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Hacking the Anthropocene: Do-It-Together (DIT)

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“More-than-human Collaborations” for Hacking the Anthropocene

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*Calls to “hack” the Anthropocene highlight the necessity of destabilizing, diversifying, and decolonizing understandings of the *anthropos* and the complex ecological relationalities obscured by majoritarian visions of anthropogenic planetary change. In this short intervention, we contend that hacking the Anthropocene must be collaborative in nature. Specifically, it must be a more-than-human collaboration. We present three propositions on more-than-human collaborations as: storying; resistance; and orientation. More-than-human collaborations are fundamental to a politics and praxis of knowledge- and world-making. Borne from ontologies of relationality, they become epistemological as method and verb, reflecting an aspiration for convivial multispecies futures.*

...staying alive—for every species—requires livable collaborations

— Anna Tsing (2015, 28)

Introduction

Recent calls to “hack” the Anthropocene (Hamilton et al. forthcoming; Chandler 2018) flag the need to destabilize, diversify, and decolonize our understandings of both the “anthropos” and the complex ecological relationalities rendered invisible by dominant visions of anthropogenic planetary change. As more-than-human geographers, our empirical research works against the homogenization and passivization of external nonhuman “nature” resulting from anthropocentrism, which Cree writer and academic Billy-Ray Belcourt characterizes as “*the anchor of speciesism, capitalism, and settler colonialism*” (2015, 4). In our work on complex and contested human-animal relations—cohabitations with urban coyotes in Canada (LVP), sheep and rural identities in the United Kingdom’s Lake District (JD), and canids in the Chornobyl Exclusion Zone in Ukraine (JT)—we are each interested in what it could mean to take seriously the nonhumans involved in our research as *collaborators*, rather than merely research objects, subjects, or even participants. Whilst often met with challenges, these collaborations have entailed ethological and technological experimentations, including with GPS collar datasets, trail cameras, critter cams, participant observation, as well as partnerships with animal practitioners like biologists, farmers, and community wildlife and domestic animal management or rescue groups. We detail the challenges and opportunities of these on-the-ground negotiations in our forthcoming work, and herein focus on the theoretical and speculative underpinnings central to our vision of *more-than-human collaborations*, and the potential of this concept for enlivening efforts to “do-it-together” amidst Anthropocene precarities.

This intervention draws on and contributes to work in more-than-human geographies and related fields wherein material, relational, and posthuman turns over the past two decades

have opened up new possibilities for taking seriously nonhumans, especially animals, as subjects whose experiences matter, and actors who contribute to the emergence of worlds. Critical work on actor-network theory (e.g., Callon 1986; Latour 2005; Law and Mol 2008; Law 2009), for instance, has provided a “more-than-human ontology” that destabilises “established fixities and divisions (notably between culture and nature, human and non-human)” and emphasises “relational practice and non-human agency” (Buller 2015, 376). The philosophy of Deleuze and Guattari (1972, 1980) has provided theoretical grounding for much of the work within the “material turn” (Whatmore 2006; Bennett 2010), inspiring a reconceptualization of matter as a source of intra-action (Barad 2007) and contingent becoming (Clark 2011) within a complex assemblage of human and nonhuman actants, relations, and flows. This has opened up possibilities for geographers and multispecies scholars to attend to the ways in which humans, nonhuman animals, and materials are bound together in unforeseen yet politically, socially, and economically significant ways (Barua 2014). These posthumanist interventions have sought to re-distribute agency amongst more-than-human networks and assemblages to account for the liveliness of nonhuman animals and the way they currently (and historically) shape place (Power 2009; Collard 2012), socio-spatial practices (Philo 1998; Hovorka 2008), politics (Dempsey 2010; Srinivasan 2016) and economies (Collard and Dempsey 2013; Barua 2019).

More recently, scholars have called for an interrogation of the lifeworlds, spatialities, and geographies (Hodgetts and Lorimer 2015), mobilities (Hodgetts and Lorimer 2020), and atmospheres (Hodgetts, Lorimer, and Barua 2019) of animals themselves. Animals have also been conceptualised and enrolled as *participants* in the research process itself (Bastian et al. 2016; Locke 2017), which involves recognizing animals “as agents and active participants in socioecological and knowledge production realms” (Hovorka 2017, 7). In this paper, we contribute to this growing body of work by advancing *more-than-human collaborations* as a kind of theory-method. Beyond participation, we are interested in the practical and speculative ways in which human and nonhuman animals (and plants)—which feminist scholar Donna Haraway calls our “sym-poetic collaborators, co-laborers” (2015, 161)—might collaborate in joint knowledge- and world-making efforts, and the value of this lens for unsettling dominant visions within Anthropocene discourses. In line with Hernández et al., we aim to open “up questions about who (or what) can collaborate and how (or why) they might do so” (2020, 8). The purpose of more-than-human collaborations is to generate knowledge with and for nonhuman others, rather than about them.

