille's "general dialectic" as elucidated by Joseph Libertson (1995), in "its sacrifice of a term of synthesis, in favor of a space of tense contamination in which two modes of being invade each other, compromise each other, while paradoxically retaining the integrity of their opposition" (p. 212). By contrast, the Western educational ethical framework is conditioned on a formulation of Universality held together by its modern synthesis.

We understand the "sacrifice of synthesis" between the different modes of existence of the possible and impossible to be another example of a "fatal strategy" that suggests a counter proposal to education's affirmation of protagonism. Bataille's "sacrifice of synthesis" can be understood as a refusal of the modern imperative to reduce/subtract noumenal realisms (possible-impossible, good-evil, positive-negative, outside-inside, space-time) to an algebraic/categorical expression of the negative in the deterministic logic of relations, value and metrics of human desire. To sacrifice the modern synthesis of the Real in favor of transitive contamination (irreducible, virtual, both absolute and uncertain, inachieved) is a sacrifice pledged in the name of negativity understood as a saying, a quality of difference to become an impassivity, a *tense* expressed in the infinite transitive discontinuity, a *negatif*. As a non-propositional quality in its infinite transitive tense of adjectival expression, a *negatif* is a saying rather than said, because it is without relation, nothing other than itself. A *negatif* cannot be said by the demands of a positive exposition, for it is not an object, relation, or a being that can be represented in language, nor is it a substance or essence that appears as something beyond language, something more real or something that hides the truth of the positive. By contrast, protagonistic relationality is premised on proximity and sameness overcoming/redeeming its condition in distance and sheer alterity. Benjamin will say that "[t]hinking involves not only the flow of thoughts but their arrest as well," an arrest that makes possible a "Messianic cessation of happening." In its refusal to sacrifice the modern synthesis of the Real and imagine possible futurity ceasing to happen to and for us (to break away from protagonism's teleology that is Duration), educational Anthropocene research fails to account for the deep time of infinite transitive contamination.

In the Hegelian dialectic of negation, or Lacanian dialectic of lack, both conditioned on the positive self-determination and self-actualization of the universal (white, male) free will and reason, a positive value of the negative expropriation (of blackness and the feminine) is taken to be the determining factor of protagonist's difference. If the negative is an effect of raced and sexed bodily comportments, arranged to be managed as the differing transcendental condition and *sense* of positive value in colonial protagonism, an insistence on a *negatif* in curricular studies comes about with a wager, risking a critical reconfiguration of the field in reaction to a life not for "us," but for "a" world. As such, those of us engaged in the future conditional tense of curriculum studies will have to accept that the way we answer to and for the sovereign force of the *negatif* is part of the unintelligible situation that wagers without us, and that we are called upon to answer this inhuman cry by pledging to an ethical call from another horizon; to an ascriptive ethic of a *negatif*, filibustering that which must remain obscure for the fantasy of protagonism to remain intact.

An impossible exists in man that nothing will reduce [...], in the end we can only face the impossible. Putting life, that is to say the possible, in proportion to the impossible, is all that a man can do if he no longer wants to avoid it. (Bataille, 2001a, 2001b, p. 20)

For example, Anthropocene research invites us to (re)think Time in education. An ethics of negative would here mean terminating educational grips on Time (Mikulan and Sinclair forthcoming), where the (White, male) Subject would "figure without Time, stuck in the endless play of expression, with the rest of us. Without Reflection (the distinguishing attribute of Kant's subject of knowledge) and Recognition (the final moment of Hegel's subject of morality), both the account of poesis that creates the World as the product of the Subject's Desire (that is, its auto-actualization) and the account of ethics that demands that the World become the fulfillment of this Desire (its actualization) become unwelcome" (Silva 2017, p. 91). Curriculum theory might "sacrifice the synthesis" between the possible and impossible by intensifying the tension and *t(s)ense* of the forces of the sovereign *negatif* it always already harbors. Expressed by discontinuity of realities opposed to "every event said to be real," a *negatif*, "cruel" for its conspiracy against the "given" world. Both da Silva (2017) and Colebrook suggest (2014) a speculative

ethical turn toward Leibniz's Plenum where "the "Play of Expression," becomes the descriptor for Existence, as what exists becomes only and always a rendering of possibilities, which remain exposed in the horizon of Becoming." (Silva 2017, p. 91). Taking negative ethics seriously in educational Anthropocene would entail addressing the following question posed by Harney et al. (2013): "Can this being together in homelessness, this interplay of the refusal of what has been refused, this uncommon appositionality, be a place from which emerges neither self-consciousness nor knowledge of the other but an improvisation that proceeds from somewhere on the other side of an unasked question?" (p. 96). The way we answer for this question cannot be decided in advance but must affirm fatal strategies of "improvising" the many possible pedagogical compositions (i.e., including the forces of the negative) without demanding that it fulfills protagonism's monopolization of the Real. As Mikulan suggests (2022), rather than forcing their integration or inclusion into the established and proper regimes of knowing, doing and refusing, negative ethics cannot be named, described, or predetermined. Negative ethics "intensify what different experiences make important," by "dramatizing the tensions" between the many (some yet unnamed) modes of pedagogical experience. Negative ethics risks "disorderly inclusive disjunctions" manifesting the "Play of Expression" arising in each and every micro pedagogical process.

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The Cosmoecoartisan: Ahuman Becomings in the Anthropocene

jan jagodzinski

STATE OF AFFAIRS

This chapter attempts to speculate and call on the singularity of artists and artisans engaged in experimenting and exploring the necessity of responding to the phase change that the Earth is undergoing with our species extinction not out of the question. Given the particular trajectory of the anthropogenic labor engaged by the wealthiest countries where it seems all but impossible to curb carbon transmissions ‘in time,’ it appears that chronological time is not on the side of Homo sapiens as the last species of this genus. The global COVID-19 pandemic provides insight as to what are likely to be responses by state governments as catastrophes related to climate change continue to increase, and climate migrants, war migrants, asylum seekers, and refugees amass at borders seeking to escape their plight. Necrophilic measures continue to persist

j. jagodzinski (✉)

Department of Secondary Education, University of Alberta, Edmonton, AB,
Canada

e-mail: jj3@ualberta.ca

as is readily evident by the biopolitics of the pandemic, and fascist solutions to security and border protection continue to feed a populous fearful and worried as their lifestyles become decentered to the point where even the most secure and wealthiest begin to panic. Long lineups for foodbanks, gasoline, unemployment, and home and rental evictions have now become common in the 'richest' country, the USA. The political situation has enabled the pandemic's force to disrupt the economy affecting all but the top 1%. Even when a vaccine solution is available, countries continue to falter as conspiracy theories, anti-vaccination propaganda, the alt-right, and religious orthodoxy have been mobilized to the point where current democracies are becoming destabilized. There are just too many skeptics, political opportunists, and outright vaccine deniers to turn things around. Intellectual right-wingers, such as Jordan Peterson (U of Toronto), and media right-wingers like Tucker Carlson (Fox) have captured the societal affective aversion to 'progressive forms' of social equality. Belief-disbelief, as has been shown over and over again, is easily susceptible to manipulation through all kinds of rhetorical theatrics, conspiracy theories, and outright falsehoods, all of which are supplemented by targeted algorithms as the state of what is called 'democracy' is threatened by anti-intellectualism. The result is exhaustion, fatigue, and outright despair by those who think otherwise.

The future, built on the trope of the child, continues to erode as right-wing media and politicians cannot stand to hear the voice of someone like Greta Thunberg. Her voice, along with climate activists such as Extinction Rebellion (XR), demands the state to 'save the planet' even when this is an impossible task. The world is not ours to save. With children not being vaccinated, school safety environments remain in question. There is nothing too hopeful about this situation of an open future for the next generation. If an alien force, like the COVID-19 virus, is unable to rally people together in some fundamental cosmopolitical way, why then should there be some utopian vision that planetary governments of the richest countries will curb their economies and open their borders for the 'good of all'? It seems flooding the populace with media entertainment, claiming that green capitalism is the only 'way out,' along with the promise that NIBC technologies will turn nature into culture via GMO and biomimesis (biomimetics or biomimicry) will indeed 'save' the planet. Transhumanist initiatives where AI has infused virtually all dimensions of living bodies and the biopolitics that surrounds them are deeply entrenched (Pedersen and Illiadis 2020). It is already possible to modify

the human genome using the relatively ‘simple’ editing tool CRISPER-Cas9. It is simply a question of time before strict laws regarding heritable genome editing become lax in countries that have very little to lose and much to gain. In the meanwhile, continuing sport spectacles like the 2021 Tokyo Olympics, the FIFA World Cup of Soccer, and World Hockey are ways to distract and suppress the turmoil that sits under all the glitter and promise. Are we just zombies without hope still possessed by desire?

The trope of the cosmoecoartisan is not a way out of this bleak picture of the Anthropocene that insists that technological innovations are possible if the human appetite to consume is curbed. It is instead, what I take to be a mapping of a contemporary problematic wherein art and technology are embedded in a cosmoecology that might provide speculative stimulus for the imaginary given that there is no grand narrative as yet to be had; there is no ‘authority’ as such which carves out an agreed-to path by successive COP meetings as binding agreements are often broken.

There are many tributaries that acknowledge the deterritorialization of the Earth and its current phase change that is now labeled controversially as the Anthropocene. Deleuze and Guattari (1987), for instance, now decades ago identified in their geophilosophy the thought of anorganic life, or a life that is the Earth’s alone, a planetary life for-itself and without-us, with its own history and its own cosmological ‘will.’ ‘A Life,’ in this sense, is both creative and destructive (catastrophic) at once. That is to say, the Earth’s “machinic phylum” is its matter in the process of change (including the species *Homo* living on its surface). This ‘matter movement’ or ‘matter-energy’ and its ‘technological lineage’ are ontologically inseparable when it comes to our species: stone, metal (iron, copper, steel), and now plastics. To take up the conceptual personae of the cosmoecoartisan is to engage with the Earth’s cosmic forces, to engage with its machinic phylums in ways that open up new vistas as to what needs to be done for a ‘new earth’ and the re-evaluation of relationships. The last section of this chapter comes to terms with what that means for an avant-garde ‘without authority,’ that is, a global network of ‘singularities,’ each pursuing their own endeavor to articulate whether a horizon is indeed even possible.

The cosmic—as anorganic life—as ‘materiality’ or ‘energy’ suggests the disturbing speculation that *Homo sapiens* as a species that ‘thinks’ emerged *from* the Earth through a mutual interaction between the forces of anorganic life and their externalization as *techne* (stone, metal, plastics) that enabled what Daniel W. Smith (2018a, 2018b, 2019, 2021)

has termed ‘en-mindment,’ cueing his speculations on biface technology (Acheulean culture) as explored by André Leroi-Gourhan and Raymond Ruyer who maintained that bodily organs are themselves technical artifacts, as is language. Smith explores the way externalized organs and language become *detachable*, removable, and separated from the body as ‘writing,’ i.e., as forms of grapheme and technologies of repetition, recording, and representation. En-mindment is that processes where these exteriorized technologies are interiorized creating evolutionary change in our species via sapienization through technological forms of cognitive displacement or detachment. There is something non-human when it comes to thought as it emerges through concepts (philosophy), functions (science) and affects and percepts (arts), all of which hold the potential to propel imaginaries that are ‘beyond’ simply lived experience and a meaningful present. This non-human dimension of thinking raises the question of whether it is the very ability of externalized non-human thought to consistently deconstruct what defines the human, and thus the pre-human (physically, the plasticity of the brain), so that there is only the perpetual question of becoming, followed by the question: becoming *what* exactly? This ‘becoming-what’ is not a question of posthuman or posthumanist, or hyper-humanist possibility. It does not rest on a ‘subject’ but on an Outside not locatable in empirical spacetime, raising cosmological questions. It now becomes a question in search of a more adequate concept: a becoming-other-than-human, becoming an anomalous human—becoming *ahuman*. The self-erasure of ‘human’ is not possible, only a new projection that erases what is now perceived as human. It is as if there is a force that insists in ‘its’ becoming that not any one can control, which emerges via the myriad of inter/intra/actions of and with the Earth. This is how the Earth ‘thinks.’

Nature, culture, and technology are three systems that are the concern of the cosmoecoartisan. Félix Guattari’s (2008) radical ethico-aesthetic paradigm of ecosophy recognizes the inter-relations of mental ecology (psyche), social ecology (socius), and natural ecology (environment). These ecologies are beyond ‘Nature’ in terms of their entwinement with our species’ culture. Guattari’s trajectory has been explored by many commentators. Certainly, the most prominent and high-profiled has been Rosi Braidotti (2019), who performs her own posthumanist ecological vision forwarding the potential of *Zoë*, relentlessly forwarding an affirmative approach to transformative change based on a minoritarian vision

as put forward by Deleuze and Guattari. In this chapter, the cosmological proposition that is put forward differs in its approach from Braidotti by not glossing over the world-in-itself where destruction and extinction need to be faced, and where nihilistic tendencies that are also glossed by posthumanist theories need some accounting, even when there are no adequate and/or hopeful trajectories on offer. Becoming-earth as a materialist and immanent approach that links the planetary dimension with cosmic ones is certainly the trajectory advocated, but there are tensions as to the meaning of ‘materialism’ as well as meanings of cosmology in relation to what is to be done. The acknowledgment of a vitalist conception of matter that is capable of self-organization is but the base level, as is the co-dependency between human and the more-than-human (non-human, inhuman) entities. Becoming-earth brings in the mediated relations with technologies that are elemental (fundamental) for a renewed subject formation. Post-anthropocentric immanent relations are certainly in order, but there are issues as to what form these relations are to take, and how they are to be thought through in a geo-centered ontology.

The Spinozist monism that Deleuze|Guattari adopt has more than one interpretation, as does their call to becoming-imperceptible, seen as the ultimate ‘becoming’ to be striven for. A point where identity politics can be overcome is certainly one such position to be considered. It is to ‘become’ cosmic. Yet, to claim everything is immanently connected is to disregard the need of de-subjectivation, distance, and deterritorialization. The affirmative tendencies of Braidotti’s life-centered egalitarianism, for example, which forwards the creativity of *zoë*, totally disregards the more difficult questions of Thanatos and destructive creativity which the Earth’s anorganic life also calls forth. Does her ‘Zoë-centered egalitarian’ vision embrace all-too-much the figure of a ‘Beautiful Soul?’ Co-dependence of interspecies, while certainly an ethical question that replaces any logic of recognition, is faced with the sexualized, racialized, and naturalized orders that are not about to disappear, although there is plenty of recognition of their forces that continually persist despite the best of efforts to curb them. To think that they will be overcome in some future date is to idealize the posthuman, as if the ‘new human’ is to overcome them in the future. The capacity to ‘endure’ sadly also means death and killing, something our species has hardly come to terms with, except to hold its breath when it comes to atomic self-destruction.

Thanatos, that is the force of devastation, is a repressed problematic, even though Deleuze|Guattari are quite upfront about deterritorialization. The cosmos is both fructiferous and annihilating at the same time: a cosmic natal that remains ambiguous as to what is ‘home’ and what isn’t. It is a ‘cosmic sun’ that birds follow as they migrate from one territory to another, while the Earth’s atmospheric layers are its protective screen that filter, protect, and mediate the effects of solar radiation. The anorganic cosmic is deterritorialization that is always pointing to nomadic movement. It remains indifferent to us, like a cancer or a virus that can easily overtake our bodies. This is the other side of the ledger in relation to the usual hope that ‘art’ can present us with a new affective transvaluative stance. I draw some of my inspiration from Mathew Fuller and Olga Goriunova’s (2020) thoughts on this issue. What is to be done with the list of destructive issues: modern warfare that clear-cuts cities, calculation of probabilities that sets the stock markets on edge, the carcinogens and plastics in water, the perennial oil spills, the proliferation of disinformation (on vaccines and the like), or the North Plastic Gyre with its global waste commons of plastic ... and finally extinction itself, which is broached at the end of this chapter. Each deserves its own question mark and exclamation point. The myriad of devastations—both ‘natural’ and ‘cultural’—are always politicized; a meshing of rhetoric, calculations for insurance companies, judicial wrangling as to responsibility, economic recovery projections, and the socio-political forces and the interests of ‘dark’ money. Negotiations over climate change, COP conferences, and the COVID-19 pandemic are exemplary. Given that it seems impossible to imagine ‘the end of the world’ as we know it, and a situation where a new COVID-19 variant will mutate to the point where no vaccine will be of use, the brinkmanship of advanced statecraft continually persists as opposed to the nuclear threat where the ‘end game’ is clearly in view with the doomsday clock being set and reset as warnings. The Chernobyl disaster presents the horror of what radiation ‘poisoning’ can do, as trees do not ‘rot’ in the exclusionary zone; their death is ‘arrested,’ no longer part of the natural cycle of life-death. Zombie-trees is perhaps a better description.

The question of how this actualization of destruction metastases the virtual is the more profound issue given that the virtual and actual are intimately in quantum superposition like the wave|particle phenomenon. Entanglement here simply means communication at a distance. François Laruelle’s (2017) own quantum musings concerning

non-standard philosophy rely on this physical entanglement, or what he calls ‘without mixture’ or ‘non-separability.’ Devastation, when not identified as a catastrophic event, is the cumulation, that is, the non-linear causation that is unnoticeable until it is in your ‘face,’ like the cancer that you know about when it’s too late to cut out the forgone metastases. In this view of the virtual|actual, it becomes a question of staving off entropy, which the second section of this chapter attempts to theorize by mapping out a cosmology. While zoë-orientated projects would be part of such a cosmology to generate negentropy, the differentiation is made that the *indifference* a world-for-itself takes toward us as a species also needs recognition. I develop the technologies of *Lassen* and *Macht* to strengthen this assertion.

Unquestionably, the nature-culture divide presupposed by the Anthropocene is technologically mediated. Technology, as Guattari (1995) pointed out, transforms the environment and the relations to the social ecology and the ecology of mind, merging the body and technology as translated into a transversal, hybrid, and viral compound. The differentiation from and with Nature has always been the historical legacy of sapienization. The evolution of *Homo sapiens* and the development of ‘techne’ in terms of their mutual constitution are perhaps the key issues here. Our species modification has always been one where nature|culture are mutually inclusive categories. Yet, the moment of their bridging through cosmic ‘events’ of becomings changes both the physiological BwO and the psyche itself. Radically put, the ontological, physiological, psychological, and psychic disposition of various ‘stone-age’ axe-cultures cannot be compared to the string of geological and archeological changes that took place through Neolithic, chalcolithic, iron, animal, steam, electric, electronic to our current ‘plastic age’ revolutions (‘plastic’ denoting both the material and the ability to manipulate and manufacture synthetic matter as ‘new’ elements, the ‘heaviest’ currently (controversially) is the ununoctium (Uuo) with 118 protons). The alchemical imagination is unleashed. When stars explode with the energy of an octillion (10^{27}) atomic bombs, iron turns to gold, gold then turns into lead which eventually turns into uranium through the transformative fusions that take place at the core of atomic nucleus, a process, while not fully grasped, has provided the clues for expanding the periodic table.

A DIAGRAM OF COSMOLOGICAL THOUGHT

Alfred North Whitehead, whose philosophy speaks volumes in relation to creativity and the processes to which cosmoecoartisans are attuned, famously said that all philosophies were a series of footnotes to Plato. Strangely, it seems out of line to say that many current philosophies, except perhaps François Laruelle's non-standard philosophy, follow Deleuze|Guattari's concept creation in one form or another. The quip made by Foucault that this was to be a Deleuzian century seems to have rung true. Both Deleuze|Guattari were eventually able to cut ties with Lacan, but in *Anti-Oedipus* they still acknowledged his position, so much so that Lacan bitterly complained that his idea of 'machination,' stemming from his own cybernetic influences, had been hijacked (see Elizabeth Roudinesco 1997). In what follows, I will read Deleuze|Guattari and expand their orientation through three diagrams that Lacan (1981) developed in Seminar XI, where I believe it is possible to show that the nature-culture, non-representation-representation, and virtual-actual entanglements 'collapse' or decohere when an 'event' occurs. These diagrams are just one way to articulate a cosmology for the Anthropocene based on their writings. In short, the contention is that the encounter with non-identity ('givenness') in the time of becoming (Aion) is mediated by a technology that is an apparatus of art-science, an assemblage that 'matters' to the energy expenditure of any system. The terms specters, weirdness, and of course queer have been used to describe such becomings, as has 'gap' and 'zone of indiscernibility' what Lacan called 'quilting' or what Alfred North Whitehead (1978) developed as the term 'superject,' which aims to account for the emergence of an 'actual occasion.' Philosophy is littered with conceptualizations that address this entanglement as exchanges of intensities (affects and percepts). It is a meeting place between the non-human-human-inhuman (AI) where the 'human' becomes obviously questionable as a molar historical concept, and ahuman possibilities open up. I hope to show how speculative realism, and specifically some aspects of object-orientated ontology (OOO) as developed by the Deleuzian-influenced work of Levy Bryant (2011) rather than the orthodoxy of Graham Harman (2018), who boasts of a 'theory of everything,' can be identified in this developed diagram when 'things' and 'entities' are in question. Perhaps the surprise of the unfolding diagram(s) will be the close relations that Deleuze|Guattari have to Lacan's three registers (Real, Imaginary Symbolic). As I try

to show, Lacan's Real is the virtual realm, and thus, the *radical* Real (following Laruelle) exists totally outside the purview of empirical knowledge, which can only be speculated; the Imaginary is the 'happening' of the event; and the Symbolic is squarely in the actual-molar realm.

The idea of the diagram follows its conceptualization by Deleuze in his Francis Bacon book (2005). This is not a 'diagrammatic methodology' or 'diagrammatology' as in some post-qualitative (better neo-qualitative) research approaches, where the relationality of design is forwarded. Nor is it the naïve notion of assemblage as an arrangement of internal|external becomings of relations in motion. The diagram also departs from the usual conception of it simply being a representational schema as 'form' taken up by some educators. The diagram 'never functions to represent' but 'constructs a real yet to come.' It is purely performative and operational, not having a form or substance of its own. Diagrams are meant to destroy existing states of affairs (concepts of pictorial forms, images of thought, regimes of signs) to construct a new reality. In this sense, they are fictions: generative and transformative tools, a 'pragmatic semiotics' that does not privilege any specific type of sign regime (visual, linguistic, verbal, pictorial). In the context of the conceit of this chapter, diagrams perform 'creatively,' a vector toward what is yet unformed, yet to be actualized; they tarry with the Real, which constitutes the matter of these diagrams, the process of mapping, and a germ of order. Diagrammatic thought is pedagogical in this sense, an approach I have followed in my own teaching over the years.

