

ETHOLOGICAL PROPOSITIONS FOR CURRICULUM STUDIES IN HIGHER EDUCATION

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ABSTRACT

The conceit that humans are exceptional and a species apart from nature continues to dominate traditional forms of curriculum in higher education. This article considers how an ethological curriculum might be used to disrupt current imaginaries informing prevailing higher education curricula practices in its rejection of a metaphysics of individualism that is foundational to traditional curriculum studies. An ethological curriculum thinks with more-than-human forms of life in relational ways to consider how we might work differently in higher education. The article offers four propositions as launching points, inflections or forces which can potentiate an ethological curriculum – *cultivating attunement, attentiveness and noticing; becoming-with; rendering each other capable; and engaging response-ably.*

Keywords: ethology, curriculum, transdisciplinarity, schizoanalysis, montage, metamodeling, propositions

INTRODUCTION

In her writing about more-than-critical inquiries, Jasmine Ulmer (2017) notes that it may not be enough for inquiry (and indeed also not enough for curriculum studies), to concentrate solely on human-centered approaches. One possible way of addressing this is by exploring ethical and political questions of what we might learn from thinking with more-than-human forms of life in relational ways. Responding to the question “what, where and how curriculum scholars might ‘burrow’ differently?” (Snaza et al. 2014, 52) in order to consider “how curriculum works, what it does (and does not do) and who is involved (or not)” in the call for papers for this special issue, this article thinks with the notion of “ethology”, in an attempt to develop propositions for engaging with novel experimental modes of reconfiguring curriculum studies.

Gershon and Helfenbein (2023), writing from the fraught educational US situation, refer to a crisis in curriculum studies, describing it as moribund, and acknowledge, following Walter Mignolo, that the curriculum is and will always be colonised to some extent, as will those who work within it. Gershon and Helfenbein (2023, 6) note that curriculum studies has roots in Enlightenment projects which reinscribe dominant norms and values “in ways that continue to

disenfranchise Indigenous peoples, Black, Brown, Asian, and other people of colour, queer peoples, nations in the ‘global South’, in ways that are ableist, ageist, xenophobic, and the like”, and what we do to address this matters for curriculum studies. The guest editors of the special issue concur with this and add that in the Global South, there are pressures and prescriptions emanating from such colonial and neoliberal logics, making the work of posthuman scholars more complex and demanding. The guest editors point out that while posthumanism has been written about with regard to pedagogies, more could be said in terms of posthumanist curriculum inquiry in order to make its presence felt. Decentring both the human and the metaphysics of individualism with its bounded and propertied entities of various kinds, form part of the posthumanist project of going against the grain of colonialism and neoliberalism endemic in academic curricula (Barad 2017). This article joins other scholars writing from posthumanist and decolonial sensibilities (see for example, Dei and Brooks 2023; Du Preez, Le Grange, and Simmonds 2022; Le Grange 2020; Rosiek, Snyder, and Pratt 2019; Shefer & Bozalek 2022; Snaza (2019b), Soudien 2021; Zembylas 2018; Zhao 2021) in making a modest contribution to these concerns raised about curriculum studies in order to propose some alternative moves for “burrowing differently” (Snaza et al. 2014, 52) into curriculum studies.

The article is structured in the following way: Firstly, the notion of ethology is discussed, with particular reference to the contributions that posthuman and feminist new materialist scholars have made towards this notion. The second section of the article examines curriculum and how ethology might be used to reconfigure curriculum in higher education. Some of the ways in which the curriculum may be transformed through ethology are through transdisciplinarity, schizoanalysis, metamodeling and montage and ecology of practices and these are discussed in the second part of the article. The third part of the article deals with propositions as launching points for an ethological curriculum, inflections or forces which can potentiate its coming into being, moving it into action. Four propositions for creating an ethological curriculum are put forward: cultivate attunement, attention and noticing; become-with; render each other capable; engage response-ability.