According to international relations scholar David Chandler (2018), hacking the Anthropocene should be a creative process; one that does not merely seek to limit or resist the effects of the Anthropocene, but instead seeks to respond to them interactively and affirmatively. Following Chandler, more-than-human collaborations offer fruitful avenues for thinking through the specific practices, methods, and actions that might be taken in the pursuit of making kin and creatively producing knowledge that is of and for our multispecies world. We present three brief, overlapping, and tentative propositions on more-than-human collaborations as: storying; resistance; and orientation. Following this, we question and critique more-than-human collaborations, detailing several caveats and matters which remain to be worked through. We argue that more-than-human collaborations are already fundamental to a politics and praxis of knowledge- and world-making, but are often overlooked and undervalued in the anthropocentric, colonial, neoliberal academy. They entail diverse modes of knowing the world and making the world known; acts which are never done in isolation. Here, we explore how more-than-human collaborations might be made visible, but also intentionally instigated in the pursuit of convivial multispecies futures.

Three Propositions on More-than-Human Collaborations

1. Collaboration as Storying

Collaborations are always already fundamental to knowledge- and world-making practices. Often, however, collaborations go untold—particularly those relating to nonhumans. A definition of collaboration from the Oxford English Dictionary (OED) reads: to “work jointly (*with*), esp. on a literary or scientific project.” This definition aligns with our vision of a more-than-human collaborative approach to hacking the Anthropocene, which we understand as both literary *and* scientific. The lens of “storying” does vital work to invite, enable, and expand understandings of more-than-human collaborations. As environmental humanities scholars Thom van Dooren and Deborah Bird Rose note, the experiences of nonhumans “are rendered meaningful by [nonhuman others] in a way that might be recognised and thought about through the familiar lens of ‘narrative’” (2012, 4). “Storying” is thus a crucial ingredient in the path beyond merely recognizing the entanglement of humans and nonhumans (Giraud 2019), and towards writing nonhuman worlds into being—making them sense-able. It is about understanding storying as a form of collaborative knowledge-making *and* a means of bringing to the fore pre-existing instances of collaboration through our stories: collaborative storying *and* storying collaboration. Following Haraway (2016), it matters which stories story stories, and as such more-than-human collaborative storying is as much an approach and an orientation as it is a method. It involves a “passionate immersion” (Tsing 2011) in the lives of nonhuman “narrative subjects” (Plumwood 2002), where accounts of the world are always both collectively produced “speculative fabulation” and “science fact” (Haraway 2016).

Collaborative storying is essential in developing our receptive capacity to appreciate and articulate more-than-human worlds. The practice of *storying with* retains an understanding of literary knowledge creation as world-building, where “the stories we tell are powerful contributors to the becoming of our shared world” (van Dooren and Rose 2016, 89). Collaborative storying entails engaging with more-than-human others in responsive encounters and coming to know about the world through our co-produced stories (Ostrom 1996).¹ A helpful term which emphasises the advantages of such an outlook is *involution*. Most simply, involution is a mathematical term for the process of something folding into itself. In botany and zoology, involution describes a rolling up of oneself, and is thus closely associated with instances of involvement and entanglement. The philosophers Gilles Deleuze and Félix Guattari (1987) conceptualise involution in order to understand the process of becoming not as “descent and filiation” as biological evolution would have it (Stengers 2014, cited in Despret and Meuret 2016), but as an allied process of more-than-human composition; a creative co-emergence “from something less differentiated to something more differentiated” (Deleuze and Guattari 1987, 238). Involution thus points to the rhizomatic networks that give rise to becoming, where things intra-act (Barad 2007), and where bodies and beings are always trans-corporeally connected (Alaimo 2010), as opposed to discrete and bounded characters. Involution holds the process of intra-active becoming to be the ontological foundation of the world, rather than the binary separations of subject/object or human/nonhuman in which independent things and beings act *on* each other. Such thinking asks us to “consider what it means to live as part of the world, rather than distinct from it” (Country et al. 2015, 269). Collaborative multispecies ethnographies (and other methods), therefore, strive to complicate subject/object and self/other binaries that pervade ethnographic research traditions (Banerjea 2015).