The diagrams I am referring to initially, prior to their modification, elaboration, and examination are well known and used in Lacanian cinematic theory to explore the inter-relations between the ego ideal and Ideal ego, or the interaction between the gaze and the look. In this case, I will be referring to the gaze as the realm of the 'givenness' of Nature that is non-representable, ultimately quantum in its state, while the look will be 'perception' in its subtractive state, which collapses (decoheres) during an 'event.' I start with the first diagram, which presents the naïve notion of perception as representation mediated by technology. It has certain elaborations which I will refer to in the diagrams that follow (Diagram 1: Fig. 11.1).

This first modified Lacanian diagram maps out the 'correlationism' between subject and object that is broadly understood as the position of representation (transcendental critical idealism) as developed along Kantian lines. Deleuze was to provide a critique of representation in 1968

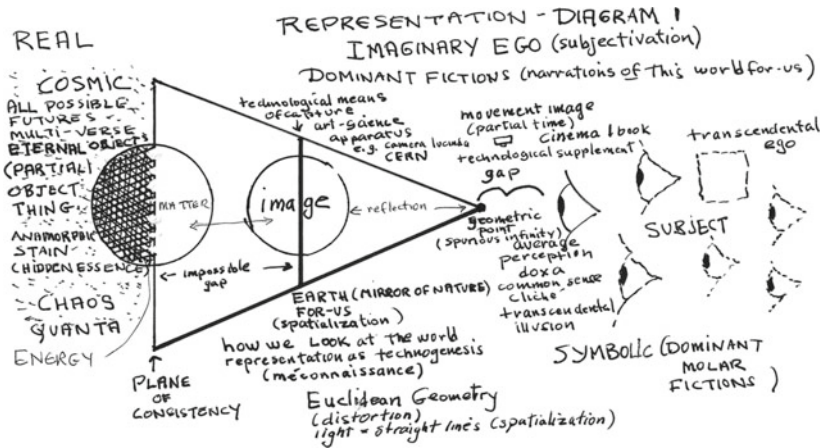


Fig. 11.1 jan jagodzinski, 2021, earth-representation-world-for-us-analogue

as his principal thesis for his Doctorat D'Etat, the now often cited *Difference and Repetition* as translated by Paul Patton in 1994. The 'dogmatic image of thought' is critiqued via four postulates: the natural disposition 'to think,' subjective unity of 'common sense,' objective unity as the recognition or categorization of the same object, and lastly, representation itself where difference is subordinated to identity via concepts, predicates, analogies in judgment, and finally, resemblances in perception. Daniel S. Smith's (2018a) entry in the *Stanford Encyclopedia of Philosophy* masterfully maps all this out.

The first diagram points out some of the elements that Deleuze introduced, and they will be revisited. To note the diagram shows the three Lacanian registers at play. The (radical) Real refers to the Cosmos, which is characterized by chaos as well as all possible unfolding futures as multiverses. In this respect, I follow the work of the theoretical physicist Lee Smolin (2019) whose *The Life of the Cosmos* posits the notion of time that is consonant with Deleuze's Stoic appropriation of time as Aion—that is, moment to moment. There is nothing outside 'time.' The term 'no time' will be introduced in a further diagram to indicate its relativity. Multiverse in this diagram simply refers to the contingency of events as to all-possible futures co-existing, as to which 'future' becomes actualized remains uncertain. In the *radical* Real, the quantum particles are

partial, in the sense that they cannot be completely known. Potentially new quantum particles in the vacuum tube are theorized as the recent Muon g-2 experiment shows (Fermilab 2021), as well as claims that a high-energy Neutrino has been discovered. Given that the force of gravity remains problematic for quantum mechanics; that is, General Relativity and Quantum theory are yet to be reconciled, physicists like Smolin are skeptical of current formulations and posit a ‘beyond – ’ a new physics where black matter and black holes hold keys to new vistas. This is also the case for Chanda Prescod-Weinstein’s (2021) *The Disordered Cosmos*, where dark matter and spacetime are rethought. Dark energy for instance has itself been questioned (Loeve et al. 2021). The question of black holes and dark matter is further discussed in the diagrams that follow.

The terms ‘objects’ and ‘things,’ and in Alfred North Whitehead’s case ‘eternal objects’ as ‘pure potentials’ (*res potential*, sometimes as ‘real possibles’), appear often in the new materialist, post-anthropological literature. The social anthropologist, Tim Ingold (2010) has made a defense as to why ‘things’ not objects should be the better term. Following Deleuze|Guattari, he recognizes that the forces of the Cosmos are what enlivens (intensifies) matter. Ingold makes the point that a ‘thing’ is a gathering together of the threads of life, an ongoing process, a ‘parliament of lines’ (Ingold 2010, 5). In the diagram, Ingold’s Thing is closer to the *plane of consistency* as there is still this idea that its complexity as a ‘thing’ can be known for its affordances that can be traced to the processes that shape it at a particular point in time. Levi Bryant’s (2011) ‘democracy of objects’ is consonant here as well. The term ‘subject,’ in this first diagram, or the ‘who,’ which experiences a ‘thing,’ has a phenomenological relationship with it. Alfred North Whitehead uses the term ‘eternal objects’ (which sounds very misleading) to simply acknowledge pure potentials in the radical Real, or pure affordances, in fundamental contrast to any actual entity (*res extensa*); they are virtual, yet to be ‘determined’ in what relationship they will partake in an ‘actual’ entity; they are mere possible forms of definiteness. Such eternal objects are ‘conceptual prehensions’ in his cosmology—that is, the experience of pure givenness—whereas physical prehensions are already the experience of actual entities (objects).

There is also Graham Harman’s complex mapping of ‘objects’ where ten possible links are provided between ‘real objects, sensual objects, real qualities and sensual qualities.’ Real objects have paradoxically essences without ‘essence.’ Meaning that there is always a ‘hidden’ aspect of any particle. For my purposes here, it is enough to point out that there

is a dimension of any object, or thing, that remains ‘radically Real’ to follow François Laruelle, and will never be completely known. This is the ‘darkened’ (gridded in the diagram) part of the Thing. In this sense, any cosmology remains fictive and speculative—be it western, eastern, or indigenous. I would support the work of David Burrows and Simon O’Sullivan (2019) in their attempt to show the power of fictioning in contemporary art and philosophy. The ‘hidden’ aspect of things in the Lacanian context is called a ‘stain’ in the Real. It is marked as an ‘anamorphic stain.’ Such an ‘object’ would ‘reveal’ itself when the technology (i.e., language) of its capture changes via encounters with it. Until then, it remains hidden, unconscious, and structurally repressed in the Lacan context. What ‘frames’ the ‘stain’ should be understood as the ‘allure’ (in Graham Haman’s terms) or ‘jouissance’ (for Lacan) and (productive) ‘desire’ (for Deleuze|Guattari) or ‘fetish’ for Freud when it comes to what can compel the ‘correlational’ relationship between subject and object to hold as there is an exchange of affects and percepts—that is, the affordances or potentialities of the ‘objects’ (things).

Like Whitehead, Deleuze (1993) introduces his own concept of the ‘superject’ to supplant the ‘subject’ in recognition that the event of perception is temporal and formless and constitutes its own world. It cannot be accommodated in Diagram I. As Deleuze explains, “[t]he point of view is not what varies with the subject, at least in the first instance; it is, to the contrary, the condition in which an eventual subject apprehends a variation (metamorphosis), or: something = X (anamorphosis) It is not a variation of truth according to the subject, but the condition in which truth of a variation appears to the subject” (1993, 20). Deleuze has turned the tables on Diagram I and cannot be understood until we come toward the end of this unravelment of diagrams. With cinematic and digitalized technologies, where the image appears on the moving screen, there is a move from spatial existence (Diagram I) to a temporal or digital existence. Diagram I is caught by analogue capture where the semiotics of indexicality hold. It is the primary way that the emphasis on coded language by Lacan and Derrida was to break with representation by calling on open-system thinking, extended further by Deleuze|Guattari. The ‘mirror of nature’ (as reflection) that defines the system of a window and a ‘world out there’ ends up being replaced by “a computer screen in a closed room ... we read the world more than we see it” (Deleuze 1995a, 157–158). Existence in the digital ‘capture’ is temporal, a projection that

alters a ‘point of view,’ therein changing the world-for-us rather than positioning one in it. The transition from a movement image to a time-image takes place. Lacan’s notion of the ‘gaze’ has validity here as technological mediation shifts from the still photograph to film. Friedrich Kittler’s (1999) interesting claim that Lacan’s three orders directly address the three emergent technologies of the nineteenth and twentieth centuries is of import here. Gramophone (acoustics) as the haunt of the Real, film (optics) as the Imaginary, and typewriter (mechanized writing) as the Symbolic redefined the subject as an ‘information machine’ open to manipulation. The gramophone appears to be the most puzzling connection, but the recording and reiteration of music and voice lead to an acoustic experience with ties to hypnotism, suggestion, and the functioning of the ‘psychic apparatus’ as ‘psychophysics,’ which affects the functioning of the brain and the central nervous system, as Jacques Attali’s (1985) study of ‘noise’ so dramatically shows. Deleuze’s ‘superject’ does not have the same relation to the ‘object.’ The subject—as the ‘interface’ of the assemblage—has drastically changed since the ‘cinematization’ of the world. The degree to which the immersion of the superject becomes part of the digital assemblage, as for instance in total VR immersion where the distinction between ‘human’ and ‘machine’ seems to disappear, or as in the total entertainment possibility of immersive gaming where the console player is perpetually in the ‘flow’ of body-screen image exchange, has resulted in the simulacrum of hyperreality as prophesied by Jean Baudrillard (1983).

To move into the second part of Diagram 1 is to raise the question of the image itself, which is ‘looked’ on by the subject (imaginary ego). The image here is presented as being ‘complete’ or whole, classifiable through a signifier so that it is recognized from a particular angle, situation, context, and so on. I have drawn one ‘eyeball’ to indicate that this object is being perceived, but also that there are other ‘eyeballs’ who may have different understandings of the object; nevertheless, there is epistemological agreement that there ‘is’ an object phenomenon to be interpreted, discussed, debated (critically), and so on. Here, we introduce the idea that this ‘mirror of Nature’ (the phenomena that are being interacted with) is so represented through a *technological apparatus* of capture to make it ‘appear.’ *Tekne* (Techne) such as Walter Benjamin’s allusive ‘optical unconscious’ as part of a more comprehensive understanding of the technological unconscious (for Lacan, the ‘structure of language’ is one such technology) is not taken into account in Diagram

I when it comes to ‘natural’ perception, a criticism made by Lacan of his friend Maurice Merleau-Ponty who came late to this conclusion. In this diagram, all perception is being constructed by the subject as embedded in a culture (symbolic order), which ‘always already’ means the coding of discursive language. An ‘image of thought’ is being both consciously and unconsciously imposed, often demanded through ‘order words.’ Lacan will always speak of *méconnaissance* as the tension that emerges between the ego ideal and Ideal Ego of the symbolic Order. Dominant fictions and narratives shape this ‘image of thought’ (molarity), which is where Deleuze stresses doxa, common sense, clichés as structuring molar lines. Anyone not conforming to the stated doxa is seen as abnormal (neurologically, physically, autistically, and so on).

When it comes to structuring technologies, from the Camera Lucida of the fifteenth century to the CERN facility of particle acceleration in Geneva, these apparatuses should be understood in their ‘maker context,’ where science-art come together to capture some aspect of the Real (real) through the construction of the ‘experiment.’ Or, in relation to art-science, to render visible the invisible, in Paul Klee’s terms, the cosmic forces of vibration so that we become sensitive to them, as Klee does through his conceptualization of the ‘grey point’ in his color cosmology. The entire modernist movement in art was precisely a coming to terms with the extraordinary changes in the physics of spacetime at the turn of the twentieth century as Linda Dalrymple Henderson (2013) has documented (i.e., the exploration of the fourth dimension of time in non-Euclidean geometry). Diagram 1 is ‘stuck’ in Euclidean geometry, where light is perceived in straight lines (it does not bend with gravity, nor is it fractal). It remains spatialized by the vector space composed of *three-dimensional orthonormal vectors*, as shown in the diagram. Moreover, the cinematic eye as theorized by the ‘movement image’ and the slate of directors that Deleuze (1986) explores in *Cinema I* (Sergei Eisenstein, John Ford, Alfred Hitchcock, and so on) filmed and directed under a semiotic discourse that privileged the index sign in C.S. Pierce’s classic taxonomy, giving photography from the outset a unique relationship with reality. The anthropocentrism of Diagram 1 sets up the Mirror of Nature as an “Earth for-us” through representation as technogenesis (cf. Hayles 2012; Stiegler 1998). There is an impossible gap between the Real and the Imaginary; at the same time, in the final diagram, this impossibility can be understood in quantum superpositional terms as communicating (entangled) at a distance.

To come to the end of Diagram 1 is to make some further remarks on the Subject side of things. The first thing to note is the geometric point: the place where lines meet in the various forms of perspectives taken (it can be one, two, three point to multiple points including anamorphic projections). This is a ‘spurious infinity’ that cannot be truly occupied by any subject. It remains an abstract ideal, and hence, it is perceived as being possible to verify by others who are viewing and interacting as a form of scientism and ideological orthodoxy. An impossible gap remains between this point and any observer, interpreter, or interactor. The doxa that is formed by occupying this point is seen as the symbolic order of confirmation as to the need for a ‘transcendental illusion’ along with the conceptualization of a ‘transcendental ego’ to confirm the dominant fiction(s) in play. Deleuze, drawing on Bergson’s concept of duration, will dispel this ‘transcendental illusion’ by developing the notion of ‘differential heterogenesis’ (Sarti et al. 2019). His *Cinema 1* book concerning the movement image is able to show how partial time is grasped by classical Hollywood narratives and beyond where closed systems are still operative (beginnings with endings). Yet, it should be noted (and as illustrated in Diagram 3: Fig. 11.3 that will eventually bring together Diagrams 1: Fig. 11.1 and 2: Fig. 11.2 together), the ‘transcendental illusion’ that enables us to function ‘in’ this world, does not go away. It is replaced by the digital technological screens,

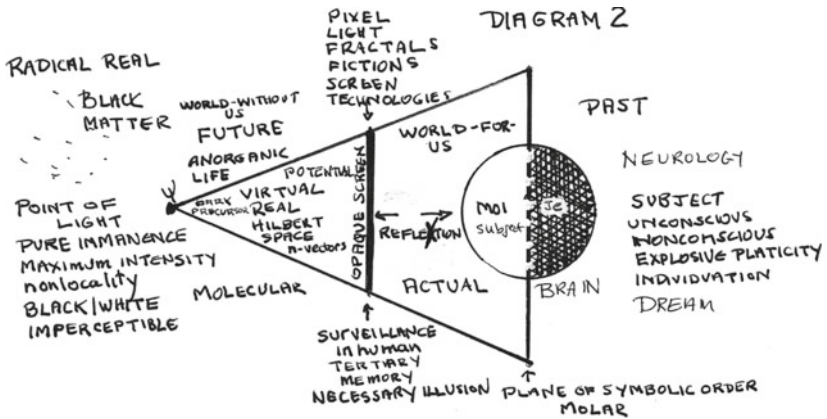


Fig. 11.2 jan jagodzinski, 2021, planet-non-representation-world-without-us

which generate ‘photo-fictions’ as embedded in the broader conception of ‘philo-fictions,’ to follow François Laruelle (2012a) here, as a new Imaginary. The place of occupation is non-relational, a ‘posture’ not a position, which is in keeping with the indeterminate zone of an event from which a self-refleXion might emerge (what I call an infinitesimal black hole further on). The use of the term refleXion rather than naïve reflection or ‘reflexion’ of poststructuralism indicates the X of the partial knowledge possible of a world-in-itself, as developed in Diagram 2 (jagodzinski 2008) (Diagram 2: Fig. 11.2).

Lacan’s second diagram reverses things. It is meant to show how the gaze (from the perspective of an unknowable and invisible Other as the unquestioned Law and its accompanying taken-for-granted norms, ideologies, customs, and so on) positions the subject in a tableau—or picture frame as a ‘subject of representation,’ one that is given a social identity within the Ideal Ego of the social order. Lacan has less to say on this side of the ledger, and there have been various interpretations of what the gaze is—i.e., who ‘covets’ the gaze through the ‘look’ and so on so as to map out various social inequalities. For my purposes, the gaze becomes the ‘given as given’ or ‘givenness’ as such. It is imbued with affects and percepts. It is Nature (the electromagnetic spectrum) as a differentiated Other that ‘gazes’ and ‘penetrates’ us through various intensities of vibration. In contrast, Lacan’s gaze is a projection of the Law as a transcendent empty signifier that cannot be occupied. It ‘covets’ the indifference of Nature by personifying it as an unknown force (the Phallus), which is claimed to be historically descriptive and not prescriptive. The technology of language is elevated in its very ‘failure’ to ever reach closure. In this sense, the Symbolic (as language) is ‘natural,’ an *non-human* object, which is ‘humanized’ when put to use.

To avoid such personification of the gaze, i.e., Nature as the force of language, I follow the interpretation of a new quantum mechanics as elaborated by Stuart Kauffman’s (2016) cosmology and Roger Penrose and Stuart R. Hameroff’s (2014–2016—ongoing) ‘Orch OR theory’ (orchestrated ‘objective reduction’), which suggests a connection between the brain’s biomolecular processes that are *non-computational* (non-algorithmic) and the basic structure of the universe. Penrose and Hameroff refer to future developments of QM where the physical processes underlying quantum state reductions recognize quantum gravity, which currently presents QM’s shortcoming. Roger Penrose’s (1989) ‘induced collapse’ theory takes into account gravitation, which,

according to special relativity, bends space and time. Penrose and Hameroff both postulate that collapse happens on its own (no measurement needed) when a certain energy threshold or limit is reached due to the mass of two particles that are in superimposition with each other to reach 1 Planck mass. This goes on in microtubes inside neurons; these microtubes are protein skeletal structures within neurons that provide two or more *image* states existing in quantum coherence (superposition as possibilities) with one another. The pre-conscious superposition, in this state, exists as a number of possibilities that collapse into an ‘objective’ reality when a choice has been made. Conscious perception occurs after, or follows, once the choice has been made (the famous neuronal delay), which is to say there is a ‘backward’ (retroactive) time effect in the brain suggesting that the quantum state reduction sends quantum information back in time in the order of hundreds of milliseconds. Penrose and Hameroff speculate that the effects of quantum gravity during the ‘moment’ of choice cause a bulge in the spacetime fabric to the smallest measure on the Planck-scale (10^{33} cm). This leads to a lowering of energy in the system as spacetime curvature has reached a certain threshold.

In consonance with Penrose and Hameroff, there is also the ‘trans-actual interpretation’ or ‘quantum retrocausality interpretation’ (RTI) by John Cramer (1988) where the future affects the past when it comes to superposition explaining non-locality, whereby time (finally) receives a non-linear accounting at the quantum levels. This position aligns with many touchstones within Deleuze’s own sophisticated developments of time. Einstein’s so-called “spooky action at a distance” is no longer so spooky. Schrödinger’s entanglement of non-locality has a theoretical explanation through Cramer’s equations. This is more in keeping with the Deleuzian third synthesis of time, wherein the future affects the past. This paradox of time appears at the start of the First Series in *Logic of Sense* (1990) with the figure of Alice in ‘wonderland.’ Alice becomes larger than she was, and at the same time, she becomes smaller than she is now. ‘Bigger Alice’ (future) and ‘smaller Alice’ (past) are non-locally connected through the ‘emitter’ Alice, whose becoming is in the position of the event of her genesis (as ‘emitting,’ which is a verb). In this sense, Alice is a ‘potential power’ with the paradox of becoming or not-becoming, expressed as a quantum difference. The RTI entanglement will be a useful quantum concept in Diagram 3 where it will be argued that the ‘quantum event’ is comparable to the position of the emitter, an interval where transaction takes place between the future causing the past as in the

non-locality of two photons that are in communication with one another in Cramer's RTI theory. I call this event an instance of reflexivity, with the grapheme 'X' marking the contingency of the event as it occurs in the zone of indetermination as conceptualized by Deleuze (jagodzinski 2008). In the last section of this chapter, I propose that this X refers to a 'decoherence event' in the brain as neurological links are made that (as shall be put forth) are comparable to 'infinitesimal' black holes in their quantum theorizations following Penrose and Hameroff. X marks the *ahuman* such as it, the 'radical Real' leads to, for philosophers like Ray Brassier (2007) and François Laruelle, the necessity to face nihilism in its 'rational intelligibility.' Laruelle (2021), I believe, is still caught struggling with what 'is' the *generic human*, or rather leaving it as open as possible. The generic human could be said to be *ahuman* as well—albeit never reached or attained. The concept remains 'insufficient,' a 'failure,' and rightly so! After all, we are alien to ourselves as Julia Kristeva (1991) has taught us!

The challenge to the standard Copenhagen QM, which I follow in Diagram 2, is further confirmed by Christian de Ronde (2014, 2016; de Rode and Moján 2019; de Rhode and Massri 2021) in a series of articles where he develops the idea of a *potential (virtual) reality* that follows the quantum path as developed by Deleuze|Guattari. Along with Roberto Massri (2021), de Ronde is bold enough to suggest it is the 'collapse' of potentiality that needs recognition. Entanglement can be objectively understood through the 'potential coding of intensive and effective relations,' much as Deleuze maintains that intensive relations (as events) emerge from the plane of immanence. It should be noted, like David Bohm, the 'form' of the intensity in the quantum field is what creates the potential: even a weak field can have strong effects on a particle, as can non-localized affect from a distant environment. This is much the same direction Stuart Kauffman (2016, 39) takes with his recognition that *res potentia* and *res extensa* are linked through measurement, a recognition of 'possible' worlds that are virtual and not substantive. Schrödinger's cat puzzle is not either-or: dead or alive, but the cat is 'possibly' alive and *simultaneously* 'possibly' dead. Impossible words are posited, not unlike Deleuze's both / and logic of disjunctive synthesis, the same quantum logic that pervades the writings of non-standard philosophy by François Laruelle. Superposition in de Rode's theory also follows the QM of Gilbert Simondon's (2020) emphasis on the 'pre-individual' in his theory of individuation. It encodes powers and *potential* exposed

in actuality through elementary processes. What happens in actuality, changes what happens in the virtual Real, and hence time is affected as well in relation to past-present-future. Here (again) the ‘retrocausal’ equations of Jim Cramer come into consideration. Vincent Bontems and De Rode (2019) follow Simondon’s QM to support their theory of virtual possibilities. Individuation, phase change, and the pre-individual are key concepts that underlie the notion of chaosisms, of fundamental creativity, introduced by Deleuze|Guattari. As Andreas Bardin (2021) points out, Simondon’s QM is opposed to the new materialism (more below). It is here that the dance and play of creativity take place through an event (illustrated in Diagrams 3: Fig. 11.3 and 4: Fig. 11.4).