ETHOLOGY

Ethology, which was originally a science of animals’ capacity to survive in their environments, is variously described by posthuman writers. For Deleuze (1988), following Spinoza, ethology is about the capacities to affect and be affected, as well as slownesses and speeds. In a number of places in his work, Deleuze cites the Estonian ethologist Jakob von Uexküll’s example of a tick being oriented to the world through its affective capacities – the tick’s relationship with the world is defined by its ability to affect and to be affected. The tick’s three primary affects are

the sensitivity to light, smell and temperature. This example “offers a logic by which affective reciprocity constitutes empirical bodies (the tick and the passing mammal) as subjects and objects by virtue of their significance for each other” (Cullen 2021, 13). The emphasis here is not on the tick or the environment, but the affective relations. This primacy of affective forces forms the basis of Deleuzian ethology. Deleuze articulated what he meant by ethology in his lecture on Spinoza in the following way:

“When one speaks of an ethology in connection with animals, or in connection with man, what is it a matter of? Ethology in the most rudimentary sense is a practical science, of what? A practical science of the manners of being. The manner of being is precisely the state of beings, of what exists, from the point of view of a pure ontology.” (Deleuze 1980 lectures on Spinoza).

Ethology can thus be seen as an entanglement of ethics and ontology – ethology which relates to the “manners of being” – the ways of living a life. As part of a growing interest of ethology as an ecological ethics, other posthuman writers have developed an attentiveness and curiosity for multispecies relationalities, these include authors such as Karen Barad (2007), Vinciane Despret (2008; 2013; 2016; 2020), Donna Haraway (2008; 2016), Eben Kirksey (2014), Brian Massumi (2014), Deborah Bird Rose (2017; 2022), David Rousell (2021), Anna Tsing (2015), and Thom van Dooren (2019), amongst others. Félix Guattari’s ecosophy is also important in that, like Barad’s (2007) agential realism, the multispecies relationalities foreground dynamism and indeterminacy and eschew binaries of human/non-human and other identity categories which have become stabilised and taken-for-granted in curriculum studies (Greenhalgh-Spencer 2014). These authors also see the political, ethical, ontological and epistemological as inextricably intertwined.

Erin Manning sees ethology as “an ethics that takes into account the process of worlding ... Ethologies are not about knowledge as end-points but about accumulation and difference” (2007, xxiii, 144). Ethology also puts forward a positive view of difference rather than seeing difference as abject. Ethology rejects the metaphysics of individualism, fully subscribing to a relational ontology, where individuals and entities, subjects and objects do not pre-exist relationships but come into being through relationships. Individuals are not bounded, self-contained entities, with predetermined or essentialised properties. From an ethological perspective, the world is a complex dynamism of indeterminacy, of entanglements of life, which become determinate only through agential cuts (Barad 2007).

This article thinks with these authors referred to above, to consider what such forms of multispecies relationalities might teach us about how to do curriculum differently. In order to do this, the article develops propositions from multispecies studies which focus on accounts of

passionate immersion in connections with fungi, animals and plants (Van Dooren, Kirksey, and Münster 2016). Propositions are speculative fabulations, lures for feeling in the event, thinking-with what matters and what is at stake from a politico-ethico-onto-epistemological position for curriculum studies in the Global South. The importance of thinking with multispecies relations for curriculum studies is inextricably entangled with the urgency of dismantling colonial logics in curriculum studies and developing alternative ways of thinking, being/becoming and doing in both the Global South and the Global North. The article puts forward the following four propositions: *cultivating attunement, attentiveness and noticing; becoming-with; rendering each other capable; and engaging response-ability*. These are offered in this article to think of ways of doing curriculum studies differently from political, ethical, ontological and epistemological positions as alternative ways of responding to centuries of Eurocentric thought which have dominated academia. Such propositions for transdisciplinary studies unsettle such given notions of curriculum. They provide a launching ground for crafting modes of knowing, being and doing as an art of inhabiting a damaged planet (Swanson et al. 2017), particularly in Southern contexts which have been affected by colonial expropriation and exploitation (Ferdinand 2022; Ghosh 2021).

CURRICULUM

Curriculum is conventionally taken to be *what* is taught in higher education rather than *how* it is taught, which is thought to pertain to pedagogy (Pratt 2022). However, since the 1970s authors and educationalists such as William Pinar and Maxine Greene who began to question what the curriculum was, how it happened, who delivered it and the cultural, political and economic situational contexts, and the effects of the past, present and future, paving the way for a more expansive and complex conceptualisation of curriculum (Greene, Ayers, and Miller 1998; Harris 2023; Pinar 2013; Pinar et al. 1996; Pratt 2022). Even these theorists however, did not move away from the idea that curriculum is a stabilised entity and of the assumed individualism of students and lecturers who interact rather than intra-act¹ with the curriculum.