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Inspired by these lines of thought, collaborative more-than-human storytelling is not an insular learning and re-telling, nor a lonely anthro-progression wherein we observe, understand, and generate the world upon a species-exclusive trajectory. Rather, our knowledge and our identities emerge and are transformed through our storytelling with and alongside nonhumans. More-than-human collaborative storytellers should be acutely aware of and sensitive to the ways in which worlds become together, collaboratively and creatively, from the outset, and the ways in which the stories we tell are both worldly themselves and world-building. To illustrate involution, philosopher of science Vinciane Despret and ecologist Michel Meuret detail how shepherds "become with" their sheep through "speaking from the ewes' perspective": "The shepherds did not become sheep, but they did begin to talk with them and for them - they became with them, and now they form a flock" (2016, 31). For the shepherds in Despret and Meuret's study, becoming-with is a very literal practice of learning-to-herd with their multispecies companions. As first-generation shepherds, "they had to learn how to lead, how to understand other modes of living, how to teach their sheep what is edible and what is not, and how to form a flock" (30). But this remains a creative co-emergence, for "[t]he sheep had to learn how to compose with dogs and humans, to acquire new feeding habits, a new ethos, and moreover, new ways of living in an enlarged world" (30). Involution, then, allows us to think of collaborative storytelling as a transformational practice of more-than-human fellowship wherein "each critter differentiates, but differentiates differently" (Despret and Meuret 2016, 31). Individual humans, sheep, and dogs learn from and with each other, but in different ways. Storying these relations and collaborations via involution, as Despret and Meuret do, thus helps to hack the Anthropocene through a purposeful, deliberate, and creative decentring of the human perspective that accounts for differences between beings.

Following from and building on this and similar work, storytelling collaboration should eloquently depict the deliberate coming together of human and nonhuman lives to work through the tensions that arise when species meet. In making our own imperfect, non-innocent, and inevitably partial accounts of more-than-human collaborations, we must critically reflect upon how our encounters have involved and attempted to take seriously nonhuman others: "Looking back in this way takes us to seeing again, to respecere, to the act of respect. To hold in regard, to respond, to look back reciprocally, to notice, to pay attention, to have courteous regard for, to esteem" (Haraway 2008, 19). Haraway reminds us that in storytelling we can and must articulate earnestly both the opportunities and the risks to which we and our (potential) collaborators are exposed when species meet in hierarchical and ambiguous encounters (Atchison and Head 2017). We need to maintain a critical stance regarding claims of more-than-human collaboration to render the term meaningful. Equally, we must be critical of how we consider and depict the circumstances under which humans and nonhumans come together to collaborate and recognise which collaborations are, and are not, mutually beneficial and just.

Hacking the Anthropocene involves "storying" in ways that reveal, resist, and reconfigure the world, working against dominant (euro-, andro- and cis-hetero-centric) narratives of "human" mastery and control, replacing these with pluriversal stories that reflect the conditions that have always-already been there (e.g., Bennett 2020; Yusoff 2019). For instance, Afroamerican/African Studies scholar Bénédicte Boisseron writes about how the "two subjectivities, the animal and the black [...] can defiantly come together to form an interspecies alliance against the hegemonic (white, human, patriarchal), dominating voice" (2018, xxv). Storying more-than-human collaborations in this way re-orient certain Anthropocene discourses by shifting focus: decentring the human-as-central-storyteller in favour of livelier co-produced narratives regarding multispecies relations. The Indigenous and non-Indigenous,

human and more-than-human research collective based in Bawaka Country in North East Arnham Land, Australia² makes great headway in de-centring human author-ity in more-than-human research (Country et al. 2015). Experimental storytelling such as this paves the way for further exploration of how humans, nonhuman animals, and others can come together to “attend deeply to the messages we send and receive from, with and as a part of Country” (Country et al. 2015, 269).

Through storytelling collaboration, we also recognise that all knowledge production is a “view from somewhere:” storytelling collaboration/collaborative storytelling requires that the position of the writer be explicit, and this subjectivity be embedded into the writing itself to avoid reinforcing the “god-trick” (Haraway 1988). Through storytelling collaboration/collaborative storytelling, we can work towards building a critical and comprehensive corpus of the ways in which more-than-human collaborations can take place and what they could look like in both practical and theoretical contexts.