These theories, in one form or another, speculate on a dynamic (cosmic) universe, to open things up, *a version* of panpsychism. Panpsychism calls to mind the recent slate of immanent theories of matter which posit the agency of things in one form to another: their parliamentarism (Bruno Latour), vibrant matter (Jane Bennett), *zoë* (Rosi Braidotti), and any number of neo-animist ontologies put forward by the global spate of indigenous neo-animist cosmologies. Recent work in cognitive biology supports this direction, what I refer to as *encephalization* in this chapter. Along with Kauffman, De Rode, Penrose, and Hameroff, this also includes the speculations of mind and consciousness as developed by David Bohm (1990) and Bohm and Basil J. Hiley (1993) where an implicate and explicate orders are conceptualized. Mind and matter are intra-related and analogous to the distinction between noumenal (virtual) and phenomenal (actual) domains. For Bohm, ‘particles’ of physics have ‘primitive mind-like’ ‘qualities.’ Particles do not follow a well-defined trajectory; they are accompanied by a potential field present in each *point* in space acting on the particle, which is at that *point*. Matter is imbued with mind as degrees of autopoiesis. Mental and physical states emerge by actualization (explication) as an unfoldment from an implicated (psychophysically undivided) enfolded dynamic order in its *holomovement* (as in Alfred North Whitehead’s process philosophy). This results in a holographic model of the brain and the cosmic universe (Talbot 2011).

The above QM theories, which recognize the Deleuzian potential|actual entanglement, challenge the popularization of Karen Barad’s (2007) quantum theory of ‘agential realism’ that has a strong queer-feminist following, where all phenomena are taken to be *intrarelatational* through her Bohrian instrumentalist reading. There is a fundamental

marked division between physicists, such as Barad, who are supportive of an ‘epistemic view’ (instrumentalist approach) following Bohr, where the ‘measurement’ problem becomes one of discourse in relation to the apparatus conceived for the experiment, and physicists who support a ‘realist’ approach (Carroll 2016). Barad’s ‘agential realism’ has been severely criticized for her interpretation and appropriation of Bohr by physicists of note (Faye and Jakslund 2021). It seems there is no way her views on verifiability can hold when it comes to repeating laboratory experimentation, drifting into questionable relativism that her ‘diffraction reading methodology’ falls into as well. John von Neumann’s (1933) work on the ‘catastrophe’ of infinite regress of a measuring device ends up as an ‘agential cut,’ which Barad adopts, but then with all the consequences that follow her onto-ethical-epistemological claims when interpretation and a decision are made (Olkowski 2016). One might say, agential realism suffers from the very anthropocentrism that is being paradoxically rejected with its call to ‘discourse,’ however broadly interpreted. David Harris (2021) has outlined many of these concerns. Barad’s quantum void and her intra-relationalism have been equated with Deleuze and Guattari by any number of new materialists (Davis 2021; Sheldon 2016). I have strongly argued against such a claim to show that these are divergent understandings of QM and cosmology in general (jagodzinski 2021a) Barad dismisses the Einsteinian ‘realist’ position, what John Stewart Bell called “beable” in contrast to “observable.” It is John Bell (1990) who often raised the tensions between instrumentalist and realist theories. As Bell writes:

It would seem that the theory is exclusively concerned about ‘results of measurement,’ and has nothing to say about anything else. What exactly qualifies some physical systems to play the role of ‘measurer’? ... But experiment is a tool. The aim remains: to understand the world. To restrict quantum mechanics to be exclusively about piddling laboratory operations is to betray the great enterprise. A serious formulation [of QM] will not exclude the big world outside the laboratory (34).

Schrödinger’s wave function is about something ‘real.’ *It does not involve probabilities*, and hence it is deterministic. Experimental work suggests that the Bohrian ‘epistemic view’ is not totally correct (Ringbauer 2015); the wave function *does* correspond to reality as fundamentally shown by

Louis de Broglie. The only issue is that it is a ‘reality’ that cannot be known as it exists in a radical Real (following François Laruelle).

Barad’s position has nothing to say about the challenges that Bohm’s, along with Louis De Broglie’s, ‘pilot wave theory’ (also known as Bohmian mechanics, or dBB) presents concerning a realist QM position. Pilot wave theory speculatively ‘proves’ how Schrödinger’s wave function (ψ) deterministically ‘guides’ a particle along a *particular* trajectory from a possible *set of trajectories* a particle can take. Bohm develops two mathematical equations, derived from ψ ; one (real), the guiding field, and the other (imaginary), the guiding equation provide the missing ‘hidden variables’ (the position of the particles) so that the probability of a particle’s location can be determined by a third equation (the Quantum Equilibrium Hypothesis). With Bohmian QM, particles remain ‘classically’ real. There is no collapse as the wave and the particle are considered ‘real’ entities. For Bohmian QM, there is no collapse as there is no superposition.

dBB theory solves both the measurement problem and non-locality. It is the wave function that guides the particle and its position found as the particle can be determined from the place that it started. The hidden variables can be identified when the position of the particle is determined. The usual dismissive claim is that Bohmian QM ends up with the same results as the standard Copenhagen position, and in this original version in 1952, offers no true insights as to what goes on at the superpositioning levels. Yet, as developed above, there has been a new recognition of Bohm’s ‘realism’ and the holographic notion of consciousness. Affects from a distance (non-locality) are revitalized from a new perspective. For Bohm (1990), the key element in understanding non-localism is active communication (mind) which puts form into the energy (the quantum potential) that gives shape and form to the particle. The ways in which particles interact are dependent on the pool of information (here we can say the conscious ‘problematic’ or Ideal in Deleuzian terms) within the whole system in ways that cannot be pre-assigned, supporting Penrose’s claims of non-computability.

The quantum potential for a whole system (the ‘problematic’) is non-local, bringing about order or form (actualization) or emergence (in the language of complexity theory). For Bohm, active information (let us call it ‘desire’ in Deleuze|Guattari terms) is a rudimentary mind, or the way matter behaves (vibrates). Actualized form would follow the ‘natural’ (gravitational) collapse in microtubes inside neurons that Penrose

and Hameroff's quantum brain biology (Orch OR) posit, generating variations of consciousness from "the flux of fundamental participation" (Bohm 1990, 9) of 'substances' in the virtual Real of Hilbert n -vectorial spaces (otherwise known as the 'plane of immanence'). It should be noted that Hilbert space does not take into account gravitational force (unlike Penrose and Hameroff's speculative projection does). By not taking into account the gravitational force, QM presents a 'smooth' spacetime background above the Planck-scale where gravitational effects are negligible. QM begins to break down at the Planck-scale where spacetime appears to warp and vibrate wildly. In this sense, Penrose and Hameroff are effectively saying that the decoherence (or collapse) that occurs in the brain are 'infinitesimal' black holes. I return to such speculation in the last section of this chapter. In Diagram 2: Fig. 11.2, the 'point' of light and its accompanying dark matter is considered as radical Real, or as the unknowability of precisely the full extent of the wavefunction, which would require another physics that comes to terms with special relativity (gravitation) and QM. While Bohmian mechanics has similar limitations when it comes to gravity and special relativity theory, it is crucial for generating what I hope to identify as a 'virtual realm' through its aspect of 'hidden variables' that form the plane of immanence.

The standard Copenhagen QM position has been questioned (Weinberg 2017). But, perhaps the more disconcerting, postured position comes from Anne A. Kerslake (2021), who presents the distinct possibility that there "could be no wave-particle duality, but only waves?" Her claim is that: "The fact of the matter is that there is not one experimental result which demonstrated their existence" (98). The term 'particle' is very misleading as a generic term to designate the quantum object. It further leads to all sorts of claims for 'new materialism' that gives the impression that we are dealing with 'objects' as described above. Matter is waves (de Broglie) as in the electromagnetic spectrum. There is no 'measurement' problem, as Kerslake points out, if an 'observation' is a direct interaction with the 'object' itself, then this is a 'postinteraction.' Matter as a wave belongs to 'preinteraction' and no longer exists when a 'measurement' is made. It becomes a localized 'particle' as decoherence has taken place. But, all this is consonant with the dBB position as pointed out by Jean Bricmont and Sheldon Goldstein (2019; Bricmont 2016). Kerslake calls on A. S Sanz (2019) to show how a modified Bohmian wave-only theory is possible where the 'hidden variables' are removed and 'particles' (their trajectory paths) are no longer relevant, making Bohmian

theory a wave-only theory. While such a modification may well be established, ‘hidden variables and Bohm’s concept of an ‘implicate order’ are more in tune with a Deleuzian approach, as well with Kauffman’s position where ‘possible quantum potential’ (worlds) are recognized.

The point that can be made is that ‘measurement’ is not necessarily a prerequisite for decoherence to occur. It is more accurate to say that the phenomena that are produced via the measurement apparatus are ‘particles’ (as *partial* objects). The science-art apparatus or art-science apparatus is understood via the need for ‘concept creation’ in order to claim insight into the (virtual) Real as a *world in-itself* in a particular localization. This world-in-itself (which will become more apparent in Diagram 3: Fig. 11.3) can be understood as the creative ‘actualization’ of the potentials (or possibilities) of a *virtual* Real, but not the *radical* Real itself, which is a world-without-us (the radical Real of superposition, dark matter, and the like). To follow François Laruelle here, one can say that these are ‘clones’ of the radical Real; they are only glimpses of reality—philo-fictions which need to be supplemented via concept creations, such that eventually they become accepted as a *méconnaissance in Lacanian parlance*, a transcendental illusion as a ‘world-for-us.’ The world-for-itself presents us with the realizations of nihilism, as theorized ‘face on’ by Ray Brassier (2007) and John Marmysz (2003). Both argue that nihilism points to a realization that the meaninglessness of life is a counterbalance to shallow optimism and arrogant confidence in human power; that, despite the achievements reached, our species possesses a finite amount of mastery and control over our destiny. For Brassier, it sets out a course of hyper-rationalism to face the transcendental nihilism that leads to extinction, while for Marmysz a healthy dose of humor is needed to face the absurdities that constantly happen.

So, now to begin to address the full implications of Diagram 2: Fig. 11.2. Lacan posits a point of light that (obviously) is radically de-anthropocentrized. Posited as a ‘gaze,’ it is fair to say it is a specter that ‘shows itself’ only when a ‘violation’ or ‘crime’ has been committed outside the accepted rules and the Law then ‘appears’ out of hiding. In this diagram however, light is ‘all’ waves (as in Schrödinger’s wave function). It is composed of the electromagnetic spectrum, the oscillation of electric and magnetic waves. It is what I am calling the forces of the Cosmos, which are inadequately understood. A further point to be made is that electron waves are not the waves of electronic matter in the way ocean waves are waves of water. Donna Haraway and Karen Barad’s

‘diffraction methodologies’ become questionable in this ‘light,’ to use a pun, as (so often) interference waves in their writings (and their ‘followers’) are taken to be analogous to a stone dropped in water where its wave will interfere with another once another stone is dropped simultaneously or at a later time. Max Born showed that electron waves are waves of probability. When a free electron collides with an atom, there is no ‘certainty’ in what direction it will bounce off. The electron wave, after encountering the atom, spreads in all directions. True, this is like an ocean wave after striking a reef; however, the electron itself does not ‘spread out.’ It seems that in these analogies what the electron (‘stone’) does is undertheorized, because a stone (unlike an electron) simply sinks down and is predictable, a classical macro-example. The undivided electron goes in ‘some’ direction, but it is not precisely predictable as to which. It may go in a direction where the wave is more intense, but all directions are possible.

The point to be made is that the interference patterns that are called on by Haraway and Barad are somewhat misleading. It is a *wave-like* pattern. We can further articulate the complexity of what is going on by the mathematics of moiré patterns that Roger Penrose has much to say about as he developed an infinite pattern that never repeats (an aperiodic pattern) using only two tiles! Two copies of Penrose’s pattern printed on a transparency form a moiré pattern (an interference pattern) when overlaid on top of each other. It is possible to rotate one of the patterns in such a way until they line up, except for lines which appear to be dark. The dark lines that form are where the pattern *cancels itself out* and would then ‘reveal’ the moiré interference. But this is an arduous and almost impossible task to get right. Overlaying two patterns cannot be matched up so perfectly as there will always be *some difference*, without any cancellation seeming to occur. For example, there is an infinite number of patterns which are possible using only two tiles (kites and darts). It is impossible to tell which pattern of the infinite number one is standing on. The paradox is that there is an uncountable number of versions that can be produced. Just by looking at them, you can’t tell them apart. Any finite region of one of the tiling patterns appears infinitely many times, through all the possible versions. It is impossible to see the whole pattern that has been formed by the ‘interference’ between these two tiles and to extrapolate a ‘diffractive methodology’ given this complexity of events seems spurious.

The glass artist Shelly James and the sculpture artist Liz Deschenes show that the moiré patterns they create generate *illusionary* lines that

the brain registers. The point (once more) to be made, is to ‘grasp’ this ‘line’ that is formed, which disagrees with the surrounding pattern, is extremely difficult. The question that emerges with diffractive methodology (a form of neo-deconstruction) is: just how does the interpreter know that the ‘interference’ line has been adequately identified when a ‘working through’ between two or more theories is being made? Moiré super-positioned patterns and grids, or the interference patterning of monochromatic light diffraction known as ‘quantum carpets, carpets of light,’ strike me as very complex events (Berry et al. 2001), much more complicated than the analogy of waves rippling against one another suggest. Depending on the mathematical angle of misalignment, two identical patterns can produce a third image. The process of ‘sampling’ or quantization (spatial frequency), which varies mathematically, results in fractal formulations whereby the resultant moiré image is capable of an infinite series of becomings, resisting any finality. It is what Deleuze (1988) called a ‘superfold.’ David Harris (2021, 123–146) and Maria Udén (2018) have both taken a close comparative look at ‘diffractive methodologies,’ only to worrisomely conclude that the results are what I have termed elsewhere neo-qualitative research or neo-destructive readings leaning toward humanist tenets that are rhetorical rather than opening up new vistas to the non-human other (jagodzinski 2021a).

Given all the above, let us look closely at Diagram 2: Fig. 11.2. I divide this diagram up into Real, Imaginary and Symbolic as in Diagram 1: Fig. 11.1. The point of light (as Schrödinger’s wave function that is in superposition and non-localized, a state of pre-collapse) is *radically* Real. Accompanying it is cosmological dark matter with its ‘black holes’ that remain largely ‘unknown’ in relation to quantum gravitational information that is available in relation to the expenditure of its energy radiation that leads to its shrinking and disappearance. What is known for certain is the gravitational pull on light to bend it, and speculations on a black hole’s ‘event horizon’ where Bohm’s holographic universe has proven influential (Susskind 2020). We can now also state that this point of light as being ‘pure immanence’ and it is of maximum intensity. In the Lacanian content, the ‘screen’ must act as a shield, a protection against maximum intensity. In the psychoanalytic discourse, failure to do so leads to trauma—an overload on body and mind. We can also make some speculation on the pure immanence of light as a cancelation of light|dark (visible|invisible) as a state of imperceptibility from which anorganic life emerges in the virtual Real. This is then planetary life as a system that

remains indifferent to the existence of *Homo sapiens*. To follow Eugene Thacker (2011), it is a world-for-itself with its ‘realist’ cosmic laws, which are subject to change over time as theorized by Lee Smolin (2019). The first-cause remains out of reach.

Shifting to the Imaginary, the speculations of the virtual Real emerge as a plane of possibilities, impossible worlds that co-exist as flows of potential. This is Bohm’s implicate order (described by the influences of John Wheeler’s pregeometric algebra) where both locality and non-locality arise in such a space, which is designated as Hilbert n -vectoral space. The virtual Real is ‘real’ as Deleuze (2003) often repeated himself since his Proust book (“Real without being actual, ideal without being abstract”). In John Bell’s terms, they are “beable” phenomena. Philosophically, for Félix Guattari, this is chaosmosis, which is not chaos, but an energetic and material place from which the ontogenic processes of subjectivation occur. He further described it as the autopoiesis of expressive matter (and hence matter has a ‘consciousness’). It is the ontological ground zero of his aesthetic paradigm as it is pervaded by the intensities of percepts and affects, inorganic life ‘virtualized’ (designated as ‘A Life’), machinically (informatically) composed via *agencements* via *desire*, or physically ‘active information’ to follow Bohm and Gregory Bateson’s notion of Mind as informational patterning (see jagodzinski, 2023, in press). Guattari talks of ‘directional components’ of chaos that have their own ‘ecstasies.’ I have marked it as ‘future’: real physical processes which convert quantum possibilities (*res potential*) to spacetime actualities (*res extensa*). The state of the actual effects the state of the virtual and vice versa, imagine here vibratory exchanges within a mobius loop. We might also imagine the screen moving closer and closer to the point of light, degrading its ‘protective’ powers as the virtual potentials shrink because of the actual realized events happening to the Earth to the point of our species extinction. The virtual Real is generally referred to as molecularity of differences in-themselves (difference *as* difference). It is also the realm of the acausal ‘dark precursor’ that Deleuze (1995b, 145) entertains in his early writing.

In Diagram 2: Fig. 11.2, Lacan places the subject of the gaze beyond the opaque screen. I have designated a hidden aspect of the subject which addresses the unconscious: the *Je* as opposed to the *moi* in Lacanian terms, which posits a ‘singularity’ of pure difference (unary trait or *einzelner Zug*). This signifier as a ‘unary trait’ does not reveal itself within the social ‘tableau’ that the gaze positions the subject in its milieu wherein

a social identity ‘pins’ the subject through surveillance as explored in Deleuze|Guattari’s (1987) conception of the ‘facial machine.’ The unconscious here has several aspects that also lie in the virtual Real as physically affected from the ‘Outside.’ Besides Lacan, who attempted to chart the unconscious through the signifiers of language, Katherine Hayles (2017) explores the unthought through the ‘cognitive nonconscious,’ much like Penrose and Hameroff explore the neurological superimposed ‘collapse’ that generates ‘free will,’ one could say the *gap* or the ‘temporal interval’ as the delay that arises between action and reaction—a moment of indeterminacy. Hayles’ understanding of cognition also raises issues of ‘free’ will as it targets choice and decision in distinction to behaviors programmed into the genetic code as the processing of information automatically at the neuronal level. These very noncognitive processes have been incorporated in AI ‘smart’ machines. To what extent do ‘learning machines’ cognize (think) for us? To what extent is AI ‘cognitive’ when ‘cognitive assemblages’ are formed with the human? The gap or temporal interval between nonconscious and conscious activity is speculated to be 500 ms without the reinforcement from long axon neurons that produce consciousness (Kouider and Dehaene 2007). The speculation is that this can be thought of as a spacetime threshold of decoherence. The proviso is that this would need to be an ‘event’ for ‘free’ will to happen given that technical computations of ‘learning machines’ also have constant reverberating circuits of back-and-forth exchanges of information, raising once more the specter of what defines ‘free will.’ While such an event can be considered a ‘phenomenon’ (in Barad’s terms), it requires no apparatus theory that informs her quantum claims. Catherine Malabou’s (2022) ‘explosive plasticity’ is yet another accounting as to how the brain undergoes change ‘beyond’ virtual memory. I place the time of the Past, following Bergson’s work on memory, on this side of the diagram, where Deleuze’s first synthesis of time is operable—that is, perception as subtraction and selection (a withdrawal—like Leibniz ‘monad). This is a ‘cut’ into a continuous flow, a contemplative contraction, habitual, and imbued with memory that conserves the past. Life does not ‘seem’ to change as repetition—as *Wiederholung* rather than *Wiederkehr*—goes on repeating itself as in the 1993 film *Groundhog Day* directed by Harold Ramis. The ‘known’ molar subject as an identity appears on the plane of the symbolic order. It is *subject* to ideological manipulation and subjectivation to live the necessary illusion as presented on the screen, as cleverly explored by *The Matrix* film series.

The point to be made here is that whereas Diagram 3: Fig. 11.3 introduces the ‘event of becoming,’ Diagram 2: Fig. 11.2 confirms that the opaque screen prevents passage. Becoming is ‘blocked.’ On the side of actualization, it confirms a world-for-us (Wilfrid Sellars’ ‘manifest image,’ 1962). The digitalized screen technologies and apparatuses of science present the ‘measurements’ of the world reflected back to the subject via code. While there is a virtual-actual co-existence, there is no disturbance as such. Shoshana Zuboff (2019) maps out how surveillance capitalism works, while Paul Virilo’s (1994) ‘dromology’ speculated on the speed and politics of the image calling it the ‘age of paradoxical logic’ (jagodzinski 2021b). The ‘algorithmization’ of the image changes any indexicality as developed in Diagram 1: Fig. 11.1. In another context, I call these *Macht technologies* and will contrast them to *Lassen technologies* that appear in Diagram 3 (jagodzinski 2019). The image becomes pure vibration, composed of code, subject to any form of manipulation, ushering in the media era of post-truth and ‘alternative facts’ where the force of ‘affect’ supplants any form of cognition based on ‘objectivity,’ in brief, Jean Baudrillard’s (1983) fourth order of ‘pure simulacra.’ It generates the ability to feel and be affected through ‘seduction.’ There is no primacy of the original, but infinite probabilities of transformation through the reproductive capacities of screen technologies. We can imagine this as the inexhaustible potential of the virtual Real being played with at the technological capture as a ‘superfold.’ It is here that Deleuze’s (1989) *Cinema 2* ‘time-image’ thesis is most predominant, extended to the neurology of the brain by Patricia Pisters (2012) as a ‘neuro-image’ that furthers Deleuze’s (2000) ‘brain is a screen’ (an interface) thesis.