From a relational ontological position, curriculum could never be considered a stable entity that students or lecturers would interact with (Skeet 2022; Wang 2014). An ethological curriculum troubles any such notion of stable outcomes where the expectation is that there will be unilinear activity directed to prescribed set of endpoints which must be reached (Skeet 2022; Wang 2014). An ethological curriculum moves away from stasis by providing a process of enabling constraints, a set of propositions which are appropriate to the particular conditions and which can be tried out for activation and exploration of new productive affective capacities (Manning 2020a; Massumi 2015).

An ethological curriculum is predicated upon a relational ontology, and as such provides a powerful alternative for reconfiguring curriculum studies – going further than even those contributions in the past which have been regarded as progressive. For example, the work of Paulo Freire, which has been regarded as a progressive form of curriculum in the past, focuses solely on human interactions in terms of what matters. Here humans are located as being outside the world rather than part of the world. Freire’s pedagogy is referred to as a humanising one, as he frames his transformational project as one in which the oppressed can become more fully human. Freire marks humans both as separate from and superior to animals and other living beings, in that humans are capable of thinking whereas other creatures are not (Greenhalgh-Spencer 2014). This Freirian view would be contested by ethological perspectives on the curriculum. A relational ontology on which the ethological curriculum is predicated, views relationships as primary and subjects and objects or entities as coming from relationships. We are all part of the world in its becoming. An ethological curriculum opens spaces for the importance of recognising the relationality of the more-than-human as part of nature cultures. As Papadopoulos, Puig de la Bellacasa, and Myers (2021) observe:

“We recognize that humans are not the only agents terraforming Earth The anthropocentrism of Anthropocene rhetoric tends to vault ‘Man’ to the position of ultimate agent and arbiter of our current predicaments. As many critics charge, this logic continues to perpetuate the delusion that humans are alone, separate from nature, and that technological fixes are what will mitigate disaster or provide the ultimate exit strategy from this damaged planet.” (Papadopoulos, Puig de la Bellacasa, and Myers 2021, 6).

This conceit that humans are exceptional and a species apart from nature, continues to dominate traditional forms of curriculum in higher education. Humans and the natural environment are not separate, complete, isolatable, discrete or independent categories or entities with fixed roles assigned to each other, but always already exist inside one another (Tinnell 2012). The purpose of an ethological curriculum would therefore not be to strengthen the relationship between humans and the earth or the environment but a recognition that they are always already dynamically entangled.

TRANSDISCIPLINARITY

In university systems, disciplines are separate and largely ignorant of the curricula of each other (Genosko 2003). Although there is some ostensible encouragement from university management to work across universities, faculties and disciplines, there is little take up for this on the ground. This is because of the funding formula in South African higher education, which does not provide financial rewards or much impetus for disciplines to work in a

transdisciplinary way (Ministry of Higher Education and Training 2021; Styger and Heymans 2015). There are some programmes that incorporate interdisciplinary content, such as introductory courses which run across faculties, sometimes in the Extended Curriculum Programme, but these are not common. Some higher education institutions have also attempted joint programmes, made more possible through the ease of communication through the internet. Examples of such programmes are the Postgraduate Diploma in Teaching and Learning across three higher education institutions in the Western Cape, or a Biodiversity course across faculties of Humanities and Arts, Economic and Management Sciences, Law and Natural Sciences at the University of the Western Cape, as well as the Environmental Humanities South at the University of Cape Town, but such programmes need much support and enthusiasm from senior management and the academics involved as the national funding system is not geared towards recognising the practical implementation of inter-institutional, -faculty or -disciplinary endeavours. And yet, as Guattari and Vilar observed sometime ago, the way knowledge is organised into disciplines higher education is largely outmoded, given the complexity of life on a damaged planet (as quoted in Genosko 2003, 139). As Delphi Carstens, in an earlier special issue of this journal on posthuman pedagogies points out “[t]he convention of single-discipline knowledge and teaching is no longer adequate for making sense of the complex socio-ecological issues facing the denizens of Earth (which include humans and a multitude of ‘others’) in the 21st century” (Carstens 2016, 265). Transdisciplinarity would require an openness on the part of academics to familiarise themselves with concepts of other disciplines, and recognise the potentialities for cross-pollination by reading their registers through each other in a diffractive way (Barad 2007). Such concepts, according to Barad, are always already inside each other.