2. Collaboration as Resistance

Certain Anthropocene discourses, such as ecomodernism (see Asafu-Adjaye et al. 2020), position “we” humans as unique and powerful agents of planetary change, the driving force of history, exerting a unidirectional agency in shaping the conditions and future of life on Earth, a position which has been heavily critiqued (Crist 2016; Hamilton 2016; Malm and Hornborg 2014; Viveiros de Castro 2019; Yusoff 2019). This anthropocentric and humanist conception homogenizes and passivizes “the environment,” rendering it in dualistic opposition to humanity. Often, these framings engender a technofix discourse, one in which nature can be tamed or worked upon to meet “our” needs. Technofix discourses construct the Earth as something to be controlled, conquered, moulded, and fixed to meet our desires; a Promethean vision of the Earth as objectified matter onto which human ideas and designs may simply be impressed. Equally, the Anthropocene has become an intellectual zeitgeist (Lorimer 2016) across the social sciences, environmental humanities, and cognate disciplines in which the existence, meaning, and theoretical, ethical, and political consequences of the Anthropocene are debated across a range of scales and sites (e.g., Castree 2014a, 2014b; Collard et al. 2015; Dalby 2015; Karera 2019; Maslin and Lewis 2015; Todd 2015; de la Cadena 2018; Yusoff 2019). Here, the Anthropocene has entailed the creation, or resurgence, of an array of ontologies that decentre the human and collapse the binary separation of nature and culture in myriad empirical cases, from the microbiome to the planetary scale. The Anthropo-scene (Lorimer 2016), therefore, is complex and contested; spawning dreams and plans for anthropocentric mastery whilst at the same time deconstructing them.

Turning again to the OED, we find another definition of collaboration: to “cooperate traitorously with (or *with*) an enemy.” We feel this definition also holds resonance in the context of more-than-human collaborations for hacking the Anthropocene in terms of foregrounding a cooperative *resistance* against destructive and reductive Anthropocene discourses and practices; if the Earth and Earthlings are positioned as forces to be conquered, then we side with them against this impulse. Rather than viewing the disorienting and weird events of the Anthropocene as something that can be solved through geoengineering, we see them, instead, as instances of the active agency of nonhumans in resisting human mastery and control; as Earth turning away from certain forms of existence (Povinelli 2016).

As Pearson (2014) notes, however, the idea of nonhuman resistance can be

problematic in a variety of ways, downplaying less spectacular forms of animal agency and activity. Numerous scholars have considered the ways in which nonhuman animals resist certain forms of human control (e.g., Philo and Wilbert 2000; Hribal 2007, 2010; Holloway and Morris 2012; Howell 2017; Johnston 2019), whilst many have been critical of descriptive analyses of resistance that say more about the human desire for nonhuman animal liberation than the animals themselves (Pearson 2014; Gillespie 2016; Wadiwel 2016, 2018; Bear and Holloway 2019). Often, it is difficult to know what an animal is actually supposed to be resisting: capitalism, confinement, control, etcetera? Thus, Bear and Holloway explore “resistance as distributed rather than directed by one actor against another, or against an amorphous ‘system’” (2019, 216). This allows for an account of resistance that emerges between individuals and groups (Bear and Holloway 2019) in situated and specific contexts. Interspecies resistance thus emerges as a form of more-than-human collaboration that is always grounded and site-specific.

More-than-human collaborations, then, involve siding with Earthlings; collaborating with a plethora of nonhumans to resist specific forms of anthropocentric colonial-capitalist violence that continue to proliferate; to collaborate with them in a joint resistance against anthropocentric dreams of mastery and specific forms of oppression. Anthropologist Anna Tsing (2017) describes one form of this violence in her writings on “Anthropocene proliferation”: the spread of simplified or stripped-down ecologies like factory-farms, designed to create assets for future investments. Anthropocene proliferation threatens particular forms of life on Earth by separating species, organisms, and human communities from their wider ecologies or lifeworlds—alienating them—and reducing the ability of ecosystems to return after disturbance. Tsing contrasts Anthropocene proliferation to “Holocene resurgence,” or the ability for nature to recover after disturbances, which, historically involves the work of humans and nonhumans in collaboration (see Searle and Turnbull 2020). As homogenising ecologies of the Anthropocene proliferate, resurgence is “blocked,” which will have cascading ecological effects into the future. Resurgence, however, “is neither neutral nor automatic; it is cultivated, emerging cooperatively between diverse lifeforms” (ibid, 292). As Michi Saagiig Nishnaabeg writer and activist Leanne Betasamosake Simpson writes, working for Indigenous resurgence entails a “return of land, the regeneration of Indigenous political, educational, and knowledge systems, the rehabilitation of the natural world, and the destruction of white supremacy, capitalism, and heteropatriarchy” (2016, 21). Working in solidarity to cultivate such resurgence within place-based “constellations of co-resistance” (Simpson 2016, 33) is vital to more-than-human collaborations. As with storying, we emphasise collaboration here as a verb, a practice.