The inadvertent moiré patterns that are produced when an interruption occurs during a recorded broadcast, and the whole range of ‘glitch aesthetics’ that can push the envelope of representation (like the ‘transformer’ films of Michael Bay), are reminders of the ‘transcendental illusion’ that is being created on the opaque screen through the coded means of mass reproduction that have become oxymoronically customized as each subject can form his or her own bubbled monadic word for-itself regardless of social identification to ‘live’ without ‘lack’ in Lacan’s sense. *Objet a* is constantly filled in and erased by an imaginary facilitated by computer gaming and commodity fetishism. The image-movement-time relationships are algorithmically controllable and constructable. Bernhard Stiegler (2014) made a critique of this situation his life project, unfortunately cut too short, to show how ‘tertiary memory’ is being exploited

and appropriated through screen technologies. The ‘brain as a screen’ is exploited for its addictive behavior patterns, where color, movement, textures, narratives, and so on are all subject to careful manipulation. The body, as Bergson argued, is an image as well, a ‘centered point of indeterminacy.’ Virtual memory images are constantly exploited via pixel point manipulation. Maurizio Lazzarato’s (2019) ‘onto-aesthetics’ shows this shift from photography and movement-cinema (Diagram 1: Fig. 11.1) to video and digitalization where the *in-human kino-eye* is given a further technological shift to form new machinic *agencement*. The image, for Bergson, is defined as pure vibration (a ‘shiver,’ or ‘tremor’). It is that point of light where all images flow and encounter one another, collide, reflect, and decompose one another. It is the virtual Real as ‘things-in-themselves,’ of a world-for-itself, a world in its fullness denied to Homo sapiens. Perception is only the contraction of pure perception, and this contraction itself is ‘screened.’ Matter, for Bergson, is not only identical to images but also to time. The point of light as pure perception generates a series of equivalencies: image = movement = light = matter = time = duration = rhythm. This chain is then translated on the screen and articulated through Deleuze’s (now) well-known articulations of the time-image, wherein, as Patricia Pisters’ attempts to show, the third synthesis of time plays with the future, emerging as the most crucial element of time for vivifying the fictionality (philo and photo-fictionality) of contemporary screen-images that François Laruelle has attempted to present in a non-standard philosophical way (Fig. 11.3).

Lacan interlaces Diagrams 1:Fig. 11.1 and 2: Fig. 11.2 to produce a third diagram Fig. 11.3. Three-dimensionally, it is like two interpenetrating cones. I have included the three diagrams from Seminar XI (below) as Fig. 11.4 before modifying it as Diagram 3: Fig. 11.3 to illustrate the following: where the Object in Diagram 1: Fig. 11.1 once appeared is now occupied by the ‘point of light,’ which Lacan called the Gaze. The Image in Diagram 1: Fig. 11.1 is superimposed on the Screen in Diagram 2: Fig. 11.2. It now become the Screen-Image in Diagram 3: Fig. 11.3, and lastly, the ‘geometrical point’ in Diagram 1: Fig. 11.1 now appears as a ‘tableau’ or picture, which Lacan called the Subject of Representation (Fig. 11.4).

The key to Diagram 3: Fig. 11.3 is to make evident the ‘event’ as Deleuze and Guattari envision it in the various ways that ‘becoming’ happens. They map this out as a series of transformations from ‘becoming woman’ to ‘becoming imperceptible,’ and the last phase has

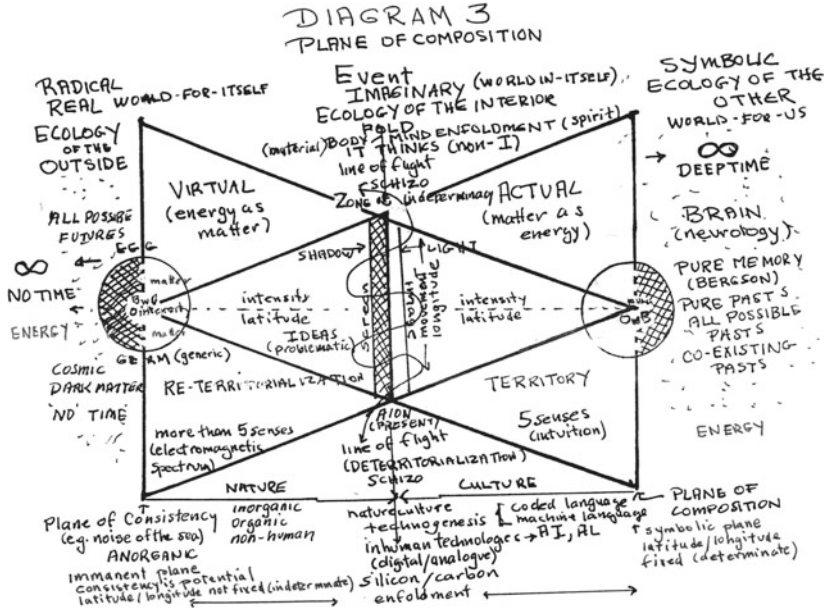


Fig. 11.3 jan jagodzinski, 2021, grasping the cosmological implications

never been fully defined or understood by the array of positions in the post-Deleuzian literature. Here, I simply work on the generic claim as it opens up a ‘line of flight,’ which I have symbolized by a ‘dynamic line’ that runs through where the screen-image occurs. This line’s ‘trajectory’ creates something new and hence remains dynamic: $n-1$ in their lexicon. Diagram 3: Fig. 11.3 is very busy, and so Diagram 4: Fig. 11.5, illustrated here, attempts to ‘magnify the ‘event.’ It is with this diagram that I start (Fig. 11.5).

Perhaps one of the most interesting and confusing concepts Deleuze and Guattari develop is the idea of ‘distinct obscurity’ or the ‘anexact,’ what they describe as ‘anexact yet rigorous,’ (1987, 449), as fuzziness, vagueness, and even ‘distinct but confused.’ These paradoxical concepts point to the Bergsonian intuition of matter that the artisan is sensitive to, its flow and qualities and traits. The way this particular diagram illustrates this is through ‘translucency,’ as if looking through glass that one cannot make out ‘distinctly’ but through which one nevertheless intuits or feels.

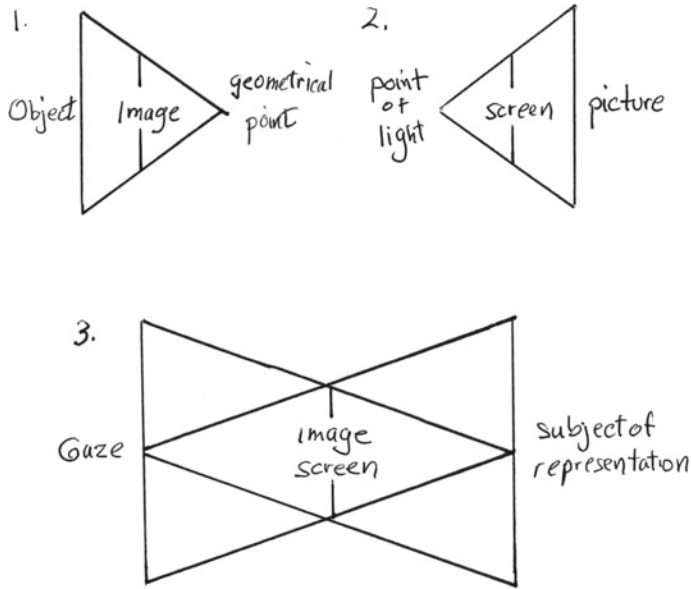


Fig. 11.4 jan jagodzinski, 2021, Lacan's three diagrams

I have marked this as gridded 'XXXXs'—that is, a *translucency* between screen-image, between opaque [screen] and transparent [window-image]. Chiaroscuro is yet another term for this. *Shadows* seem appropriate here as Deleuze's 'dark precursor,' which is dark because of the multiple causalities that remain unknown. Here, the correspondences to Bohm's 'hidden variables' seem appropriate as well. It is a mode of sympathy belonging to a cosmic way of apprehending the world, an attunement that does away with categorizations of any kind. The coming together of the opaque screen (Diagram 2: Fig. 11.2) and the clear image of representation (the windowpane of glass of naive representation) from Diagram 1: Fig. 11.1 achieves this creative perception, but only if 'something happens,' that is, if an encounter or 'event' indeed takes place, which is always contingent as it occurs in the time of Aion, as borrowed from the Stoics by Deleuze in his *Logic of Sense*. So, the event takes place in the present, a present that is never static, described by the verb ending in -ing ('verbing'), as in *becoming*. As Deleuze articulates, the event is either too early or too late, never during its occurrence. One might speculate that the

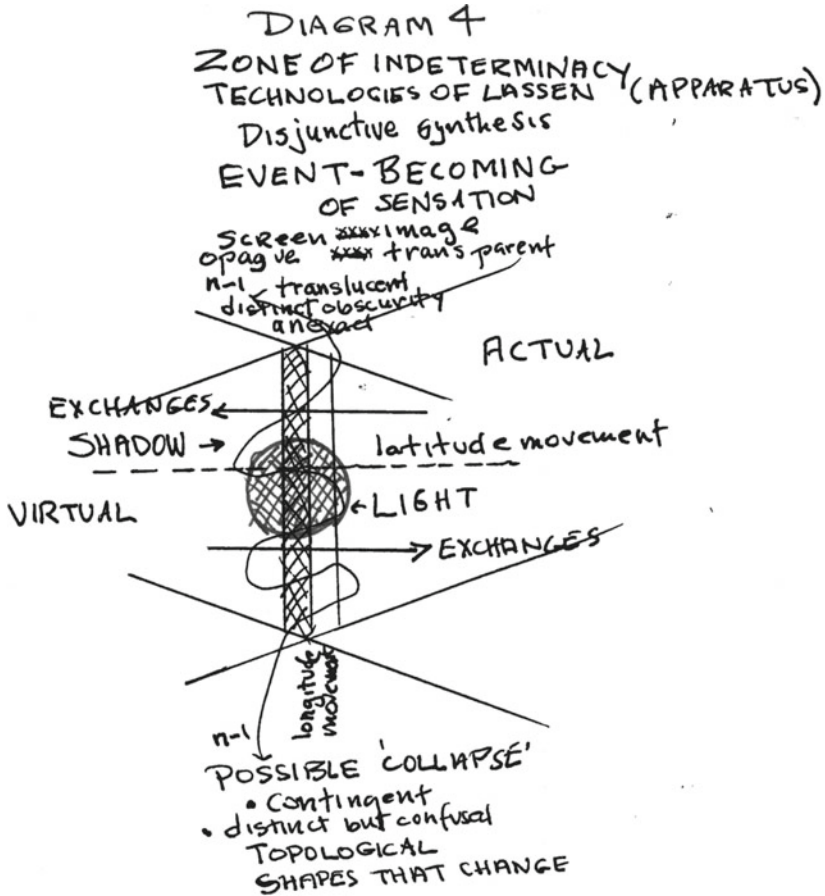


Fig. 11.5 jan jagodzinski, 2021, magnifying the event

‘event’ is a quantum collapse (decoherence) as Penrose and Hameroff suggest as it opens up a gap or interval for change and thus ‘free will.’ Decoherence is environment-induced super selection; superpositions ‘collapse’ in the virtual Real, ‘creating’ an actualized phenomenon. The event occurs in this ‘zone of indeterminacy’ where some sort of exchange takes place between virtual and actual and vice versa. I have marked this by

arrows. This would follow Stuart Kauffman's (2016) quantum speculations, where the potential is affected by the actual and vice versa. Bohm's implicate order of the virtual Real seems appropriate here as well, before decoherence happens. Recall, for Penrose and Hameroff, this coherence is not subject to measurement, but is a gravitational phenomenon (as speculated). Such a direction off-sets the complaints Hayles (2017, 65–85) has made concerning the inadequacies of a Deleuze|Guattarian speculations concerning the various levels of force. What is in the balance is 'balance' itself: some 'thing' has to happen to the organism in question; metaphorically its 'ground' undergoes change, i.e., the ground can disappear, it can cause dizziness and delirium, its foundations can tremble and shake, and so on.

The creation of *agencements* (this now includes *apparatuses as dispositifs*) that occur through the technologies that intervene [screen-images] is composed of the inhuman—that is, AI (artificial intelligence), ML (machine learning), and DL (deep learning), along with our species ('human') and the non-human of the virtual. In distinction to Diagram 2: Fig. 11.2 where the technologies of manipulative and productive power (*Macht*) are at 'work,' positioning the body via surveillance, here, in distinction, I identify technologies of *Lassen* as borrowed from Krzysztof Ziarek (2004) in his own appropriation of Heideggerian technological thought between *techne* and *poiesis*. *Macht* and *Lassen* technologies are two ways of relating to the Outside. The suggestion is made that *Lassen* technologies allow a gap to open (decoherence) through the event, whereas *Macht* technologies close this gap: no encounter takes place. The enfoldment of the event which leads to transformative becoming requires *poiesis*, a 'letting-be' that goes 'beyond measure' and de-mobilizes power. It requires the cosmic artisan to become sensitive to the 'thinking' of material that is being exchanged, its cognitive nonconscious to use Hayles' conceptualization. The plane of composition here involves the 'inorganic life of things' as forces that constitute their 'micro-brains.' *Poiesis* enhances, enables, and grants the forces in play in ways that the relation is not calculable in terms of power increases and cannot be measured or stated objectively. *Lassen* technological forces are more like *mediators*. The intensification of the emergent 'phenomenon' is *singularly* other. It remains beyond normative forms of relation: it enhances the margin of alterity and exceeds available forms of relations. Appropriately, it occurs in the *middle voice*, between the active and the passive, performing an operation of mutation in the operation of making that

desists or withdrawals from power. For Ziarek, this is conceived as a certain ‘forcework’ that enables singularities beyond established categories, social depictions, cultural aesthetic, and so on. Vectors so created do not intensify, extend, and amplify flows of power but gather together a power-free (*machtlos*) momentum. I have tried to show exemplifications of what *poietic* forcework looks like in practice elsewhere (jagodzinski 2010; jagodzinski, 2019).

The result is various topological variabilities that morphologically unfold so that a ‘line of flight’ ($n-1$) takes place. Deleuze and Guattari posit a geolocation of the bodily ‘superject’ in terms of longitude and latitude. The latitude line lies on the BwO that I will discuss below. This is to suggest that the superject is always ‘on the move,’ so to speak, in terms of rest, speed, and slowness as semi-stable states when it comes to latitude and the sum total of intensive affects, as transformations, when it comes to longitudes. In the event, for the BwO to undergo change, a given threshold needs to be reached longitudinally, and a degree of potentiality achieved latitudinally. When such conditions are met, one speculates that *decoherence happens*: a gap opens up, and a change (its scale dependent on the event) takes place. There is a range of changes that take place dependent on thresholds and intensities, and these are situational. Before approaching the full extent of Diagram 3: Fig. 11.3, it is important to note that the ‘superject’ appears gridded as the two halves that appeared in Diagrams 1: Fig. 11.1 and 2: Fig. 11.2 come together. From Diagram 1: Fig. 11.1, the side of the hidden dimensions of the virtual Real ‘object’ come into play during the event, and from Diagram 2: Fig. 11.2, the hidden side of the body/mind that the social order cannot fully survey is engaged (the neurological ‘brain’ as will be explained below). The gridded superject is in a process of becoming (phase change of individuation as Gilbert Simondon’s (2020) quantum theory suggests). The reorganization of the Body without Organs (BwO) is due to the presence of an Outside of organic and inorganic forces corresponding to the possible recombination of the assemblage of heterogeneous operators. Alessandro Sarti et al. (2019) have brilliantly articulated the mathematics Deleuze put into play to develop his theory of ‘differential heterogenesis of morphodynamics’ of such *agencements*.

This event is a creative plane of composition—a plane of sensations. As Deleuze|Guattari write, “[d]o not imitate a dog, but make your organism enter into composition with something else in such a way then the

particles from the aggregate thus composed will be canine as a function of movement and rest, or of molecular proximity, into which they enter” (1987, 302). ‘Becoming molecular’ is a difficult task undertaken by artists, actors, philosophers, and scientists in the particular planes of composition they work with (affects/percepts, concepts, mathematical formulations). The presupposition in this case is the ‘domains’ or ‘fields’ of particles involved that actualize into different assemblages attract or repel one another in ways that shape the phenomena. Perhaps Graham Harman’s concept of ‘allure’ captures this, or even the entwining of ‘love|hate’ (Lacan’s favorite dispositions), or Deleuze and Guattari’s ‘desire,’ or the range of aesthetic dispositions that take place in this zone of indeterminacy along the place of composition where the longitude and latitudes are repositioned as to what entities entered the assemblage and became deterritorialized. Alfred N. Whitehead (1978) made aesthetics his ontological principle wherein successive prehensions of ‘actual occasions’ are drawn together (via concrescence) through the affordability of the senses available to a specific ‘entity.’ There is no accounting for ‘love,’ only n-sexes, where n-1 forms their bond (Berressem 2006). Sexuality is ultimately a nonorganic (or anorganic) ‘life,’ related to a ‘pure plane of immanence.’ Molecular becoming is an exchange of information through translation or transportation of ‘in-formation’ itself, a rather nebulous and difficult concept to articulate as to what is happening during these exchanges of energy formations as this ‘life’ is the imperceptible passage between organic and anorganic (nonorganic) systems. Gregory Bateson’s (1972) oeuvre laid out the foundations for such molecular becomings through his approach to cybernetic information systems.

Coming now to Diagram 3: Fig. 11.3, the three Lacanian registers are still in play. Each receives its own ecological realm; the three registers could be said to follow Guattari’s (2008) own ecosophy of three ecological divisions: environment (Real of Nature), social relations (Symbolic Order), and human subjectivity (Imaginary as developed on the Plane of Composition, the superject). It is best to recognize that the Imaginary register that I have been using is ‘fictioning’ in its active sense, as has been explored by the work of David Burrows and Simon O’Sullivan (2019). The ‘Ecology from the Outside’ is essentially Nature as a world-for-itself, a world-without-us, which is to say I take a ‘realist’ account here (contra Karen Barad as discussed earlier) and maintain an ‘object’ that exists in the form of process in the sense that the electromagnetic wave spectrum primarily in-forms the matter-energy exchanges

that take place, Schrödinger's wave function (Ψ) being the 'vanishing point.' The emphasis is placed either virtually (energy as matter) or actually (matter as energy). Here we can think of Diagram 3: Fig. 11.3 as a system being at the 'edge of chaos' when we think about what happens when event(s) occur. The processes of exchange between virtual and actual take place between *entropic energy* [energy as matter]—as processes of disorganization that take place in the virtual Real, which are then subject to re-territorialization and *negentropic energy* [matter as energy] as the tendency toward organization in the *actual* domains of territorialization. The state of the system (phase state) depends on these open and closed processes enfolded into each other as 'dissipative structures' show (Prigogine and Stengers 1985). The late Bernard Stiegler (2018) attempted to argue for the dire need of a 'Neganthropocene' to put a stop to the madness that the technologies of the Anthropocene are producing via Macht technologies.

Such a realist account is made evident by a paradox formulated by John Wheeler (1981): "[t]he universe exists 'out there' independent of acts of registration, but the universe does not exist out there independent of acts of registration." QM, as successful as it has been, still provides a limited understanding of the cosmos. The recent Muon g-2 experiments (Fermilab 2021) indicate that there are other 'particles' in the vacuum (void), and the recent black hole image from the Event Horizon telescope provides more clues as to how gravitation and QM might open the vista to another 'physics' given that the geometry of spacetime is 'punctured' by the gravitational pull of the black hole where only light, which has no mass, orbits on its outer rims at $1.5r_s$ (Schwarzschild radius). In Diagram 3: Fig. 11.3, I have called this 'no time,' a site where spacetime becomes compressed and warped as the theory of General Relativity shows; time is 'frozen' as spacetime does not exist as there is no mobility. Photon light spins in, as well as out, of this black hole. Light that spins 'out' and is not bent into the black hole maps the shadow of the event horizon. Einstein's General Theory of Relativity holds. All this is conceptualized as a Radical Real (what goes on below the *Planck unit where timespace is warped, now capitalized for emphasis*). This Radical Real, where the object in Diagram 1: Fig. 11.1 now appears in Diagram 3: Fig. 11.3 as a vanishing point, is analogous with a black hole, a point of complete speculation; that is, the basis for non-human orientations marked by a vanishing point not outside an event (as in Diagram 1) but a vanishing point *within* an event. In this sense, we are extrapolating beyond the usual empirical senses

where simulations are produced as mediated by *lassen-technologies* like the Deep Horizon telescope (black holes) and the HCL collider (Boson-Higgs particle). Speculation concerning dark matter subject to quantum gravity laws can only be made from a ‘vanishing point’ (a compressed line, surface, or spot) within the Radical Real of ‘absolute collapse’ (what Deleuze was to call the ‘unthought’). The work of François Laruelle’s non-standard philosophy may be considered an attempt at such quantum speculation by cloning the framework of standard philosophy; that is, an attempt to speculate through the recognition of an impossible radical Real.

In the Radical Real, we end up with ‘points’ or singularities (often referred to as haecceities), whereas when we shift to the virtual Real, points become lines that move as in the topology of continuous forms of deformation, shrinking, stretching, and folding in the process. Deleuze uses the term *superfold* for this development. The anorganic (also, nonorganic) of the Radical Real is then theorized as an immanent plane of consistency that remains potential (comparable to Whitehead’s ‘eternal objects’); latitude and longitude of quanta movement are not fixed and remain indeterminate. Ideas (multiplicities) or ‘problematics,’ as Deleuze calls them, are ‘differentials,’ the continuous differing of objects (particles) he called ‘projectiles.’ While not properly ‘quantum,’ Ideas (as problems) are shaped in this vector Hilbert space (Diagram 2: Fig. 11.2). Their potential ‘consistency’ has yet to be actualized. For Deleuze, these emerging differentials of a problematic are solutions to ‘symptoms’ that trouble a body by signs of existence. In Diagram 3: Fig. 11.3, this goes on in the Imaginary event (fictioning) that takes place as a ‘point’ disrupting continuity and hence initiates deterritorialization. It is discordant. I have placed re-territorialization in the virtual Real, where the line of flight becomes a broken line (---->) that affects the ‘future’ in the virtual domain, while also affecting the ‘past’ in the actual domain. This domain is marked as ‘territorialization’ as it is already symbolically and categorically molar. The event of the ‘impossible present’ (Aion) can be thought of as a ‘schizo’ line in the way ‘events’ impact the future and past, but remain unknowable, subject to the nature-culture enfoldment via the technologies (*macht/lassen*) that are mediating, interacting, and intra-acting as shaped by the competing Anthropocene fictive narratives. Lines in schizo-events are no longer straight when entering the Symbolic molarity, as in Diagram 1: Fig. 11.1, but are subject to bending, swerving, and articulated through fractal mathematics as their scales vary

in their impact on the Symbolic molarity. It is fair to say that the Lucretian ‘swerve’ widely discussed by Thomas Nail (2018, 2020) and Hanjo Berressem (2021) in relation to movement aptly fits here.