Curricula thus need to be attuned to the multidimensionality of political, naturalcultural and global conditions, rather than foregrounding scientific disciplines, for example, and adding in some humanities disciplines, thus eliding the power relations which exist in these fields. This requires a recognition that all knowledge is built in relational ways (Manning 2020b). For Guattari, transdisciplinarity is an engaged politico-ethico-onto-epistemology which seeks to create conditions conducive to transformation (Genosko 2009). Guattarian transdisciplinarity does not seek to transcend, it seeks to transform, which is important to work against the grain of Eurocentric colonial logics deeply assimilated into curricula in the Global South and North. It would also require putting in place how such transdisciplinarity could happen by putting in place the institutional arrangements to make it possible for such collaborations to occur and to be workable – what Guattari (1995) referred to as metamodels, which will be discussed in the next section of the article.

SCHIZOANALYSIS, METAMODELS AND MONTAGE

Guattari's schizoanalysis directly speaks to ethological curriculum studies in that it is based on a relational ontology and utilises Guattari's transversal thinking, that is, thinking between the vertical and horizontal in multiple different directions, across and in-between (Genosko 2009). Schizoanalysis was developed as a revolutionary and creative form of psychotherapy as an alternative to the authoritarian ways of practising psychoanalysis. Erin Manning describes schizoanalysis in the following way:

“Schizoanalysis, Guattari underscores, is a practice that detours the collective into the institutional as much as it detours the collective into the political, the political into the social, the social into the environmental, the environmental into the aesthetic.” (Manning 2020a, 149).

Schizoanalysis is important for ethology in that it goes beyond a humanist perspective and foregrounds the forces of the surrounds, moving beyond identity to the relational field of subjectivity (Manning 2020a). Schizoanalysis was considered by Guattari to be a form of metamodeling (Watson 2008). Metamodeling eschews the use of standard, orthodox models and universalised laws, advocating instead an ongoing creation of novel models which can accommodate complexity in curriculum studies (Gerlach and Jellis 2015). It also does not choose one model over another but uses models in the middle of other models, bringing together different components. This process is what Barad (2017) refers to as montage which might be used to diffract models through each other in an open and processual way (Tinell 2012). Montage is a method derived from the work of Walter Benjamin and used by Karen Barad as a form of diffractive reading and writing where small fragments of different types of texts form new constellations for readers and writers (see Bozalek and Hölscher 2021; 2022; and Bozalek et al. 2021, for examples of montage writing). In a similar way, metamodeling creates the new through forcing disparate things together, unsettling and disrupting rather than representing, and in so doing, generating new ways of thinking and doing curriculum differently (Carstens 2016; Gerlach and Jellis 2015). Montage or diffractive writing, as Barad (2017) notes, is like the fleeting flashes of insight which come from examining crystal fragments through different light rays. These shifting patterns create a sense of dis/continuity², enabling constellations of meaning which solidify contingently and momentarily. Various curricula read through each other could bring such unique constellations to flash up as unexpected and new inventions, opening up new possibilities of affirmative experimentation to remake curriculum and academic practices (Gerlach and Jellis 2015; Tamboukou 2019; Tinnell 2012). Such intra-active processes of making curricula resonate with decolonial and anti-colonial scholars in their

collaborative and communal multicentric embodied forms of knowledge production (Dei and Brooks 2023).

ETHOLOGY AS ECOLOGY OF PRACTICES

If we see curriculum as an ecology of practices, it is important to remember that what we are interested in is not what the practices of curriculum *are* but what they might *become*, not how they are pre-formed but how they might be performed (Goodman 2018). It involves thinking from the middle and from the particularities of the situation. An ecology of practices is also entangled with ethology, as both are dependent on the environment of which they are a part, as Stengers and Knox (2003, 193) put it: “we do not know how wolves and lambs may become able, as wolves and lambs, to behave in different circumstances” and thus “the very way we define, or address, a practice is part of the surroundings which produces its ethos”. Here we learn four things about curriculum – one is that a happening is not dependent on humans only, but on an event in which humans might be participants but which can not be controlled and produced at will; secondly, nothing exists independently of its situation, and thirdly that curriculum matters in a particular rather than a generic way. Seen as an ecology of practices, curriculum is a set of forces which educational practitioners use to think, feel and act with for experimental changes in order to remake academic practices (Tinnell 2012). This would be necessary to produce the dynamics for learning to take place (Stengers and Knox 2003).