Collaboration as resistance involves cultivating modes of relating that run counter to dominant western, colonial, hetero-patriarchal, and ableist visions of being- or working-with nonhuman others. Boisseron (2018) delineates just such a subversion in the case of “Creole dog” commensalism. In western (colonial-capitalist) approaches to relations with animals, there is often an expectation of give-and-take, that generosity requires some manner of reciprocation: “Gratitude, debt, and the pressure to return the gesture are the premises of colonization, husbandry, and domestication” (Boisseron 2018, 100). The notion of commensal human-animal relations thwarts this, wherein “sharing a table” (the Latin origins of this ecological term) is not premised upon what each party can bring to the table. Thus, when the “Creole human subject lets the Creole animal benefit from living within human communities without expecting to domesticate the animal and to get personal satisfaction from this domestication” (106), this way of relating “carries an anticolonial, antihegemonic, and antianthropocentric resonance” (107). Foregrounding this kind of resistance asks what



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collaborations for Holocene resurgence might look like if flourishing is thought of as mutual, but not necessarily reciprocal, grounded in "an organic philosophy built on the act of sharing without being owed and taking without being indebted" (Boisseron 2018, 92).

So, what might more-than-human collaborations look like in practice? Cultural and environmental geographer Jamie Lorimer has conducted extensive research on the "probiotic turn" within both environmental management and human health. In his work, he discusses the "pathological absences" of keystone species in both the macro- and microbiome. Lorimer's (2017a, 2017b) work highlights certain absent (or ghost) species that performed vital functions in their previous ecologies (Lorimer 2017a). In these haunted ecologies, absence itself has agency, both material and affective (Searle 2020, 2021), which often leads to the formation of communities who turn towards excluded, extinct, or disappearing nonhumans. Lorimer's work on the probiotic provides an apt illustration of how we might collaborate with previously absent nonhumans, coming together to resist Anthropocene proliferation (Tsing 2017). Rewilding the microbiome, for instance, involves collaborating with "gut buddies," which are sometimes parasitic organisms, in one's own body. Large scale ecological restoration projects such as landscape rewilding, on the other hand, entails collaborating with a diverse array of human and nonhuman actors and processes. In both of these examples, humans and nonhumans come together to resist environmental challenges ranging from extinction to simplified gut microbiota. Dwelling with absence and absent species, then, might entail maintaining space in which these absent Others can creatively re-emerge, in ways that may run counter to human expectations. This points to less direct forms of collaboration, which involve holding space for emergence and ceding the impulse to coordinate and control.

3. Collaboration as Orientation

Having explored the active ways in which more-than-human collaborations as storying and resistance infiltrate and inflect research and practices within multispecies communities, in this section, we outline the ways in which more-than-human collaboration serves as an ontological, epistemological, and ethico-political orientation. Orientations, following feminist scholar Sara Ahmed (2006), are relational positions rather than fixed locations. It is in the relations between things that bodies acquire their shape. Orientations, then, are consequential (Collard 2018): they orient us towards "some ways of living over others" (Ahmed 2006, 44).

Ontological Orientation

More-than-human collaboration enables the practical working through of some of the key tensions between liberal humanist "critical" frames, and posthuman relational approaches. Liberal humanist frames include deontological animal rights and utilitarian animal liberation approaches, which Calarco (2015) characterises as "ethics of identification." These have been critiqued for their lingering anthropocentrism, a focus on exploitation that victimizes and passivizes nonhumans, and an often-invoked assumption that humans and other-than-humans need to remain separate to avoid inevitable relations of domination. Within such a frame, is collaboration even possible, or will it always carry with it the taint of human exploitation? Posthuman relational approaches (Calarco's "ethics of indistinction") are most often attributed to work on symbiosis (especially the work of biologist Lynn Margulis and Donna Haraway), which conceives of the living world as something constituted of and by relationships between



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beings. As Tsing (2015, 29) writes, “It is unselfconscious privilege that allows us to fantasize—counter-factually—that we each survive alone.” Here, beings are always in relation—there are no beings without relations; we are always multiple. Within this holobiontic vision that recognises the entanglement of things “all the way down,” what isn’t collaboration? And what scope is there to comment on power relations, outcomes, and suffering? Uncritical celebrations of relationality—which see everything as symbiogenic naturalcultural entanglements—can render political action difficult, or generate inertia when it comes to deciding what *should* be done (Giraud 2019). A critique of both approaches, moreover, is that they struggle to orient us towards better, more just and care-full multispecies worlds.

Clearly, then, it is not enough to merely shift the ontological frame as if that will automatically and necessarily bring about change, or “ontodeliverance,” as critical geographer Kathryn Yusoff (2019) calls it. Rather, any ontological shift must be accompanied by real, worldly collaborations to delineate and work towards shared goals together, similar to what Theriault et al. (2020) describe as “more-than-research.” More-than-human collaborations, therefore, must be politically actionable. One possible point of entry stems from recent work on “lively capital,” which recognizes the economy as ecological from the outset (Rajan 2012; Barua 2019). Value production has always been a process of collaboration: Literally a co-laboring (Palmer 2020). This offers in-roads for resisting coercive colonial-capitalist relations by re-imagining, and hopefully beginning to assemble, “explicitly sconatural working collectives” towards more just and equitable more-than-human livelihood practices (Palmer 2020, 12). Barua (2021, 16), for instance, points to a number of human-animal collaborations that are vital to, and subtend, certain economic relations amongst various marginalised human communities: “In cities such as Delhi, relations forged with macaques are vital for some communities whose only means of income is selling bananas to devotees wanting to feed the animals.”