While the Imaginary (fictioning) as Event (capitalizing marks its significance) has been explained in Diagram 4: Fig. 11.5, it is the body (material)|mind (spiritual) enfoldment that addresses Guattari’s ecological self. As such, I have designated the Event as non-I. The Event comes from the Outside as a disruption, hence ‘it thinks.’ This same enfoldment occurs with the Virtual Real and the Symbolic through the Imaginary (fictioning) Event where the non-human (inorganic, organic) is enfolded with the symbolic (molar) plane of the human. Basically, through assembled technologies, the imaginary-fictioning gives a *glimpse* (as a shadow) of a world-in-itself (as opposed to a world-for-itself, the anorganic Radical Real cosmos), which is to say we only catch limited dimensions of various domains that are operative through sciences, arts, and conceptualized philosophies. These are constantly changing through the Events that emerge. These are fictive worlds; in the sense, they may hold true classically, but are certainly speculative when it comes to the Radical Real. The key here is that art-science, or science-art shapes these apparatuses and assemblages (*agencements*) of *lassen|macht*.

Lastly, to say something about the BwO that moves from 0 intensity—the zero point of origin, germinal and unknown, part of anorganic life, to its place of full intensity where it undergoes various forms of pathological stratification (addictive, cancerous, empty) as well as health (full BwO). We can only speculate, as Rupert Sheldrake (1981) does on morphological resonances and DNA ‘blueprints of life.’ But the vectors of intensity that shape species are ‘screened’ from us. We do not have a full account of the human blueprint despite the Human Genome Project. Epigenesis got in the way, so to speak. We only have a ‘translucent’ grasp as a world-for-itself that enables the cloning of animals. In the symbolic order, the BwO can become stratified, captured fully, imprisoned, killing the spirt, and moving toward death or extinction. One can well imagine technology of *Macht* forming assemblages of no escape. On the virtual Real side of the ledger, the ‘more’ than 5 senses and intuition are operable and extended so that ‘play’ comes into existence for events to happen, increasing the likelihood of transformation. The critical psychological exploration of ‘immaterial bodies’: hypnosis, mesmerism, suggestion, affect, telepathy, and the hearing of voices by Lisa Blackman

(2012) is pertinent here. Whereas territory, on the other hand, is a world-for-us, the Other becomes like Us. The past can become archived into an ideological orthodox history, whereas with events, memory opens up to be counter-actualized for change.

Key, however, is no longer to see the form of ‘subject’ as human. Like Deleuze and Guattari’s treatment of body as ‘any body whatsoever,’ we can simply turn the subject into ‘Brain’ as the most complex organism we know of. The brain is subject to modification through evolutionary technologies (the invention of writing, the control of fire, the creation of new periodic table elements, and so on), which enable the species—*Homo sapiens sapiens*—to remain open to transformative change, both physiologically and psychically. The reverse of BwO at zero-degree intensity on the ‘object’ side of Diagram 3: Fig. 11.3 now becomes OwB (Organs without Body) at zero-degree intensity on the ‘subject side’ of Diagram 3: Fig. 11.3, questionably introduced by Slavoj Žižek (2012, 74, 78) in his attempt to ‘Hegelianize and Lacanize’ Deleuze and accuse him of hylozoism. In Žižek’s hands, the concept of OwB becomes the phallus, a symbolic signifier of social identification that is bestowed or taken away, rather than referring to the evolutionary modifications of the brain. Organs without body become partial objects as machines of *jouissance*. We are back to Daniel W. Smith’s ‘en-mindment’ and Raymond Ruyer’s psycho-biological thesis of forms possessing their own ‘conscious’ force. The diagrams proposed here take the OwB and speculates on the ‘equipotentiality’ of each organ (after Ruyer), in their capacity of self-formation (consciousness). For where the BwO is placed in the Radical Real (the left side of Diagram 3: Fig. 11.3), it becomes a ‘generic’ body—the germ, the impossible origin, while the OwB becomes the generic subject as the Brain itself on the right side of Diagram 3: Fig. 11.3. Deleuze and Guattari in *What is Philosophy?* (1994, 211–215) describe the brain as an ‘equipotent’ organ, a *conjunction* where three forms of ‘subjectivity’ coalesce: ‘superject’ (as mind, i.e., philosophy), ‘inject’ (as contraction, i.e., art), and ‘eject’ (as function, i.e., science). This position also has similarities with Laruelle’s attempts to work out a ‘generic human.’ Here, however the OwB and BwO conflated become *ahuman* when it comes to Events based on the profound transformation that occurs as evolutionary and involutory molecular distributions physiologically and psychically change over time through technologies and epigenetic influences.

Through the series of decoherence events, as speculated by Penrose and Hameroff, the changes to the physiology of the brain in an evolutionary sense are dependent as to what degrees the ‘brain’ as an organ can modify its environment as ‘en-mindification’ (Smith 2021) or *encephalization*, which might also be understood as the degree of self-organization (Deleuze’s ‘micro-brains’) that an organism is capable of concerning modifying its environment to the degree that the environment modifies it. This line of thought is somewhat verified by evolutionary biology. The ‘Baldwin effect’ of genetic accommodation traces a feedback loop between mutation in species in the way a species modifies its environment to favor the mutation. This is not the transhumanist metanarrative where body is left behind for ‘pure mind’ in the form of informational abstraction, the imaginary kernel of many sci-fi narrative fictions. In the case of *Homo sapiens sapiens*, it is the development of what Michel Serres (2019) called ‘exo-Darwinian evolution of humanity,’ as ‘hominescence’ that takes place outside evolution as the anthropogenic force of production that modifies the planet to our current detriment. In terms of ‘micro-brains,’ there is also the idea of ‘deep time’ or the cosmic time of the Earth’s past (Gee 2000) that emerges as ‘pure memory.’ The Earth’s memory is also at play in ways we do not understand as it belongs to the Radical Real of anorganic life. For instance, the Earth’s vibratory electromagnetic resonance (it’s rhythmic ‘heartbeat’ of 7.83 Hz, referred to as Schumann resonances after Winfried Schumann who predicted them in 1952) has changed in recent times. The hypothetical speculations by Global Coherence Monitoring System (GCMS) research initiatives suggest that the phase change of the Earth, its cosmic sound, or song, is related to the living creatures on its surface, with *Homo sapiens sapiens* stressing its magnetic field. As this example shows, the interconnectedness of human/animal health and behavior affects the Earth’s magnetic activity in ways that are dimly understood. The developments anterior to the species *Homo*, which Quentin Meillassoux (2010) has called ‘arche-fossils’ or ‘fossil matter,’ supersedes the *correlationism* of the subject-object predicate. Diagram 3: Fig. 11.3, with the significance of speculation throughout, strengthens this claim. The Earth ‘thinks’ cosmologically (Grant 2008; Szerszynski 2019).

There you have it—an attempt to show a cosmology at work where dynamic change is always in the making. The last thing to note is that the infinity symbol appears on both ends of Diagram 3: Fig. 11.3 (∞), indicating perpetual change. The infinity sign on the side of subject|brain

or matter|energy leads to the conceptualization of “Deep time” of the Earth, while the infinity sign on the side of the Object (thing, particle) as energy|matter leads to ‘no time’ where the Planck-length of absolute ontological indeterminacy has been reached and gone beyond into the black hole of the Radical Real. Ultimately, both infinite (∞) directions meet (warp together) in black holes as light is bent according to General Relativity theory. This idea, along with a few other wild speculations, is explored in the next section.

WILD SPECULATIONS ON THE WORLD-FOR-ITSELF AND IN-ITSELF: TOTAL CORRELATIONAL COLLAPSE

The mystery of QM and gravitation in relation to dark matter are at the edge of ‘realist’ quantum approaches today. We have a very vague idea of evolutionary and involutory change, including the mysteries of ‘germ-cells (germ to genome)’ and vague ideas of morphogenetic ‘blueprints’ that enable species to develop, mutate, and go extinct, or ‘miraculously’ come into existence due to environmental changes. The ‘plastic-scene’ (the global penetration of plastic in virtually every ecosystem) has begun such transformations at microbiological levels. Newly discovered microbes can feed off plastic and electronic waste. The ‘deep time’ or ‘cosmic time’ of the Earth opens up new cosmological fictions in relation to the anthropogenic labor of our species. In the interesting scale of planetary civilizational development on the Kardashev Scale, the American futurist physicist Michio Kaku (2012) places our current harnessing of all possible energy as not yet reaching 1 on a scale of 5, the apex being the fictitious character on *Star Trek Q*, who manipulates timespace. In this scenario, Q is ‘pure negentropy.’ As a fictional figure, he is supremely anthropocentric as he commands the cosmos. That is, Q is so complex *it* is able to manipulate the existing cosmic laws outside all paradoxes. In short, ‘it’ is off the scale. Kaku places our current planet at level 0 and asserts we may never reach the first level without first going extinct as atmospheric conditions make life unbearable and/or nuking ourselves, which remains a distinct possibility. Given the Doomsday clock indications, as a civilization there is a good chance of us not making it to a basic level where the complete fantasy of controlling ‘Nature’ is realized. But the ‘(post)human and inhuman future’ remains open. As David Roden (2015) speculates, the truly posthuman will only emerge when AI, now simply learning-machine infants, will blueprint their own generation.

Speculations as entertained by François Lyotard's (1997) fable of the impending 'solar catastrophe' and Ray Brassier's (2007) scenario that the sun will incinerate the Earth in 5 billion years raise fundamental questions concerning nihilism and much more. Brassier attempts to push past correlationism, such as that developed by Meillassoux's arche-fossil, by raising the question of *extinction* itself. Extinction is, for Brassier (following the guide of Lyotard's catastrophe fable) the very point where, as a species, we are not able to think of a future. This is to say that correlationism, which always evokes a world-for-us, is leveled to a natural phenomenon by or through the cosmic time of extinction. Thought is but an object, as presented in Diagram 3: Fig. 11.3, where "it thinks" as an inhuman entity, offering a glimpse into just part of the brain's processes and not the subjective ego (like the phenomenon of out-of-body-experiences, dreams, and Katherine Hayles' nonconscious processes). Catherine Malabou's (2022) thesis on brain plasticity, brain injury, and Alzheimer's disease points in the same direction, making psychoanalysis applicable to all processes questionable as Žižek (2009) contra Malabou attempted to defend.

Extinction presents an event horizon of death. Brassier draws on Freud's death drive to work this through. The more interesting insight, as will be present in yet another diagram, is to grasp cosmology in terms of sublime beauty. There is no redemptive cosmological narrative like, for instance, Charles Jencks (1986) presents in eschatological terms, or Meillassoux offers (2011) via speculations on the contingency of God's "inexistence." Even Freeman Dyson's (1979) wild speculations of domesticating the universe appear inadequate, somewhat in the order of Michio Kaku. Like Lyotard's sublime, the cosmos is a place of terror; a site of both creation and 'death.' Anorganic life, in Deleuze and Guattari's terms, presents such a 'life.' Perhaps this is dark matter itself. There is an amazing scene in the film *Fat Man and Little Boy* (d. Roland Joffé 1989) that shows Robert Oppenheimer watching the atom bomb explode on July 16, 1945, appearing as the typical mushroom cloud on his goggles. The scene captures the extraordinary uncontrollable force of 'nature.' "I am become Death, the destroyer of worlds," he says, the most well-known line from the Bhagavad Gita (Fig. 11.6).

Diagram 5: Fig. 11.6 plays with the possibility of an extinction event as unfolded above, presenting a black hole of Diagram 3: Fig. 11.3's Event as such a total collapse. To imagine this, the two infinities ('no time' and 'deep time') emanating from the two vanishing points collapse together as

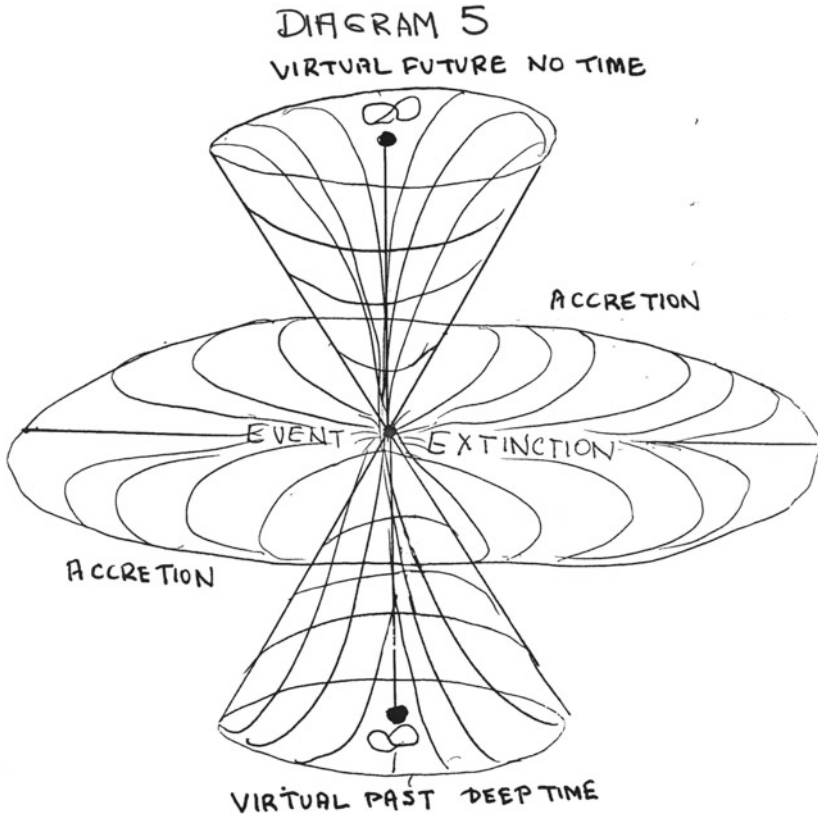


Fig. 11.6 jan jagodzinski, 2021, possibility of an extinction event

spacetime warps according to General Relativity Theory, occurring below the threshold of the Planck-scale. Diagram 5: Fig. 11.6 is a modification of Minkowski's spacetime to give some account of what I am trying to get at. Imagine the two vanishing points at either ends of Diagram 3: Fig. 11.3 'overlapping, 'or collapsing,' causing a black hole to form as an extinction event: an event horizon of *total collapse*. The accretion disk that forms, shown on the diagram as an oval, as well as a 'line' that collapses as the two cone shapes are compressed toward the extinction event, would all be in motion as light is bent into this singularity. It would seem the less virtual potential becomes available in relation the total energy of the

Earth, the more the species *Homo sapiens sapiens* moves to an extinction event. Playing with the ‘infinitesimal black holes’ of collapse extracted from Penrose and Hameroff, who predict a ‘free will’ when gaps are formed, it might be said that cosmic artisans are charged with generating such negentropic creativity to increase virtual potentiality of what can be actualized, like Stiegler’s and others (International Project 2019) who call to ‘detox’ the planet caught by a hyperdopaminergic social order through its performative addiction (Kershaw 2007). This speculative play thus leads to the final section and a key question concerning *abuman* becomings in the Anthropocene.

WHAT IS A COSMOECOARTISAN TO DO?

The work of Curt Cloninger (2021) titled *Some Ways of Making Nothing: Apophatic Apparatuses in Contemporary Art* is perhaps another attempt at developing similar questions to those I have presented here. Cloninger also calls on the cosmic artisan following Deleuze and Guattari. He maps out how art might be understood as an apparatus (106–127) where art-science can be understood as coming together. Apparatus in this chapter is a form of *techné* in the Imaginary fold or functioning of the Event, as is Deleuze|Guattari’s notion of *agencement*. Cloninger is more at ease with Whitehead and often calls on Karen Barad’s quantum position, which from the standpoint of this chapter dismisses realist quantum developments as I have argued elsewhere (jagodzinski 2021a). I believe Cloninger is somewhat mistaken to conflate Whitehead and Barad together in their cosmological quantum approaches. Cloninger (2021, 97) identifies the measurement of quantum with meaning itself (“The measurement itself *is* the meaning.” original emphasis). In short, this is the ‘phenomenon’ Barad speaks of. Whitehead is more nuanced and far less anthropocentric than Barad, and far closer to Deleuze|Guattari. Cloninger relies on Deleuze|Guattari for his description of the cosmic artisan and not Barad’s apparatus theory. When speaking of an ‘eternal object,’ Whitehead agrees that an ‘eternal’ object’ can only be described in terms of its potentiality for ‘ingression’ when becoming an actual entity. However, he goes on to say that two descriptions are required for an actual entity. The first is analytical in its potentiality for ‘objectification’ in the becoming of actual entities, and the second is analytical of the process which constitutes its own becoming. In this chapter, a world-for-itself (or a world-without-us)

is prior to any measurement. Comparable to Whitehead's 'eternal entities'. All 'measurements' are regarded as glimpses of a world-in-itself (as actualized in their becoming by techné [apparatuses, *agencements*]). We glimpse only specific domains through science (formulas-mathematics) and art (blocs of affects-percepts) that depend on the techné (*Macht-Lassen*) constructed. One of the problems Barad suffers from, then, is that there is no way to define the limitations of the apparatus involved that affect the measurements. The 'cuts' she refers to end up being *discursively defined*, which comes from her reliance on Bohr's insistence on meaning. Where the apparatus stops and begins is therefore vague, as her example of Stern-Gerlach's experiment illustrates. The cut is 'agential' in its discourse, which involves human understanding and meaning. Although Whitehead (1978) also refers to 'decision' as the 'givenness' of things in the sense of a "cutting off" (43) to procure a limit, this cutting off is not anthropocentrically defined. Decision for Whitehead, "constitutes the very meaning of actuality" (ibid.). It is *felt* before it is *thought*.

Cloninger develops the idea of 'apophasis' and 'apophatic apparatuses' as a way of 'making nothing' so as to disrupt the flow of things and open up a 'gap' for thought, which are excellent exemplars of *Lassen* technologies. An avant-garde without authority is charged with a schizoanalytic project for a 'New Earth,' a project where there is a potential increase in energy to at least offset the energy expenditures that close options as to what remains possible when it comes to change toward prolonging existence. By this I mean schizoanalytic projects are performative projects that directly impact physiological well-being and the nonconscious, which opens a gap 'to think' otherwise. Such projects are deemed cosmological in the sense that speculations about materials and constructed ecologies are required to harness the Outside, to provide an attunement to an 'ecology of forces' that are enacting on us and with us in that constructed environment. The encounter must affect the level of interior (self) and exterior (social) ecologies to encourage possible action and change. Such performative projects are always imperceptibly pervaded by the quantum field via the intra-actions of matter energy exchanges. Here, the electromagnetic spectrum is harnessed and utilized in various ways to disrupt the usual visibility of light that humans 'naturally' see through other technologies rather than just playing with the accepted range via filters and changing frames per second. X-ray, infrared, and ultra-violet ray technologies would be the new apparatus-*agencement* that need to be investigated,

invested in, and harnessed. The liminality of nothingness and anorganic life (pure immanence) is engaged to present a certain nihilism as the ‘thingness,’ that is to say, the patterning of the brain as an object that ‘thinks’ is disturbed. Such nihilism is not ‘meaningless’ as much as it brings the realization of the ‘coldness’ of space that exists past the Earth’s protective biosphere. As Brassier (2007) maintains, it brings us to the brink of a transcendental realism that is predicated on cosmic extinction. The film *Ad Astra* (2019, d. James Gray) addresses and problematizes this folly and dream of space travel.

An ecology of Another, rather than the Other of poststructuralism, is necessary through the technologies of *Lassen* to increase this potentiality. ‘Another’ addresses the generic and the *abuman* as it is Another that offers a ‘world’ to trust (Deleuze 1990, 301–320). An ecology of the interior—the enfoldments of subjective individuation are needed, which (perhaps) positioned as ‘infinitesimal black holes’ are able to tap black matter (as the Outside) to keep creativity open. This is a particular ‘delirium,’ or disturbance that such performative singularities attempt as a ‘detoxification’ from all that actualizes a path to extinction in the shadow of the Anthropocene. As such, these are *abuman* orientations. Stiegler’s (2018) thesis of the ‘negantropocene’ has some bearing here in his attempt to stave off the worst excesses of nihilism as the ‘good life’ via his institutionalization of the *Plaine Commune*. *Lassen* technologies directly address such an attempt to offset the entropy of the Earth’s phase change.

Cosmoecartisans working with the ‘elements’ of the Earth (ice, air, fire, soil) require an intimate grasp of the performativity of matter within cultural contexts of their affective agency. Ice, for instance, is a medium/material explored by a handful of artists to draw direct attention to the global melt and the human codependence with the Earth’s frozen matter: Jacqui Jones’s *Melt* (2012), Mark Coreth’s *Ice Bear Project* (2009–2010), Nele Azevedo’s series of *Melting Men* (2005–ongoing), and Olafur Eliasson’s *Your Waste of Time* (2006, 2013) are the prominent examples. All are art-science assemblages that use *Lassen* technologies to generate the needed gap. Simone Hancox (2013) addresses the way Eliasson’s *Your Waste of Time* enables a defamiliarization to take place between glacial ice and visitors entering a refrigerated room of -6 degrees C where an intra-action takes place between the thermal energy of humans (37°C) and the room temperature which ‘sustains’ these glacial ice boulders in ‘suspended animation,’ preserving their agential properties so they do not

melt. The question raised here is: where is the ‘cut’ of this installation-assembly-apparatus? Does it signal toward the global crisis? The exact meaning/intent of its performativity is left somewhat open, raising paradoxical issues (e.g., the costs of sustaining six tons of Icelandic glacial ice; the energy expenditures involved via the refrigerating units; the time of year they are displayed; and so on). Does such a project lead to self-reflexivity, as developed above? Is this an exemplar of *Macht* technology? Or is the ability to control the conditions of the glacial ice, and the power to move it from its location of Jökulsárlón to travel approximately 2250 km to a Berlin gallery just another sign of dominance that ‘clashes’ with the agential force of non-human matter like ice? There is no clear answer—pointing to a deceptive nihilism. What is it for? Of what use?