More-than-human collaborations provide an orientation through which to navigate (albeit partially and imperfectly) the above tensions between liberal humanist “critical” frames and posthuman relational approaches, recognizing relationality and entanglement, but avoiding the uncritical celebration that too often comes with accounts of hybridity. Considering practices of more-than-human co-labouring invites us to question coercive relations under capitalism, and to imagine what more collaborative livelihood ventures might entail.

Epistemological Orientation

The epistemological orientation of more-than-human collaborations foregrounds knowledge practices that decentre anthropocentric approaches. Acknowledging nonhumans as collaborators who “render-capable” shared understandings through relations with humans (Despret 2004) enables a move towards practices for “articulating-with” nonhuman Others (Haraway 1992). We each attempt this in our own research, experimenting with methodologies that facilitate engagement with animals’ geographies—the lived spatialities and practices of animals from their own perspectives (Hodgetts and Lormer 2015). This has variously involved work with GPS data sets, film-as-method (Turnbull and Searle 2021), critter cams, phenomenological ethologies, and experimentations with direct interactions aimed at promoting coexistence. Though not without their limitations, such tools more explicitly gesture towards the collaborative nature of all knowledge production. Much work remains to be done in delineating methodologies for more-than-human collaborations, but the field remains open for exciting experimentation involving emergent artistic and technological interventions that work to develop “practices of *learning with nonhumans* how to dwell and live together” (Ernstson



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and Sörlin 2019, 15). A key question for such methodologies, following Hernández et al. (2020, 18), is: “[h]ow does one nurture and foster the capacity to co-create, collaborate, and co-think across pluralities of experience and being?”

An illustrative example of this epistemological orientation is detailed by Anishnaabe environmental scientist Nicholas Reo and anthropologist Laura Ogden in the context of Anishinaabe relations to other-than-humans amidst recombinant ecologies. The authors discuss community approaches to living with so-called “invasive” species, such as hybrid cattails, explaining that:

Tradition bearers from the Bay Mills, Sault Ste Marie, and the Walpole Island First Nation all noted that zhashkoohn, the muskrat (*Ondatra zibethicus*), could provide guidance about the purpose of the hybrid cattail [...]. Anishnaabe and their university partners are observing his interactions with the new hybrid cattail in hopes of discovering wetland stewardship options. (2018, 1448-1449)

This practice of asking what arrivant (“invasive”) species have to offer, what responsibilities human community members might have to them, and how we might learn from the wisdom of other species about coexistence, is a beautiful illustration of more-than-human collaborations for hacking the Anthropocene.

Ethico-Political Orientation

Collaboration is also an ethico-political orientation, oriented away from exclusionary, exploitative, and hierarchical relations, and towards just, care-full, and response-able practices which acknowledge intersecting systems of domination and shared vulnerabilities. It does so in a way that troubles anthropocentrism without passivizing or victimizing other-than-humans. Collaboration must be a reflexive orientation aimed at unsettling the (white, eurocentric, cis- and hetero-normative, colonial, ableist) voices that have traditionally spoken for a mute and passive nature, in solidarity with efforts aimed at decolonizing (Whyte 2016; Yusoff 2019), Indigenizing (Todd 2015), queering (Chen 2012; Hayward 2010), and criping (Taylor 2017) the Anthropocene, the animal, and the (post)human.

Much work remains in delineating ethics in (response to) the Anthropocene. For instance, African American studies scholar Axelle Karera (2019) worries that relational affirmative ethics which celebrate “entanglement” and the value of “life” as an undifferentiated category fail to grapple with the histories of imperial violence and Black suffering wherein “entanglement” has spelled Black death. She therefore calls for “speculative experimentations” whereby one can experiment with ethically counterintuitive terms like the ‘non-relational’ in the attempt to renew the central tenets of our critical endeavors” (50). In a similar troubling of relationality’s ethical primacy, poet and African American Literature scholar Joshua Bennett traces a Black feminist ethics of care, drawing from Zora Neale Hurston and Édouard Glissant, writing of the “fraught exchanges that constitute relation, a collision of opaque actors marked not by smooth collaboration or cohesion but the collision itself, the very fact of their meeting” (2020, 133). The import of such critiques for understandings of more-than-human collaborations is an important site for further dialogue.