A more impressive performative project is staged by Danish artist Tue Greenfort (2007) called *Diffuse Einträge* [Diffuse Entries], a sculpture installation for Skulptur Projekte Münster 07 edition. The ‘sculpture’ consisted of a high-pressure liquid manure spreader that spewed water taken from Lake Aa, an artificial recreational reservoir lake southwest of the center of Münster that is fed by the river Aa. The sculpture was, in effect, a mobile pressurized fountain. The lake is overgrown with blue-green algae making it a hazard to swim in. In short, it is contaminated, not only to humans but to birds and fish. The cyanobacteria that proliferate the lake is toxic. This is partly due to processes of eutrophication, where the intensively farmed Münsterland region (one where cows and pig farms are in abundance) is made toxic by high levels of phosphates entering the river from fertilizers and liquid manure that flow into the lake. The meat industry in the region is bolstered by EU subsidies and it has a powerful lobby and influence on the municipality. To ‘protect’ the meat industry and the many specialty products manufactured in the farmlands of Westphalia, a cosmetic solution was found to reduce the level of phosphates in the lake by adding Iron (III)-Chloride into the water. This was the first time this chemical (usually used in water system cleaning plants) was used in open waters—in both the river Aa and the lake to reduce the smell and the algae. The chemical itself is hazardous to health. To keep EU subsidies, the source of the pollution was not mentioned but covered over, caused by “diffused entries” as Greenfort found out from the researcher who had developed the chemical solution.

Greenfort’s ‘sculpture’ intensifies the smell of manure by adding Iron (III)-Chloride into the water as it forcefully pumps its water out, attempting to disrupt and bring attention to the irony of the cosmetic

solution. Unlike the usual gesture to buy and install sculpture pieces from this seventh edition of the project, Greenfort's sculpture is an anti-form. Its affects are offensive to the city's decision. Greenfort intervenes in the romanticized landscape of peace and relaxation that this recreational lake promotes by causing an affront to the visitors that come to the lake, and the affect created by the smell brings together the ethico-political issues between state, municipality, and the meat industrial lobby. Greenfort exposes the invisibility of the 'causes' of the established aesthetic that was to preserve Lake Aa as recreational area by directly intervening in the *agencement* via his sculptural apparatus. The 'diffuse entries' are concretized and exposed. The more difficult question of such an ecosophical intervention into the political, economic, and aesthetic dimensions is whether the actualized intervention would change the established state of affairs, or does it become yet another interesting foray into nihilism? A so what?

Yet another rather interesting take on the cosmic artisan is presented by Swiss artist Ursula Bieman's animist cosmological forays through post-cinematic documentary essays. *Subatlantic* (2015, 11 min) and *Acoustic Oceans* (2018, 18 min) are exemplary as fictions that speculate on new forms of life. The first is set in the remote area of the Shetland Islands, Greenland's Disco Bay, and on a tiny Caribbean Island. In the second fictionalized documentary, the acoustic ecology of the oceans is examined by an 'aquanaut,' a she-scientist (Sofia Jannot, an eco-activist of the Sámi) on the Lofoten Islands in Northern Norway. The 'aquanaut' occupies the place of the event, a 'posture' (not a position) in François Laruelle's terms. It is a non-relational position, neither internal nor external but occupying a space of indeterminacy that then 'fictionalizes' the findings. Here, sound becomes the primal element of exploration, with its different wave lengths. In ocean channels, whales emit low level wave lengths, but each species has a different range and repertoire. *Lassen* technological apparatuses-media-assemblages are especially helpful when it comes to interspecies communication through sound. Recording and emitting of sound by all possible sonic instruments are (literally) in play. Animistic cosmologies, which call on indigeneity, have become cosmic in their design constructions by artists attempting to breach the divide between the human and non-human using inhuman (AI) techné (jagodzinski 2019). The seafloor especially is an important communication space for many creatures where new channels of commutation are discovered and where varying wave lengths of communication are emitted by whales over

vast distances. Such communicative ventures increase potential and thus are negentropic in their effects. To extend fictions with animals, increasing energy exchanges to begin an attunement to other ecologies is exemplified by these projects as a mediation takes place between the human and non-human via the inhuman AI technologies. The contingencies of an event can occur when an anomalous occurrence happens in such exchanges. We have only to think of the compassion shown by dolphins saving humans from drowning and shark attacks, and vice versa, humans helping to free stranded dolphins.

Lastly, carbon is a material that addresses the Anthropocene. It is a material that is the most common element in organic life; it is more adaptable than any other element in the periodic table, forming more compounds than any other element. Its abundance follows hydrogen, helium, and oxygen. It is the element that has designated the divide between organic and inorganic chemistry, biasing what is considered life or nonlife. Elizabeth Povinelli (2016) calls the ‘Carbon Imaginary’ one that “iterates and dramatizes the gap between Life and that which is conceived as before or without Life” (32). Carbon has strong associations with blackness, darkness, and the absence of light. The artworks of Onya McCusland and Frederik De Wilde present a contemporary continuation of such metaphysics, which surround the monochrome painting of black-and-white, whose genealogy stretches back from Kazimir Malevich and Alexander Rodchenko at the turn of the twentieth century, on through to Yves Klein, Ad Reinhardt, and Barnett Newman after the Second World War, and then to Frank Stella, Robert Rauschenberg, and Alberto Burri (Boardman 2019). As Thomas McEvelley (1996), in his sweeping analysis of monochrome painting since the twentieth century concludes: its ‘primacy’ became a central icon of the sublime in the twentieth century, not unrelated to the disasters of the two world wars and the explosion of the atom bomb. It is also the contemporary inspiration for François Laruelle’s (2012a) non-philosophical chromo-political musings on the ‘black universe,’ which questions the creative ‘lightening’ of thought that breaks the night sky. Then, there are the sublime explorations of light by James Turrell, where an entire extinct volcano (Roden Crater) becomes the apparatus of his art studio to capture cosmic light effects and the profound interests of ‘back holes’ as discussed above that point to ‘extinction.’ In this sense, carbon-black points to death as anorganic life, allusions again to the film *Ad Astra*.

The chromo-political affects of color, as discussed by Yvette Granata (2017) in relation to Laruelle’s photo-fiction, raise again the exchanges of energy through affect, pointing directly to the events that take place when viewing media images, and the types of cinematic apparatus in use for those affects to take place where there is a material exchange taking place in the event of viewing each color and their various color combinations emitting different wave lengths. It is the force (power) of color that is the ‘matter’ of the issue. The energy-matter exchange results in affects that surround the event of intra-action between material itself (e.g., molecular chemical exchange), which then has affects with and on humans. The *event* of color has to be ‘strange’ to be felt, otherwise nothing breaks through the ‘screen’ (Diagram 2: Fig. 11.2). In Laruelle’s (1995) terms, one becomes a stranger to oneself—what I refer to as ‘self-reflexivity.’ In Whiteheadian terms, a color has an ‘ingress’ factor to become a purposeful misuse of color (a catachresis) that disturbs sameness. The macro-symbolic sense of color has been the division of white-black through *Macht* technologies (‘vision force’ for Laruelle as in Diagram 1: Fig. 11.1) to assure the dominance of whiteness through the design apparatuses of digitalized technologies (Roth 2009). Granata (2017) calls on the Irish photographer Richard Mosse who uses a military thermal camera in his video project, *Incoming* (part of the larger project, *Heat Maps*) to trace and photograph the journeys of migrants fleeing from war-torn countries and conflicts. They become ‘generic’ forms of life (as discussed earlier), reduced to their glow of biochemical processes that ‘erase’ their identities to minimal recognition, leveling human bodies to that of any ‘body’ that emanates heat. One claim is that the apparatus of capture (thermal camera) as a *Macht* technology (surveillance and military predation) is inverted into a *Lassen* technology (the bodies of black and brown migrants and refugees) by making visible the invisible, revealing their plight as they journey from conflict. Here, the infrared light of the electromagnetic spectrum that captures the invisible light of the heat of human life becomes a negentropic energy source in its ‘reveal’ as a leveling to ‘anyone’ fleeing.

This is controversial, to be sure, as a certain nihilism also manifests itself as the ‘othering’ of specimens by a *Macht* technology—a ‘vision machine’ that has not been entirely erased. It raises the specter of photographic narcissism. But the ambivalency produced also raises issues concerning the kino-eye, the conflation necessary between AI (in this case the infrared thermal camera) and the photographer embedded in that camera. The

apparatus of capture to become an apparatus of ‘letting go’ would mean its placement in a posture that does away with any traces of narcissism to get at the ‘generic’ human. It would mean staging another photo-fiction where the ‘thermal camera thought’ itself (as AI) brings the photographer into the staged apparatus-assemblage in such a way as to recognize the ‘heat’ of his|her exchange with these bodies as well. Where has the ‘investment’ of energy of the photographer been placed? It would require the opening up of visibility to another level of ‘reveal,’ performatively restaging the problematic of their plight, pain, suffering, and alienation. This would then produce a “generic photo [which] is ethically people-orientated, in service of their defense and passes from the positive photo, devoted to narcissism of the world to the generic photo” (Laruelle 2012a, 53). The apparatus-assemblage of *Lassen* would move from a world-for-us to a world-for-itself through the forces of a world-without-us, consisting here of the force of infrared waves of the electromagnetic spectrum. As mentioned earlier, harnessing new technologies that use X-ray and ultraviolet light would be other ways to disrupt the colored world that has been ‘molarized’ through cinematic means.

Monochrome color—black-white—has been historically and politically overcoded. Its lack as well as fullness of color has signified the mysticism of the fourth dimension and received various transcendent religious overtones (Hinduism, Jewish Cabbala, occult spiritualist traditions, Rosicrucian formulations, Neo-Platonist essentialist unity, and so on) (McEvelley 1996). For Laruelle, however, “the essence of color is not colored: it’s the black universe. Metaphysical white is a simple discoloration, the prismatic or indifferent unity of colors. Phenomenal blackness is indifference to color because it represents their ultimate digress of reality, that which prevents final dissolution into the mélanges of light” (2012b, 405). Laruelle might just as well be talking about a ‘black hole’ as this description applies as well to it. Black becomes ‘something else’ than color as it does not emit photons. Yves Klein discovered, with the help of Eduard Adam, a synthetic resin called ‘Rhodopas,’ which he used to suspend monochrome ultramarine pigment to preserve its luminosity. This ‘discovery’ is also part of the genealogy of the explorations of black as matter that should ‘not matter’ as the metaphysics of the *void* come into speculative play, with the element of *carbon* being of particular interest. In this sense, the allotropes of carbon—diamonds, graphite, amorphous carbon, fullerene, and nanotubes—provide a range of structural forms made from carbon molecules. Paul Thomas (2013) has explored artists who are particularly

interested in Nanoart where the vibration of atoms, their turbulence, and ‘swerves’ are the core of its materiality, as is carbon. In this regard, on a different scale of molecularization, the artist Onya McCausland attempts to produce her own earth ‘amorphous’ carbon pigments sourced directly from various sites in England that have geological histories. She produces monochrome carbon ‘paintings’ that connect and link directly to the environment where they were mined, referencing the ‘deep time’ of the Earth. In a different order of engagement, there is also Black Quantum Futurism (BQF), its manifesto developed by Rasheedah Phillips (2015) in her attempt to bring Black (in all its socio-physical dimensions, which include dark matter), time (in all its quantum dimensions, which include Afrofuturism), and quantum theory itself, where quantum phenomena become linked with ‘African Spiritual/Religious Phenomena and Real-world correspondences’ (76–77). The creative research projects by the BQF Collective imaginatively intervene into the established founding narrative of colonialist USA, recalling wholistic methods of healing and communal memories, histories and stories. BQF engages *Lassen* technologies to address the negantropocene mentioned earlier.

More to the problematic, the Belgian artist Frederik De Wilde, in 2014, produced the world’s first blackest black artwork (a black hole). De Wilde plays with the effects attributed to ‘surface plasmon resonance’ (SPR): material that is stimulated by incident light as measured (ϵ) by its polarizability. The epsilon (ϵ) is the measure of polarity—that is, the absorption of light by a material’s surface. SPR is used as color-based biosensor applications on surfaces of metal nanoparticles. De Wilde is interested in nanoscale technologies, using, for instance, the first synthetic carbon molecule that had been invented (Buckyballs graphene, C60, fullerene molecule) to make nanotubes. He refers to them as ‘nano paintings.’ De Wilde figured out the process of growing 0.1% carbon material on a silicon wafer to produce a structured ‘color,’ a ‘super’ black material. The ‘cavity principle’ captures all light that falls on its surface, the idea being that a photon enters a box through a slit and has no chance to find its way out. The photons find their way in between nanotubes and are unable to surface again. The irregular surface of nanowire placed on top of the nanotubes (like hair) diffuses the light in all directions, so the surface stays black. How can an artwork become a converter of energy? This is also part of De Wilde’s problematic—that is, how to use this nanoblack in public spaces. Such use would increase negentropy as the

light, which is absorbed into the surface, is then transformed and dissipated as heat. Anorganic life is converted into more potential. Xtreme light and Xtreme dark come together, yet remain apart, superimposed. De Wilde's sculptural form—*Mine #1*, 2016—is such an attempt. It is made of titanium tubes that chart the labyrinth of coal mines that still remain under Belgium soil, so to speak. Upon this structure, a 'forest' of nanotubes is grown, the sculpture linking coal (carbon) to nanocarbon.

As cosmic artisans, both McCausland and De Wilde address the Anthropocene differently in relation to the materiality of carbon and time. They are engaged in intensive thinking that deals with materials in singular states, which are far from equilibrium states, by creating apparatuses-assemblages and processes that open up potential energies to offset what is a 'shrinking world' headed for extinction. We come full circle to where we started as black resonates with anorganic life, offering ways to detoxify the Anthropocene by experimenting in order to achieve the conditions where unprecedented events open up new imaginary-fictioning potentials to stave off the invisible toxic choke of the pollutant air, water, and land. With BQF, this agenda is extended to detoxify the colonial narrative of slavery which does not go away.

My wager has been that the cosmoecoartisan artists, as 'an avant-garde without authority,' are charged with the schizophrenic duty to rethink our specie's relation to the Earth by recognizing anorganic cosmic life that raises the problematic issues of nihilism, destruction, and extinction. This problematic speaks to impotence and vulnerability. Such a trajectory recognizes a 'realist' quantum position, with the proviso that a 'new physics' is likely to emerge when QM and General Relativity come together. The diagrams I have played with attempt to articulate the constant decentering of our planet against the incomprehensibility of the universe. I have used the term *abuman* throughout to identify projects of what is to come, more specifically an acknowledgment that there is no 'human' per se, but the post-evolutionary understanding of modifications to the Homo species via its technological externalizations over its short existence on an Earth that ensured its survival.

If this is a 'new materialism,' it is not one that follows the established paradigm for it projects something more deeply worrisome: it questions the *Zoë|bios* entanglement that entwines animal life (*zoë*) with politicized human life (*bios*). The speculation made here is that anorganic life precedes these philosophical trajectories that continue a version of a world-for us. Anorganic life is cosmological and in|different (jagodzinski

2021c). It is not biological ('bare or naked' life [*vita nuda*]), nor is it political, but it requires a dimensionality of unthought that remains in the shadows for now as it requires yet another shift between thinking and its Outside. It is creativity, but a creativity that far supersedes, for instance, the idea of aesthetics, or play that runs across all species. Anorganic life 'thinks' the Earth which we have yet to understand in this Anthropocene era. This might mean that the *abuman* is in|difference itself?

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Ahuman Manifestations: When There Is No Outside (or, a Long, Good Sigh)

Jessie L. Beier

I find myself sighing a lot these days. These deep, singular exhalations are usually only registered once I find myself in the middle or the end of this variant breath type; only during or after the sound of this pharyngeal fricative leaves my mouth and enters my ear. Sometimes the sighs are especially audible, articulated as guttural speech whose phonation is difficult to distinguish, emerging somewhere near the back of my oral cavity: HUUUUGHhhhhhh. Sometimes the sighs are quiet and hardly worth commenting on; just a soft reminder of the many physiological responses that constitute breathing “normally” in a rhythmic body conducted by difference. huuughhhhhhh. And sometimes the sighs get noticed when I undertake a double inspiration, when a first breath, which is indistinguishable from the typical processes of eupnea is made variant due to a subsequent larger breath; a bimodal inspiration; a breath taken on top

J. L. Beier (✉)
Horizon Postdoctoral Fellow, Concordia University, Montreal, QC, Canada
e-mail: jlbeier@ualberta.ca

of a preceding breath. huuughhhhhhh-Huuuughhhhhhh. Whatever the case, I find myself sighing a lot these days.

* * *

Of course, it is not exactly “me” who is doing the sighing. While, on average, humans are said to produce about twelve spontaneous sighs per hour, this variant breath type—one that takes in two to five times the volume of normal breath—is just a “natural” physiological response to the problem of spontaneous alveoli collapse in the lungs (Li & Yackle, 2017). Because these small air sacs located in at the end of the bronchial tubes are prone to spontaneous deflation, which can negatively affect lung function by reducing potentials for gas exchange, the big breaths induced by sighing can reinflate most of the alveoli in the lungs, thus preventing the negative effects of ongoing collapse. Sighing, in this way, is as “natural” as breathing itself. Research has shown that babies start sighing after their first 50–100 breaths as a way to improve the mechanical properties of lung tissue and develop “regular” breathing patterns (Li & Yackle, 2017). According to this physiological account of sighing, it is indeed not “me” who is found at the moment of exhalation, but an unconscious breathing body whose “normal” and “regular” rhythms are marked by necessary fluctuations and recurrent variations.

* * *

Sighing is perhaps “natural” in more ways than one, especially considering the disastrous state of affairs that now characterizes living and dying in the age of the (so-called) Anthropocene. In addition to physiological purposes, sighing is often explained in terms of its expressive functions, as just one component of paralinguistic that works to modify meaning and convey emotion through nonphonemic articulations. Described as a form of “meta-communication,” as just one example of vocalics or a vocalized but nevertheless nonverbal form of communication, sighing has been explained as a way to express emotions, and specifically “negative” emotions such as dismay, dissatisfaction, and futility. In these paralinguistic studies of sighing, it is explained in terms of its capacity to regulate stress and provide emotional transitions when, for instance, faced with difficult tasks and impossible problems (Tiegen, 2008). The expressive functions of sighing are evidenced in studies where participants work on difficult, and in some cases insoluble, puzzles, which is often met with

the generation of futile solutions and an accompanied series of sighs. The conclusion drawn from such studies is that sighing can act as an articulation of “giving up” when one realizes that an activity, plan, or desire must be discontinued or even abandoned (Tiegen, 2008). Within this logic, the sigh is proposed as a way to create pause before a new initiative or trajectory can be commenced. Extrapolating from this paralinguistic account, my incessant sighing may be an expression of my own moments, big and small, of “giving up,” of coming to terms with the futility I feel when faced with the seemingly insoluble puzzles that increasingly characterize planetary existence on a suffering planet. Sighing, in this interpretation, might therefore be considered a “natural” expression of the “negative” emotions that are raised by the ongoing, but far from spontaneous, collapses taking place far beyond bronchial tubes and the perceived boundaries of our skin and flesh. HUUUUUGHHHHHHHH.

* * *

Sometimes when I find myself sighing, I am staring out a window or at a screen thinking about “what might be done?” given the pressing problematics raised by today’s ecocatastrophic trajectories. From both of these vantage points, I can see quite clearly that it’s not looking good out there. By now, you’ve heard (but also seen and felt) the news. Heat deaths, food scarcity, climate plagues, unbreathable air, poisoned oceans, space junk, toxic bodies, plastic progeny, species extinction, irreversible biodiversity loss... but also global pandemics, (so-called) migrant crises, perpetual war, vicious dispossession, weaponized bull-shit, permanent economic collapse, politics characterized by barbarism, violence (fast and slow), and the crystallization of fascisms throughout the social sphere—these are just some of the events that weigh heavy and loom large as I spend my time staring out windows and at screens. HUUUUUGHHHHHHHH. I’ve attempted to offer versions of this list before as a way of drawing attention to today’s omnicidal state of planetary affairs and will no doubt offer similar serializations in the future. Such a list is by no means comprehensive and thus risks excluding other aspects of a contemporary scenario characterized by all sorts of ongoing annihilations and “minor apocalypses” (MacCormack, 2020, p. 175). On the other hand, such a list might be accused of being unnecessarily “doomy,” leaving out all of the “positive” outcomes and trajectories of the “Good” Anthropocene, one in which we humans can embrace our seemingly new role as agents of geological transformation

by not only affirming destructive power over the planet, but celebrating this power as an intrinsic and desirable aspect of human being. Against these “Good” vibes, lists such as the insufficient one proposed above are less-so a comprehensive analysis of current planetary problematics and more-so a linguistic equivalent of something like a deep, long, guttural sigh. HUUUUGHhhhhhh.

* * *

There it goes again: another variant exhalation that I didn’t see coming, only leaving. But what does it signal? Am I attempting to articulate my “negative” emotions, my deep feelings of despair and despondency given the current state of (omnicidal) affairs? Is this heaviness I feel in my chest, this pressure on my heart, what brings on the incessant sighing, or (gulp) is this the virus making itself known in my body? Should I be (more) worried? Should I book a test? Should I self-isolate? Or, perhaps all of this heaviness is *just* an expression of anxiety; just another moment of panic fueled by a wild imagination and the trauma to back it up. Or maybe, and this is most likely the case, I’m just breathing “normally.” Maybe this is just what breathing is like: a series of longer and shorter sighs that, when I start thinking about them too much, take my breath away.

* * *

The breath-taking context within which I find myself sighing is not only at the top of my mind, or perhaps more accurately, stuck in my throat, but has become a key refrain for articulating questions of educational transformation given current planetary trajectories. Across educational discourse, including that forwarded in this collection of ahuman analyses and proposals, the advent of the so-called Anthropocene has provoked a range of educational responses that attempt to deal with the encroaching challenges raised by today’s ecocatastrophic conditions. For many educational thinkers, the Anthropocene, as both a theoretical concept and a representation of today’s material urgencies, calls into question some of education’s “most cherished” structures and commitments, bringing forth the bleak realization that educational domains today are ill-conceived and ill-equipped to deal with the pressing problematics raised by anthrop-scenic phenomena. As such, the Anthropocene has provoked calls for a “*substantial rethinking* [of education] — of its content, its purposes and its relationships” (my italics, Gilbert, 2016, p. 188) so that

education might become more adequate to the pressing challenges that lie ahead, or that are, in many cases, already here. While proposals to substantially rethink or reimagine or remake or remodel education differ in their specifics, what they often have in common is a claim that we must make *manifest*, that is, make visible, audible, and perceptible, alternative educational demands and imaginaries so as to provoke real educational change. Such claims are central to calls for the “innovation” of educational forms, through, for instance, more “creative” modes of research and writing, or via the development of new educational manifestos that aim to reorient educational futurity in relation to post-human, post-qualitative, and/or post-critical modes of pedagogical inquiry. In each case, the aim is to communicate, through declarative statements and new imaginaries, future-oriented demands and visions, or put another way, to *make manifest* that which is not present, that which has yet to be actualized.

* * *

The manifesto form is exemplary of this prophetic goal, working “through the authority of the prophet or seer who can forecast dystopian and utopian possibilities from the current situation” (Lewis, 2017, p. 30). As just one of many educational examples, Hodgson, Vlieghe, and Zamoski’s (2017) *Manifesto for a Post-Critical Pedagogy* demonstrates how the manifesto form offers a way to prognosticate, and ultimately make manifest, a specific set of principles worthy of educational commitment. In this example, the manifestations proposed aim to go *beyond* the hopeful narratives that undergird “traditional” critical pedagogy, where, as the authors assert, “the hope of emancipation rests on the very regime of inequality it seeks to overcome” (p. 17). In this post-critical instance, the manifesto form is used purposefully to direct future-oriented educational transformation so as to move “beyond” critical approaches, “beyond” merely revealing what is *really* going on, or showing what educators *ought* to do, so as to create a space of thought that enables educational practice to gain purchase on current conditions by articulating demands founded “in a hope for what is still to come” (Hodgson et al., 2017, p. 15). Following in the line of education’s relentlessly future-oriented projections, this example of education’s prefiguration is concerned with the transformation of education toward some kind of alternative future state, one that is “still to come” but nevertheless

communicable through public declaration. The manifesto form, in this example, therefore adheres to the tradition of educational philosophy that always “writes in a conditional tense predicated on there being a never-ending educational future” (Peim & Stock, 2021, p. 7). Within this vision of a perpetual *education after education*, pedagogical transformation remains tethered to the axiomatic assumption that education will forever be devoted to the propagation and preservation of a particular form of future-oriented human-directed transformation, even, or perhaps especially, in light of the conditions of exhaustion and extinction in which education finds itself today.

* * *

While the manifesto, as just one example of education’s prophetic preoccupation, aims to develop possibilities for transformation toward some desired future, some “outside” to present educational realities, it is nevertheless invested in particular regimes of authority and visions for transformation. As such, the manifesto form contributes to the common refrain that what is needed to stave off the urgent problems facing education today is alternative manifestations of educational possibilities so as to project “better” educational futures. Within this common refrain, the appeal to manifest educational alternatives, that is, to create educational visions that can be “readily perceived by the senses, easily recognized by the mind” (Merriam-Webster, n.d.), raises all sorts of vexing questions and problems about the limits of (human) representational systems, temporal frameworks, and sense-making apparatuses. At the same time, however, many calls to rethink, reimagine, and relaunch education and its reasons deflect and downplay such questions in the name of affirmative mantras and optimistic narratives that project an education after education, one that will undoubtedly bring about a “better” future for “us.” Through such affirmations, the issues of insufficiency, diminishment, and extinction that might otherwise be raised by something like the Anthropocene and its ongoing annihilations are not treated as cause for “giving up” on education and its “most cherished” commitments, but is instead modulated to form an optimistic site of “radical indeterminacy” for the production and generation of new educational imaginaries. While this aspirational modulation may provide a hopeful melody (for some), particularly amidst the noise of today’s discordant convergence of crises, it also supports the claim that the difficult problem of how to enact revolution in

counter-revolutionary times is one that can be solved through “better”—more “diverse,” more “sustainable,” more “harmonious”—prefigurations and representations. If only we could better *see* or *hear* ourselves and the world, and if we could more adequately manifest and represent the educational changes we want, then we might be able to overcome the disastrous standardizations that have come to delimit pedagogical possibility. The manifesto, as just one articulation of such affirmative visions, therefore provides an important analogy for examining and potentially challenging the ways in which educational transformation is itself imagined, and reimagined, today. The very declarations made possible through something like the post-critical manifesto example offered above, after all, are founded on the authority of the manifesto itself as a form that orients transformation through the formal features of “instrumentality, teleology, and hope” (Lewis, 2017, p. 32). These features are, in many ways, what has led to the ubiquitous adoption of manifestos by corporations, political-appearing organizations and educational institutions alike, where the manifesto is appropriated as a way to communicate brand identities, purposes, and visions. Where the manifesto has become a common tool for communicating emotionally-driven brand connections and captivating audiences through pseudo-political persuasion, its revolutionary potential is highly debatable. This is also true for educational manifestos, where it is the manifesto form itself that allows for a correlation of future trajectories to the reproduction and maintenance of a standardized “inside,” one that can and should be communicated so as to direct transformation based on the unquestioned possibility, even promise, of an undeniably “better” education after education.

* * *

While calls to substantially rethink and reimagine education “beyond” or “after” its current rhymes and reasons is perhaps necessary given a planetary situation that is increasingly out-of-synch with education’s long-held commitments, the very desire to manifest an “outside” thought also plays a role in the way in which educational transformation, and ultimately pedagogical possibility, is actualized. After all, and as Deleuze and Guattari propose, the idea of the “outside” does not imply the existence of a discrete exterior and/or transcendent category, but instead refers to the processual folding of “inside” forces that nevertheless constitute a perceived “outside.” Where “[t]he outside is not a fixed limit but

a moving matter animated by peristaltic movements, folds and foldings that together make up an inside,” that which is perceived as “outside” is not something “beyond” or “other” than the outside, but “precisely the inside ‘of’ the outside” (Deleuze, 1988, p. 96). This is to say, in the same breath, or perhaps through a double inspiration, that *there is no outside*, and, at the same time, the “outside” is still a “fact” of the world. That is, the concept of the “outside” references the way that even the most given of conceptual constraints are prone to leakages, how, even in the most calcified of power relations “everything flees” (Deleuze & Parnet, 1987, p. 135). The “outside,” in this way, references how the perceived boundaries between “insides” and “outsides” are made possible through virtual processes of de- and reterritorialization from which the actual is produced when virtual potentials are bound and shaped into internally consistent, intensively-fused blocks. It is through these outside-foldings-in, which also entail concomitant processes of insides-folding-out, that the virtual realm of potential, which is always real, produces the very conditions for the actualization of events of becoming, and thus transformation. What this concept of the “outside” glimpses, then, is how virtual potentialities, or that which is perceived as “outside,” can only be realized, and thus communicated, *after* the event of their actualization. As such, the “outside” cannot be thought as a whole that exists “out there” that can be reduced to universal necessity and prefigurative representation, but instead can only be grasped, albeit *involuntarily*, through something like deduction every time one’s habitual relationship with the boundaries between perceived “insides” and “outsides” is troubled. The problematic raised by this notion of the “outside,” then, is not one of existence, but rather one of expression: “one cannot write sufficiently in the name of an outside [because it] has no image, no signification, no subjectivity” (Deleuze & Guattari, 1987, p. 23). And so, where calls to reinvent, reimagine, and rethink education in relation to “outside” possibilities become more frequent, the “outside” itself becomes a problematic object to think with and think through. The question is not to which “outsides” should we direct transformation, but instead how to form “a new relation to the outside,” where the “outside” does not refer to yet another transcendent representational category, but instead signals “the fact that we are not yet thinking” (Deleuze, 1989, p. 167).

The manifesto, as just one future-oriented form used to reimagine and rethink educational transformation, offers a site to examine and experiment with the problem of expressing an “outside” thought, and thus the risky venture of forming weird relations to that which remains unthought. The manifesto form, in this way, offers a site for probing the limits and potentials of enacting pedagogical resistance within regimes of representation that (cl)aim to project, and thus actualize, future-oriented transformation. Indeed, the collection of essays that make up this very book were originally pitched as a series that might form its own kind of manifesto, an “ahuman” one aimed at making manifest alternate ways of “writing, reading and ‘doing’ ahuman work” (MacCormack, 2020, p. ix). Inspired by Patricia MacCormack’s (2020) own take on the manifesto form, which positions its mode of writing as a speculative medium for dealing with seemingly impossible scenarios, we imagined the book as a multiplicitous series of “small tactics” and “minor radicalisations” oriented toward “thinking of ways beyond and ways out, not for ourselves, but for the world” (MacCormack, 2020, p. 2). Taking MacCormack’s call to “no longer argue like a human” to heart, the manifestations gathered here are not just invested in collective liberation of the all-too-human “we” that continues to undergird education and its emancipatory fantasies, but instead endeavor to experiment with strange, even counter-intuitive, relations to the perceived “outside” of those regimes of reading, writing, and recognition through which pedagogical possibility is itself imagined and reimaged. As MacCormack (2020) writes, “[t]here is an inherent contradiction in a manifesto in that it demands absolutes because it seeks action that, in this case, mobilizes radical compassion through creativity, while also being deeply antagonistic to essentialist or generalizing claims” (p. 34). The ahuman manifestations assembled here—be it the conjuring of ahuman pedagogies and curricular “forcework,” the rewiring and indefinability of machinic re/distributions, or the proposition of non-pedagogical approaches to abolitionist futures—perhaps exemplify such contradictions and, as such, are not interested in producing blueprints for transformation, but instead probe potentials for expressing educational change in ways that dismantle dominant systems of power and representation by “demanding creativity in an increasingly impossible world” (MacCormack, 2020, p. 11). Perhaps the aim of this collection then, if one can be discerned, is to mutate the manifesto form from a public declaration of goals that can be “readily perceived by the senses” and “easily recognized by the mind” to the generation of pedagogical

“probe-heads,” those “nonsignifying, nonsubjective, essentially collective, polyvocal and corporeal” (Deleuze & Guattari, 1987, p. 17) modes of articulation that are able to rupture dominant images of thought through the formation of “strange new becomings, new polyvocalities” (Deleuze & Guattari, 1987, pp. 190–191). Through this experimental series of ahuman manifestations, the question of educational transformation is no longer one that can be answered through the promise of “better” imaginaries and representations, but instead asks how education—its reasons and futures—might become capable of experimenting with the formation of strange and anomalous relations to the “outside,” which means taking seriously the humbling thought that, indeed, there is no “outside” except for the continuous folds and folding of “inside” forces and intensities.

* * *

Huuuughhhhhhh. Another sigh interrupts my thoughts. But this time I cannot help but think of it as an *ahuman manifestation*, an articulation that is not entirely my own, but an expression of outsides-folding in, an expression of what I, “myself,” cannot actually help to think. Sighing, once again, is not always a conscious event, nor is it the same as purposefully stopping to breathe deeply, a technique offered more and more as a way of countering the affective tonality of anxiety that continues to ring out across social life. Sighing is not the result of guided meditations nor is it a strategy for enacting concerted mindfulness. Sighing is unconscious sometimes, necessary always. Sighing plays an integral role in processes of release and regulation, what is colloquially known as *a sigh of relief*. In paralinguistic analyses, for example, sighing is explained as necessary to emotional transitions when what is perceived as some sort of “negative” situation comes to an end or has been avoided (Soltysik & Jelen, 2005; Tiegen, 2008). A discernible *phew*. Studies of sighing in relation to relief suggest that the act of sighing leads to emotional release, signaling how sighs, anxiety sensitivity, and stress regulation are importantly interrelated (Vlemincx et al., 2017). Sighing, in this formulation, works to bring about a reboot, both emotionally and physiologically by resetting normal respiratory variability, which in turn is linked to emotional regulation and feelings of relief (Vlemincx et al., 2013). This theory has been used to explain why those who are anxious sigh more, while also providing a rationale for why working on a difficult mental task may cause increased frequency of sighing. However, while such studies point to the way in

which sighing can seemingly be induced by individuals as a form of relief, it does not fully articulate the processes through which sighing occurs. When I find myself sighing, it is not always “me” who induces this respiratory reset. Sighing is not always a conscious decision, but occurs as a reflex generated in a brainstem region containing a cluster of several thousand neurons called the preBötzing Complex (preBötC) where “normal” inspiratory rhythms are generated (Li & Yackle, 2017). While sighs are attributed to emotional regulation, in most cases they actually go unnoticed. Occurring spontaneously every several minutes when a small subset of neurons (~200 neurons) receive bombesin peptidergic signals from other breathing control neurons (Li & Yackle, 2017), most of the sighing that I find myself within or after happens at a register that is not “known” to me, nor is it always reflective of my emotional state. The relief induced by sighing, in this way, cannot be explained away as an individual choice based in desires for achieving some sort of emotional transition or ameliorative transformation, but instead points to an ahuman realm that courses within and without the perceived boundaries wherein I find myself sighing.

* * *

The sigh, in this way, offers a figure for ahuman manifestation, one that frustrates the promise of affirmative resets and optimistic transitions founded on individual agency, in turn corrupting fantasies of communicating “better” educational imaginaries in favor of *arousing*—stirring up and rekindling—necessary difference. The arousal brought on by sighing is not the same as the 24/7 stimulation that seemingly drives contemporary technological mediations and desiring-flows in today’s ubiquitous attention-machines of capture, but instead signals an event wherein sense organs are stimulated to a point of perception, such as that which happens in transitions from slumber to awaking. Indeed, in addition to physiological and emotional sighing, this respiratory variability is frequently observed during the transition from sleep to waking, as demonstrated by studies of waking infants where sighing is the first behavior observed in a series of stereotypic motor activities (Li & Yackle, 2017). In studies of the brain’s electrical activity, arousal has been shown to occur immediately or after most sighs, providing support for the important role sighing plays in processes of perceptual awaking. But more than that, the arousal invoked by sighing highlights the way in which the very mediation of wakefulness

is made possible through changes in perceptual intensity, which, in this case, are not aberrant to the “normal” rhythms of breathing, but necessary for life itself. This is exemplified through the dismal, albeit more and more common, instance of mechanical ventilation used to sustain breathing in patients requiring critical respiratory care, such as those that occupy Intensive Care Units (ICU) amidst third and fourth (and fifth and sixth) waves of the most current global pandemic. In these growing examples, alveolar collapse is observed when ventilation is set at a constant frequency and tidal volume. And so, to combat this damaging standardization, sighs are introduced into the ventilation program every several minutes, resulting in the improvement of both lung compliance and blood oxygen levels (Li & Yackle, 2017). What this example shows is how sighing is not just a paralinguistic expression of emotions, nor is it an individually-regulated technique for inducing relief, but is instead *necessary* for the breathing that makes (human) life possible in the first place.

* * *

While sighing is typically attributed to humans and their physiological, emotional and perceptual processes, other mammals, such as dogs, monkeys, horses, and rodents, have also been said to sigh. On the one hand, these non-human examples of sighing point to a tendency to download human qualities onto all “things” as way of correlating life and living in terms of anthropocentric and anthropomorphic means and ends. This is evidenced through studies of sighing in rodents where, in an exemplary instance of human dominance (and cruelty), the centrality of sighing for sustaining (human) life has been “proven” by ablating the central sigh control circuit in rats, who, several days after removing their sighs, experience irregular breathing (Li & Yackle, 2017). Whether introduced through machines or studied through the ablation of animal controls, sighing is often examined and understood in terms of all-too-human forms of life and living. At the same time that these explanations of sighing point to the ongoing tendency to conflate and correlate all life to that of the human, however, events of sighing also counteract such habits, exposing how life, including that of the human, involves the dynamic folding-in of inhuman and non-human forces and intensities that frustrate typical boundaries between perceived “insides” and “outsides.” Sighing, in this way, provides a strange articulation of life, an ahuman manifestation

that understands “giving up” as necessary for actualizing the difference through which life itself might be substantially rethought. The “giving up” going on here therefore signals the difficulty, even horror, that comes with the impossible thought of thinking the world in which we live as “both a human and a non-human world” (Thacker, 2018, p. 2). Despite our best efforts of “anthropic subversion” (Thacker, 2011), the philosophical, and I wager educational, conceit that reality exists as it does for an (educated) human subject is troubled by the sigh, which raises, albeit in ways that are only sometimes or barely audible, the horrific thought of an impersonal planet in which human life and vitality no longer figure as privileged modes of being.

* * *

The sigh is just one index of the anorganic intensities through which all life, including that of the human, is breathed into being, revealing a cosmicity that resides at the heart of its negative singularity (Shipley & Masciandro, 2012, p. 76). Moving via endless auto-release, the sigh is a “thought that thinks without you, speaks where you are not” (Shipley & Masciandro, 2012, p. 76). The sigh signals that, before, after, and “beyond” human systems and structures, there is “nothing and thus literally everything” (MacCormack, 2020, p. 25). Processes of life and death, of living and dying, sleeping and waking, are teeming with anorganic, chaotic flows and intensities that “occur in anthro-nature as indices of events and records of occupants” while nevertheless indexing ahuman capacities for “negation and affirmation (sometimes both at once)” (MacCormack, 2020, p. 26). The sigh, in this way, articulates how the very concepts of affirmation and negation are only quantitative, and thus discernable, within human systems (MacCormack, 2020, p. 27), demonstrating how such binary systems of perception and recognition are made possible through verisimilitude with the human being, which requires “a refusal to acknowledge an other who exists always as an equal within natural relations but may not within human knowledge of nature” (MacCormack, 2020, pp. 26–27). The negative singularity of the sigh is therefore not one that is opposed to the affirmation of life, but instead signals a negative affirmation, or, in a somewhat oxymoronic fashion, a “negative articulation of immanence” (Sexton, 2017). As Deleuze and Guattari (1996) assert, immanence is not immanent to any additional term (pp. 44–45), and thus without term, the only proper vocation for

immanence is “to accede to what is improper to all terms, and such that there is nothing to affirm but what is without term” (Sexton, 2017). The sigh is exemplary of this thought of immanence, albeit one that thinks without “me,” emerges where “I” am not, raising unthought problems when it comes to perceiving that which exists “outside” of my ability to think it, a problem that can and will not be resolved through “better” representations. Put another way, the sigh points to a problem for “my” thinking, one that is:

resolved by neither visibility nor invisibility, by neither sound nor silence, by neither enlarging nor shrinking the scale, neither broadening nor narrowing the frame [but is perhaps] addressed most pointedly and most poignantly as a form of appearance that annuls itself, a self-cancelling utterance, an involution of scale, a torquing of the frame, all perhaps as a means of exercising some influence over what cannot be controlled. (Sexton, 2017)

The sense of relief elicited by the sigh, then, is one that involves a “giving up” on those terms and grounds that would correlate this utterance to self-possession and self-control in the first place.

* * *

The sigh, as an ahuman manifestation of groundlessness, one that signals that there is “nothing to hold onto, no foothold, no supports, and no sustenance” (Sexton, 2017) is the sound of recognizing the failure of human thinking for accounting for its own limits and inadequacies, or what might be best summed up as the sound of pessimism. As pessimist philosopher and philosopher of pessimism, Eugene Thacker (2012) asserts, “in pessimism, the first axiom is a long, low, funereal sigh” (p. 66). HUUUUghhhhhhh. In pessimism, which is often disparaged and dismissed as “the lowest form of philosophy,” as “merely the symptom of a bad attitude,” Thacker finds a philosophical form of disenchantment that is best expressed sonically as a “chanting, a chant, a mantra, a solitary, monophonic voice rendered insignificant by the intimate immensity surrounding it” (Thacker, 2012, p. 66). Or, put another way, as a long, deep sigh. HUUUUghhhhhhh. This sound of “giving up,” however, does not aim to communicate, or make manifest, emotional states and future-oriented desires, but instead emerges as a “vacuole of non-communication” (Deleuze, 1995b, p. 175), a hijacking of those

expressions that aim to correlate life to binary modes of affirmation and negation so as to control it. The sigh, it might even be said, is the “live pneumatic form of the soul’s eventual exit from the dead body’s mouth, the sigh restores consciousness to the funeral of being, to the passing away that is existence” (Shipley & Masciandro, 2012). Through the sigh, which is not always audible and, indeed, may even go unnoticed, a pessimistic orientation to philosophy, and I wager here, educational transformation, is one that is invested in raising problems without solutions. Such an orientation thus involves “giving up” on the unquestioned fantasies of amelioration and solutionism to which educational transformation so often aspires. Positioned as an ahuman manifestation of pessimism, the sense of relief offered by the sigh is one that offers a glimpse into the “nightside of thought, a melodrama of the futility of the brain, a poetry written in the graveyard of philosophy” (Thacker, 2012, p. 66). The sigh, as a weird figure of educational transformation, resists the progressive impulse to tether pedagogical life to the affirmative production of an education after education by exercising pedagogical modes and methods aimed at letting go and giving up. Given the Anthropocene’s agential framing of humanity, which works to reaffirm the disastrous postures that got us here in the first place, it is becoming increasingly clear that “we have to *let go* of our desire to plan, to act in ways that conform to a priori rules or maxims, to act only in the (false) certainty that our actions are just because they are oriented toward some good which we cherish” (my italics, Snaza, 2018, p. 352). Where “[w]e lack even the most rudimentary theory of ‘giving up’” (Thacker, 2018, p. 51), and further, where attempts to dilate and decenter the human remain largely incapable of embracing “the grace in not knowing and in leaving be” (MacCormack, 2020, p.13), the sigh as ahuman manifestation offers a counter-intuitive approach to the problem of educational transformation, in turn dilating pedagogical possibility.

* * *

Working against the impulse to better envision, imagine, and represent the futures toward which educational transformation should be directed, the sigh points to the function of a “mourning voice,” wherein expression is rendered indistinguishable from so-called “outside” forces, resulting in “the crumbling of the human into the unhuman” (Thacker, 2012, p. 72). This newfound relation to education’s perceived “outside” does

not aim to dominate imaginaries and direct transformation in predetermined ways, but manifests as a whisper, a faint articulation of fatigue and resignation, “a sound just articulate enough that it could be heard to dissipate” (Thacker, 2012, p. 73). huuuughhhhhhh. The sigh, in this way, not only points to the limits of human-centered manifestations and prophetic visioning, but also signals the deep sense of exhaustion through which pedagogical possibility is itself actualized, or not. Many of the times that I find myself sighing, that is, when I actually notice this “mourning voice” that is not quite my own, I wonder if this fricative enunciation is just my drained and burnt out body gasping for air. Like so many, I’m tired again. And again and again. But, as Deleuze (1995a) asserts, being “[e]xhausted is a whole lot more than tired” (p. 3). Whereas my tiredness might signal that I have exhausted the *realization* of possibility, my exhaustion “exhausts all of the possible” (Deleuze, 1995a, p. 3). Put another way, when I am tired, I am no longer prepared for possibility, whereas when I am exhausted, there is no possibility as such: “[t]he tired can no longer realize, but the exhausted can no longer possible” (Deleuze, 1995a, p. 3). Being tired, then, does not mean that possibility has been exhausted, but rather I become tired by continuously combining sets of variables that necessarily exclude possibilities through the standardized realization of what has been deemed possible in the first place. When it comes to substantially rethinking education—its content, reasons, and futures—it may be the case that educational thought is itself tired of realizing all the possibilities for transformation due to the way that they are always-already prefigured in relation to the constraints imposed by education’s “inside” organizations and commitments. That is, educational thinking and rethinking are perhaps tired to the extent that they can only ever realize possibility in relation to the predefined fields that education is inevitably *going to realize*, and not as something that is engendered *as it is realized*. Huuuughhhhhhh. Counter to such tiring recapitulations, which realize the possible through the *exclusion* of possibilities, the notion of the exhausted, which might be articulated through a long, deep sigh, seeks to *realize the impossible*, and as such does not exclude possibilities, but *includes* disjunctively. As Deleuze (1995a) writes, “you combine a set of variables of a situation, provided you renounce all order of preference and all organization of goal, all signification” (p. 3). While my instinct is to read my incessant sighing as a sign of fatigue, this sigh/n might instead articulate a sense of exhaustion that appears through an emptying out, a quiet exhalation, of all the possibles that have been tried and failed

in my attempts to realize the impossible. With such exhaustive emptying, “one has no where to hold on: neither a utopia, nor an ideology, nor an anchor. And before this impossibility, one has no choice. *A possible must be invented*” (Pelbart, 2015, my italics, p. 17).