Though ethics of more-than-human collaboration remain an unfinished (and likely unfinishable) project, we can start by affirming that it must be historically and contextually sensitive, future-oriented, and actionable. In collaborating, we are working towards building knowledges, practices, and livable multispecies worlds together—where the “we” must be



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expansive, responsive, and open to ongoing critique and negotiation.

However, are we overeager in our promotion of more-than-human collaborations for hacking the Anthropocene? Is collaboration inherently desirable? Is it meaningful to consider nonhumans as collaborators in the first place? In the next section, we outline some of the issues we face with proposing more-than-human collaborations as a tool for hacking the Anthropocene. As a tentative outlining of the promise of this concept, we highlight how it might be developed in future empirical and theoretical work.

4. Questioning More-than-Human Collaborations

In *Arts of Living on a Damaged Planet*, anthropologist Heather Swanson and colleagues suggest that “[m]onsters ask us to consider the wonders and terrors of symbiotic entanglements in the Anthropocene” (2017, M2). Equally, sociocultural anthropologist Noah Thierault and fellow members of the Creatures Collective³ urge us to remain cognisant that “collaborative or ‘participatory’ research remains entangled with colonial institutions, temporalities, and incentive structures” (2020, 902). Can collaborations be monstrous and terrible? And what is not included in the remit of what we might consider to be positive more-than-human collaborations? These questions arise from a desire to avoid over simplistic and utopian imaginaries of “peaceful” coexistence which elide the complexity and inevitability of compromise, tension, and dissonance in multispecies worlds. As Haraway notes, “there is no way of living that is not also a way of someone, not just something, else dying differently” (2008, 80).

Similar to the dialogues surrounding relationality, collaboration must retain a critical edge and not flounder in indiscriminate celebration of entanglement. For instance, whilst more-than-human geographers have paid close and careful attention to the ways in which animals are enmeshed in complex relations within laboratory environments (e.g., Greenhough and Roe 2018) and other therapeutic settings (Gorman 2019), it would be highly problematic to conceive of such instrumentalized relationships as collaborations. Our vision of collaboration runs against extractivist paradigms and instrumentalization of the Other—human or nonhuman. In more-than-human collaborations, shared understandings, lifeworlds, and practices that do not centre, privilege, or return to the human are foregrounded, alongside the possibilities and responsibilities these entail.

Experimental collaborations that deploy creative interventions into animal lives are not always collaborations that come into the ethico-political orientation of those we outline here. Wanderer (2015), for instance, outlines the process of using “judas goats” as a conservation tool. Judas animals are carefully selected and tagged as individuals that can lead humans to larger groups of “problem,” “invasive,” or “pest” animals in certain places. In Wanderer’s case study, goats on Guadalupe Island in Mexico are studied closely to produce knowledge about them that is later turned against them in a “biology of betrayal.” One goat leads the conservationists to a group of goats who are then eliminated. The ethics of more-than-human collaborations diverge from such programmes.

In addition, there are boundary cases in which more-than-human collaborations are uneasy. GPS-tracking, for instance, which can involve the infliction of violence and stress upon animals when the tracking devices are fitted, as well as requiring animals to adjust to carrying the GPS-tracking equipment with them permanently, can be understood as harmful or beneficial depending upon whether one focuses on the individual animal or the species as a

whole. Instances such as these, where decisions are made without the consent of the animal pose serious questions when considering the ethics of more-than-human collaborations. Two of us discuss troubling instances such as these in more detail (Turnbull and Van Patter, forthcoming), but here the point is raised to show that what might be considered a meaningful and positive more-than-human collaboration can often be complex, involving human judgments that conflict when entered into practice with the nonhumans involved. Ethics of more-than-human collaborations necessarily emerge through practice and are often difficult to pin down in advance of worldly relations (Gerlach 2020). More-than-human collaborations, therefore, might involve concealment under certain circumstances (cf. Rubis and Theriault 2020), requiring researchers to appropriately respect the knowledge we co-create (Theriault et al. 2020) amongst more-than-human assemblages. This involves managing which bits of collaboratively (or otherwise) produced knowledge we share, to whom, and when, alongside which bits we conceal.