* * *

In many ways, the proposals offered in this collection of ahuman pedagogies are responses to this task of impossible invention. The essays that make up this collection may, in this sense, be thought of as a series of voluminous sighs that are life-affirming in their “call to affects” (MacCormack, 2020), albeit in ways that see the distribution of the value of life very differently than those all-too-human regimes of representation that have come to undergird and overcode educational transformation. In contradistinction to dominant forms of future-oriented manifestation, which often seek to declare and communicate through the “Order of Mars,” the Order of Knowledge, of domination, enforcement, and management, the sigh as ahuman manifestation always retains an occult, or hidden, dimension, aligning it with the “Order of Venus” and witchy pedagogies that necessitate curiosity and grace, “the leaving be of things as their own ebbs and flows” (see MacCormack, Chapter 2). The sigh/ns produced by this nonphonemic utterance draw attention to the inhuman and non-human that is the human, the dissonant rhythms, intensities, and literacies that are not “my” own but that nevertheless alter the territories through which I, “myself,” am becoming. The sigh, in this way, is just one invocation of becoming-ahuman, which, transposed to the site of education and its various “situations,” orients pedagogical questions and practices in ways that necessitate a very different “politics of care,” one that requires, at the same time, a caring for that which makes our lives possible in the first place and a concerted “giving up” on caring about that which has limited our very capacity to care (see Snaza, Chapter 3). The sigh, as the sound of philosophical failure, might also be the sound of an ahuman existentialism, a voiceless noise of destabilization, an expression of both human creatureliness *and* limitedness, an articulation of the im/possibilities that arise when curricular thought and educational philosophy must face up to insoluble puzzles and intractable problems (see van Kessel, Chapter 4). Often going unnoticed, or at least at registers that are not readily re-cognizable by me, myself and I, the sigh’s resetting functions are perhaps better described as “unsettling” where the

sigh is a haunted exhalation, an apparition that shows how the beginning, of a breath for instance, has already begun elsewhere (see Higgins, Chapter 5). The sigh, which speaks, albeit in non-communicative ways, of the emergent and unexpected constellations of life and non-life, signals the ongoing intrusion of the “impersonal, extraterritorial, ahistorical and ahuman” (see Carstens, Chapter 6) and, as such, offers a very different figure for projecting education’s transformative potentials than what is often pitched (and sold) in dominant educational discourses. While studies of sighing are often correlated to human “manners of being,” the sigh breaks and disassembles such re/de-territorializations through its quiet dissipations, manifesting how all becomings, including pedagogical ones, involve a becoming-minor made possible not through instrumental and teleological political demands and declarations, but through ongoing resingularizations that have neither a grounding standard nor a transcendent “beyond” (see Boffa, Chapter 7). Unlike the manifesto, which functions as a public declaration of future-oriented demands, the sigh as a figure of transition most often remains invisible, under the radar, imperceptible to dominant forms of communication and control, and as such offers a very different “prophetic organization” than those put forward by typical projections of and for educational futurity (see Battle, Chapter 8). When it comes to “substantially rethinking” education and its reasons, its futures, then, the sigh carries an abolitionist charge, one that provokes ahuman manifestations and “human strikes” that do not seek to simply redistribute subjective resources in more “just” ways, but ask how pedagogy might itself become a necessary terrain of abolition (see Culp and friends, Chapter 9). Despite common interpretations of the sigh’s expressive qualities when it comes to “negative” emotions, the sigh is not strictly affirmative or negative, neither human nor non-human, but instead unfolds in the space between such distinctions, remaking them in the process. The sigh disavows, albeit involuntarily, the “terminal protagonism” through which education continues to refuse the persistence of the negative; the sigh as a “fatal strategy,” as the “mourning voice” that speaks where “I” am not, deepens the negative conditions through which life and non-life are endlessly affirmed (see Mikulan & Wallin, Chapter 10). The sigh, as a weird and weirding, ahuman pedagogical figure of transformation is just one indication of the “profound transformation that occurs as evolutionary and involutory molecular distributions physiologically and psychically change over time” (jagodzinski, Chapter 11). As just one expression of exhaustion, the sigh

renounces the predetermination of an “outside” future that can and should be represented through “better” educational manifestations by bringing forth the realization that bodies, including that of the human, but also that of education, operate in manners distinct from our thinking them. Positioned as a series of ahuman manifestations, the essays offered in this collection are not so much presented as a new manifesto meant to invoke a transcendent “outside” to which education should strive, but instead indicate the actual finitude of the living present, of the body and the organism as it is subjected to, and exhausted by, the contraction of instants known as now. HUUUUGHHHHHH.

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INDEX

A

- abolition, 9, 12, 25, 39, 66, 168–177, 181–183, 185, 188, 283, 292
- activism, 10, 20, 24–32, 143, 173
- aesthetic, 5, 6, 8, 101–103, 105–108, 113–118, 125–127, 132, 138, 143, 238, 240, 246, 247, 260, 266
- affect, 2, 10, 11, 20, 23, 25, 28, 31, 32, 36, 39, 43–45, 63, 69, 101–105, 113, 114, 117, 118, 125, 127, 130, 131, 134–137, 139, 200, 216, 224, 225, 228–230, 233, 238, 246, 247, 249, 252, 257, 260, 262, 276, 291
- ahuman, 8–13, 21–23, 28, 31, 32, 37, 38, 57, 64, 65, 67, 79, 100, 103, 108, 110–112, 114, 115, 117, 118, 168, 216, 220, 230, 251, 256, 258, 265, 266, 278, 283–289, 291–293
- algorithm, 2, 12, 42, 46, 109, 111, 113, 127, 129, 130, 139–143, 159, 214, 240
- animal, 4, 6, 21, 24–29, 31, 32, 57, 63, 67, 105, 109, 174, 205, 219, 250, 252, 261, 265, 286
- Anthropocene, 3, 5, 6, 8, 10, 12, 25, 29, 55, 56, 58, 62, 100, 101, 107, 109, 111, 113–117, 202, 203, 207–209, 215, 219, 220, 248, 249, 256, 258, 261, 265, 266, 276–278, 280, 289
- Anthropocentrism, 9, 17, 19–22, 26, 28, 30–32, 38, 117, 195, 200, 203, 226, 232
- art/artistry, 8, 20, 26, 28–30, 32, 102, 117, 143, 149, 155, 157, 161, 215, 224, 226, 256, 257, 261

B

becoming, 6, 8, 12, 13, 23, 28, 29, 31, 38, 40, 43, 48, 50, 51, 58, 86, 101, 103–106, 108–111, 114, 115, 118, 124, 128–131, 137, 138, 144, 172, 182, 191, 193–198, 209, 214, 216, 217, 219–221, 229, 237, 240, 241, 243, 245–247, 256, 257, 282, 284, 289, 291, 292

black/blackness, 24, 36, 42, 84, 113, 129, 149, 150, 152, 153, 156–158, 161, 173, 176, 180, 181, 185, 188, 223, 228, 230, 234, 237, 248, 253–256, 258, 263–265

C

capital/capitalism, 4, 5, 17, 19, 20, 25, 37, 45, 88, 101, 107, 133, 139, 140, 156, 161, 162, 174, 214, 240

care, 10, 21, 25, 26, 28, 30–32, 38, 40, 41, 47, 49, 51, 63, 151, 157, 183–186, 286, 291

climate/climate change, 45, 56–63, 66, 68, 69, 132, 150, 151, 156, 172, 202, 203, 205, 206, 213, 214, 218, 277

colonialism, 36–39, 45, 90, 155

community, 40, 56, 62, 63, 68, 124, 125, 127, 132, 143, 151, 152, 154–161, 171, 176, 181, 203

control, 3, 6, 7, 20, 24, 29, 35, 36, 42–44, 46, 48–50, 124, 139, 155, 187, 206, 216, 235, 251, 253, 259, 285, 286, 288, 289, 292

creativity, 10, 11, 31, 140, 217, 220, 231, 256, 258, 266, 283

crisis, 9, 20, 56, 58–60, 62, 63, 66, 68, 69, 105, 151–154, 156, 157, 168, 169, 183, 184, 186, 187, 203, 259, 277, 280

curriculum, 8, 11, 13, 44, 45, 50, 77, 84, 125, 126, 133, 183, 192–194, 196–202, 208

D

data, 4, 11, 35, 40–46, 49, 50, 106, 113, 114, 138, 139, 141

death, 19, 20, 24, 42, 47, 55, 56, 58–60, 68, 69, 84, 85, 107, 149, 179, 193, 197, 206, 217, 218, 250, 254, 261, 277, 287

Deleuze, D., 102, 109

Deleuze, G., 2–4, 12, 13, 23, 24, 28, 29, 43, 44, 46, 101, 103, 104, 108, 111, 113, 115, 117, 124, 127–131, 133, 135, 136, 138–140, 143, 172, 186–188, 195, 197, 215, 217, 218, 220–227, 229–233, 237–243, 245–247, 249, 251, 252, 254, 256, 258, 281, 282, 284, 287, 288, 290

desire, 2, 3, 12, 17, 19, 21, 22, 24, 26, 36, 117, 124, 133, 135, 137–140, 144, 168, 172, 175, 176, 178, 183, 197, 200, 203, 205–208, 215, 224, 238, 247, 277, 280, 281, 285, 288, 289

diagram/diagrammatic, 13, 134, 220–231, 234, 235, 237–243, 245–252, 254, 255, 262, 265

digital, 5, 101–103, 105, 107, 108, 111, 113, 115–117, 124, 125,

- 127, 128, 131–140, 143, 144,
180, 224, 225, 227, 240, 241,
262
- E**
- education, 1–6, 8–12, 25, 36, 39,
43–45, 57, 62–64, 66, 68, 152,
153, 158, 167–188, 193–198,
200, 202, 203, 205–208,
278–284, 289–293
- ethico-aesthetic paradigm, 12
- event, 29, 37, 42, 45, 47, 49, 56, 82,
116, 117, 135–137, 160, 193,
198, 199, 205, 208, 219, 221,
222, 224, 228–231, 237–246,
248–252, 254–256, 260–262,
265, 277, 282, 284–287
- existentialism, 11, 57, 64, 291
- extinction, 3, 10–12, 50, 56–59, 66,
114, 200, 202, 205, 206, 213,
214, 217, 218, 235, 238, 250,
254–256, 258, 261, 265, 277,
280
- F**
- future, 5, 8–12, 30, 31, 42, 45, 47,
50, 51, 63, 68, 69, 79, 82, 83,
89, 91, 103, 105, 109, 110, 137,
151, 153, 154, 156, 159–162,
170, 181, 182, 188, 193,
202–206, 208, 214, 217, 222,
228, 229, 231, 238, 241, 249,
253, 254, 277, 279–281, 283,
284, 288–293
- G**
- gender, 2, 27, 28, 36, 44, 46, 61,
129, 168, 173, 175, 177, 184
- ghost(s), 11, 78–86, 88–92, 187
- Guattari, F., 2, 3, 12, 13, 23, 24, 28,
29, 43, 46, 101, 103, 104, 107,
108, 115, 117, 124, 127–131,
133, 137, 138, 140, 197,
215–220, 223, 224, 230–233,
238, 239, 241, 242, 245–247,
250, 251, 254, 256, 281, 282,
284, 287
- H**
- haunting/hauntology, 11, 78–81, 85,
86, 88–91
- human, 1–6, 9–11, 18–26, 28, 30–32,
36, 37, 41–43, 45–48, 50, 51,
55–68, 84–86, 88, 90, 100, 101,
103, 105, 106, 108–118, 135,
136, 138, 140, 141, 156, 168,
172, 174, 175, 177, 183, 187,
188, 193, 195–201, 203, 206,
207, 215–217, 230, 239, 247,
250–252, 257–263, 265, 277,
278, 286–289, 291–293
- I**
- identity, 8, 20, 39, 43, 46, 92, 102,
109, 110, 124, 128–131, 134,
140, 150, 173, 177, 185, 197,
217, 222, 228, 239, 262, 281
- image, 27, 35, 82, 100–103, 105,
106, 108, 109, 111, 112, 115,
116, 118, 124, 126, 130, 131,
138, 143, 182, 193–198,
203–205, 221, 222, 224, 225,
227, 237, 240, 241, 243, 248,
262, 284
- Indigenous, 4, 11, 40, 41, 48, 59, 62,
63, 68, 77–85, 88–92, 129, 156,
158, 161, 224, 231

internet, 12, 155

J

justice, 11, 20, 21, 69, 78, 79, 151, 157, 201

K

knowledge, 4, 17–20, 22–28, 31, 32, 42, 50, 65, 79, 80, 91, 116, 137, 151, 155, 156, 158, 159, 161, 173, 179, 181, 198, 209, 228, 287

L

language, 19, 20, 25, 30–32, 37, 40, 41, 46, 47, 50, 58, 80, 102, 103, 106, 108, 114–118, 129, 131, 156, 159, 176, 184, 207, 216, 224–226, 228, 233, 239

learning, 8, 19, 21, 24, 25, 27–31, 38, 49, 51, 67, 68, 77, 78, 82, 83, 90, 106, 107, 114, 137, 142, 143, 153, 155, 159, 161, 168, 170–172, 174–180, 183, 188, 205

life, 3, 4, 7, 10, 13, 21, 24, 30, 31, 37–42, 44, 47, 50, 51, 55, 66, 80, 101, 107, 124, 127, 136, 140, 153, 157, 158, 168, 170, 172, 175, 177, 186, 187, 193, 194, 196–199, 202, 203, 206, 208, 215, 217, 223, 235, 237–240, 245, 247, 250, 252–254, 258, 260–262, 265, 266, 284, 286, 287, 289, 291, 292

literacy, 11, 35–41, 43, 44, 46, 47, 49–51, 291

M

machine, 12, 45, 48, 101, 103–106, 108, 111, 112, 114, 116–118, 133, 134, 138–140, 177, 187, 225, 239, 251, 262, 286

machinic subjectivity, 2, 11, 12

manifesto, 6, 9, 10, 13, 49, 279–281, 283, 292, 293

matter/materiality, 4, 6, 18, 20, 21, 23, 24, 27–29, 36, 38–40, 44, 46, 48, 61, 78, 82–85, 88, 90, 92, 107, 112, 113, 115, 117, 118, 137, 149, 161, 176, 192, 197, 200, 202, 215, 217, 219, 221, 223, 231, 233–235, 237, 238, 241, 242, 249, 253, 254, 257–259, 263–265

media, 6, 8, 61, 100, 102, 105, 124, 125, 127, 129, 132–138, 140, 149, 214, 262

minor/minoritarian, 9, 12, 24, 29, 46, 101–103, 116–118, 128, 129, 131, 144, 216

mortality, 56, 58–64, 67, 69

N

nature, 3, 5, 6, 12, 18, 25, 27–29, 31, 58, 77–80, 82–84, 86–89, 92, 109, 117, 126, 129, 137, 140, 153, 176, 198, 214, 216, 219, 221, 228, 247, 253, 254, 287

Necrocene, 55–59, 61, 63, 66–68

negation/negativity, 13, 83, 92, 191–193, 198–208, 287, 289

network, 12, 48, 49, 101, 103, 105, 106, 108, 114, 132, 150–156, 158–162, 185, 215

newcomer, 123–128, 130, 132, 143

NON, xiii

nonhuman, 4, 6, 9, 10, 18, 21, 22, 24–27, 29, 31, 32, 36–38, 42, 47, 48, 65–67, 105, 111, 112, 114, 116, 138, 141, 151, 168, 198, 202, 216, 217, 220, 228, 237, 245, 248, 250, 259–261, 286, 287, 291, 292

O

occult, 4, 11, 22–32, 105, 106, 263, 291

outside, 30, 42, 43, 46, 47, 50, 107–109, 112, 114, 137, 144, 153–155, 158, 161, 170, 175, 179, 187, 197, 199, 216, 221, 222, 232, 235, 239, 245–248, 250, 252, 253, 257, 266, 280–284, 286, 288, 289, 293

P

pandemic, 4, 7, 124, 139, 150, 152–154, 156, 161, 177, 184, 186, 202, 213, 214, 218, 277, 286

pedagogy, 1, 2, 4, 5, 8–13, 17, 20–23, 25, 26, 29–32, 38, 44, 47, 48, 69, 100–102, 106, 108–110, 113–117, 124, 125, 168, 171–173, 175, 176, 178, 180–182, 184, 188, 194, 209, 221, 279–281, 283, 289–292

politics, 2, 7, 8, 11, 20, 21, 36–42, 46–51, 87, 88, 116, 128, 129, 139, 170, 174, 186, 188, 202, 204, 217, 240, 277

posthuman, 1, 3–6, 9, 19, 20, 23, 216, 217, 253, 279

power, 2, 5, 7, 12, 13, 19, 22, 23, 25, 27–31, 36, 44, 46, 62, 80, 88, 108, 109, 118, 128, 130, 140, 142, 144, 150, 154, 155, 169–173, 175, 185, 186, 193, 194, 199, 200, 202, 203, 224, 230, 235, 238, 245, 246, 259, 278, 282, 283

protagonism, 13, 193–205, 207–209

psychology, 5, 57, 58, 67, 69, 219

R

racism, 21, 24, 38, 46, 152, 153, 156–162, 179, 180

real/reality, 3, 4, 7, 20, 23, 31, 32, 44, 58, 59, 62, 82, 87, 100, 110, 112, 116, 124, 127, 133, 136, 143, 150, 152, 156, 158, 160, 161, 169, 170, 173, 176, 178, 180, 181, 183, 191–193, 195–198, 200, 201, 203–209, 221–226, 229–235, 237–241, 244–246, 248–253, 263, 279, 280, 282, 287

relationality, 18, 37, 48, 59, 198, 199, 207, 221

research, 1, 2, 8, 9, 66, 67, 69, 113, 123, 124, 127, 132, 138, 157, 158, 168, 195–198, 202, 203, 206–208, 221, 237, 252, 276, 279

S

school, 21, 38, 39, 42, 44, 45, 48, 49, 51, 82, 83, 125, 152, 153, 162, 170, 172–174, 176–179, 182–188, 202, 214

science, 18, 20, 21, 25, 27, 29, 32, 42, 62, 77, 78, 81–89, 91, 92,

- 108, 109, 204–206, 240, 250, 257
- science education, 11, 77–89, 91, 92
- settler colonialism, 39, 78–85, 88–90, 92
- social studies, 11, 57, 62–64, 66, 68, 125
- space, 7, 12, 18, 23, 25, 31, 32, 37–39, 46, 49, 69, 79, 80, 84, 86, 92, 100–106, 108, 110, 116, 124–135, 137–139, 141–144, 150–160, 174, 177, 178, 180, 184, 187, 197, 207, 226, 229, 231, 234, 238, 260, 264, 277, 279, 292
- species, 10, 11, 21, 22, 24, 26, 28, 30, 43, 56–58, 65, 200, 213, 215–217, 219, 235, 238, 245, 250–254, 256, 260, 265, 266, 277
- speculation, 4, 12, 215, 216, 231, 234, 237–239, 245, 248, 249, 252–254, 257, 265
- state, 18, 22, 29, 35, 37–39, 41, 43, 46–51, 57–66, 79, 84, 87, 88, 105, 128–130, 132, 137, 169, 173, 175, 178, 180, 183, 186, 193, 213, 214, 221, 228, 229, 231, 237, 238, 246, 248, 260, 265, 276–279, 285, 288
- subject/subjectivity, 1, 2, 9, 23, 24, 27, 28, 35, 39, 42, 45, 46, 48, 61, 65, 80–86, 89, 102, 103, 108–110, 115, 117, 118, 123, 124, 127–138, 140, 142–144, 152, 168, 173, 185, 187, 188, 194–197, 201, 203, 206, 208, 217, 221, 224–228, 238–241, 245, 247–249, 251, 252, 282, 287
- sublime, 100, 102–106, 108, 109, 111, 114, 115, 117, 118, 203, 254, 261
- T**
- teacher/teaching, 3, 23, 25, 29–31, 39, 45, 49, 60–63, 68, 77, 78, 158, 159, 174, 180, 184, 185, 187, 188, 221
- technology, 2, 4–6, 12, 45, 48, 62, 107, 109, 127, 133–135, 137, 140, 154, 155, 160, 162, 171, 182, 183, 187, 214–217, 219–221, 224–226, 228, 240, 241, 245, 248–251, 257–259, 261–264
- trauma, 135–137, 154, 237, 278
- U**
- university, 8, 49, 168, 171–174, 176, 178, 181, 182, 186, 187
- V**
- virtual, 47, 92, 101–105, 107–110, 112–118, 134, 136–139, 150, 157, 160, 187, 192, 204, 207, 218, 219, 221, 223, 230, 231, 234, 235, 237–241, 244–246, 248–250, 255, 256, 282
- W**
- white supremacy, 153, 156, 157, 162, 167, 184, 186
- witch(es), 27–29, 88, 89
- work, 2, 20, 42–44, 46, 48, 77, 80, 81, 84, 86, 89–91, 103, 104, 106, 108, 109, 112, 116, 127, 131, 185, 186, 196, 197, 204, 220, 224, 231, 232, 239, 240,

245, 247, 249, 251, 254, 256,
276, 283, 284

Y

youth, 12, 124–126, 128, 131, 133,
134, 138, 139, 142–144, 152,
153, 170, 177, 181, 184