Equally, we must be critical of how we consider and depict shared intentions and the deliberateness involved in more-than-human collaborations. A key challenge is injecting the kind of nuance and complexity required to acknowledge the unevenness and tensions inevitable in any more-than-human collaboration, while salvaging it from either overly simplistic reduction or dismissal. Certain humans have and continue to collaborate with nonhumans to the detriment of other groups within more-than-human communities. Domesticated animals of Europeans can be thought of as collaborators in ecological imperialism and settler colonialism (Anderson 2005), or, as Métis anthropologist Zoe Todd notes, we can recognize that humans and animals “together, are important agents in both a) experiencing colonialism and b) dismantling colonialism” (2014, 231). For instance, in the context of South Indian wildlife conservation, environmental humanities scholar Ursula Münster (2016) notes the ambivalence inherent in human-elephant collaborations. Such partnerships “are the most effective means for creating and managing this anthropogenic landscape” (Münster 2016, 442), but also in their collaboration, marginalized mahouts and elephants are “entangled in their suffering” (Münster 2016, 441). In *Afro-dog*, Bénédicte Boisseron writes of practices of canine weaponization—ranging from Spanish conquistadors, to the 1963 civil rights riots in Birmingham Alabama, to Standing Rock—which entail colonizers/oppressors “launching dogs on the racialized Other” (2018, xxv). But she also writes that “[d]og and slave follow the same Creole fate in a mutual becoming” (83), wherein “commensalism is a poetics of postcolonial resistance” (xxiii)—a collaborative subversion. As these examples illustrate, it is often most helpful to ask: collaboration by whom, for whom, and with what consequences? We need to guard against reductive and univocal narratives of more-than-human collaborations, remaining sensitive to overlapping structures of domination, multispecies operations of power, and complex violences of colonial-capitalism (Hovorka 2019; Kim 2015).

As Anna Tsing writes,

Contaminated diversity is collaborative adaptation to human-disturbed ecosystems. It emerges as the detritus of environmental destruction, imperial conquest, profit making, racism, and authoritarian rule—as well as creative becoming. It is not always pretty. But it is who we are and what we have as available working partners for a liveable earth. (2012, 95)

More-than-human collaborations are not about pinning down reductive rules, but storying towards enactable ethics, politics, and praxes. Collaborations should be aimed at flourishing, emancipation, and justice, but never perfection or innocence, in working together towards “as well as possible” multispecies futures (Puig de la Bellacasa 2017). The vital question to be

worked through, as posed by Bennett, is “how we might collaborate across unfathomable distance and think about difference not as an occasion for domination but an opportunity to sketch a dying world anew” (2020, 139).

Conclusion

In this paper, we advance three proposals for more-than-human collaborations as: storying; resistance; and orientation. They overlap significantly but offer a framework for thinking about the potential of more-than-human collaborations for future research. Following this, we offer a critical reflection on more-than-human collaborations and the potentials they hold for multispecies researchers/practitioners. We envision this project as an interdisciplinary, future- and action-oriented practice for hacking the Anthropocene, subverting the violence of dominant anthropocentric and colonial narratives. More-than-human collaborations expand possibilities and permit understandings of heterogeneous associations which have always worked, and continue to work, against the exploitative relations engendered by colonial-capitalism, in solidarity and in recognition of shared more-than-human precarity. More-than-human collaborations are simultaneously theoretical and methodological, a modest provocation for thought and practice together, a shifting of frame, and a step, we hope, towards advancing more convivial multispecies futures.

This reflection is part of a larger ongoing collaborative project which focuses on how to make actionable the conceptual underpinnings of more-than-human collaborations in terms of concrete methodologies and praxes within interdisciplinary multispecies research programmes. This project involves asking: what might we learn from other species’ strategies, practices, and lifeways? How can we (re)forge alliances in ways that support ecological togetherness? As Haraway writes, “arts for living on a damaged planet demand sympoietic thinking and action” (2017, M31). Towards this effort, we tentatively advance “more-than-human collaborations” as a fruitful orientation—a means of beginning to make gestures in the direction of more livable worlds, by “doing-it-together.”

Notes

1. See the work of scholar and creative writer Richa Nagar (2013, 2014) on collaborative storytelling with oppressed human communities as a form of feminist praxis. Collaboratively writing with her research interlocutors, she questions the boundaries between academia and activism.
2. Consisting of Bawaka Country, Sarah Wright, Sandie Suchet-Pearson, Kate Lloyd, Laklak Burarrwanga, Ritjilili Ganambarr, Merrkiyawuy Ganambarr-Stubbs, Banbapuy Ganambarr, and Djawundil Maymuru.
3. The Creatures Collective define themselves as “a transnational group of Indigenous and non-Indigenous scholars, activists, artists, and communities who are collaborating to challenge the world-breaking violence of extinction by directly and collaboratively fostering alternatives to the dominant biodiversity-conservation paradigm” (Thierault et al., 2020, 893). Equally, through their work, they aim “to challenge dominant narratives associated with the ‘Anthropocene’ and the ‘sixth mass extinction’” (Thierault et al. 2020, 898), whilst engaging, supporting, and collaborating with “communities who are actively working to remake protocols of more-than-human accountability in the face of ongoing colonization, resource extraction, toxic pollution, and capitalist hegemony (Thierault et al. 2020, 900).



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