In the next section of the article, I discuss four propositions which have the potential to create forces that move the ecological curriculum into the dynamism of action.

PROPOSITIONS

Propositions are speculative fabulations, “lures towards feelings” (Whitehead 1978, 259) constructing potential for thinking-with what matters and what is at stake from a politico-ethico-onto-epistemological position for curriculum studies in the Global South. Feeling here should not be mistaken for personal emotion, it is rather an affective force which makes the milieu felt (Manning 2008; 2012). Propositions have been put forward by philosophers such as Erin Manning and Brian Massumi (see for example the propositions developed in Manning and Massumi 2014), following the work of Alfred North Whitehead (1978). Unlike curricula following specific goal-oriented trajectories and static endpoints, propositions are more akin to “thought in motion” (Manning 2009, 6; Manning 2012) and “theories in the making” (Manning 2009, 226). They are thus launching points for an ethological curriculum, inflections or forces which can potentiate its coming into being, moving it into action. Propositions are not judgements, but they create enabling constraints for opening up what an ethological curriculum

can do differently as a relational process – either inhibiting or amplifying it (Manning 2009; 2012). Propositions such as the ones outlined below create forces that move the ecological curriculum into the dynamism of action.

Cultivate attunement, attentiveness and noticing

In an ethological curriculum we need to cultivate attentiveness to the myriad of ways of affecting and being affected. Attentiveness is an attunement to the intensities of the present moment but it also involves attuning to the unknown in the understanding that it is impossible to know beforehand what one is capable of or what forces will constitute the world we are part of (Despret and Meuret 2016). As Smolander and Pyyry (2022, np) note “[k]nowing is an acting-together of human and other-than-human forces that cannot all be traced”. This means that curricula which assume an individual learner who acquires external knowledge in a context-free environment are profoundly problematic. Cultivating the arts of attentiveness and attunement are part and parcel of a relational learning process of imaginative experimentation, as Manning (2020b, 13) puts it, “an attunement to what seeds a thinking in the act”.

Attentiveness, attunement and noticing involve an activation of the “sensibility of all our embodied faculties” (Lenz Taguchi 2012, 272). It is not only sight or looking that makes attentiveness possible. As Weaver notes in his article on Serres’ science:

“The re-education of humans, though, will not come without discomfort We live in a world that still is dominated by a positivism that favors the eyes and at best dismisses the other bodily senses and at worse mocks the other senses as learning conduits. What is needed is a recognition that ‘everyone has a major sense. The five senses are not distributed homogenously: in some people hearing is privileged, for others, taste, touch, smell or vision. We must train the ones that lag behind’ (Serres 2015/2014, 75). In the world of invention and a third way with its third curriculum of using both hemispheres and all of our bodies it is not children who are the ones that lag behind. It is those who are set in their vision It is many of the scientists and intellectuals who lag behind. Are they open to a new way of learning a third curriculum?” (Weaver 2022, 358).

For both human and non-human animals, listening is an important way of cultivating the arts of noticing paying attention to what is happening in the world (Tsing 2010). Michel Serres saw listening attentively as a means to engage with and get to know parts of the world that might have been lost touch with (Weaver and Snaza 2017). Such attentive listening provides ways of attending to what matters for transdisciplinary curriculum studies, including scholarly attention to naturalcultural issues pertinent to the time. This would assist higher education to think beyond the hard and soft sciences, the natural sciences and humanities which continue to privilege and see the human as separate from the natural world (Weaver and Snaza 2017).

Despret foregrounds attentiveness in an alternative politics or an ethology in Deleuzian

sense of manners of being – “a politics that grows not from opposition to or critique of our current systems but one that grows from attention to another way of being, one that involves other kinds of living beings.” (Despret and Meuret 2016, 28). If such an approach were taken to curriculum, different ways of engaging learning would be necessary, as much feedback to students about whether they have grasped the curriculum contents or not comes in the form of critique against predetermined standards. Attentiveness to the needs of others, to the conditions in which expression is taking place and other ways of being is a prerequisite for an ethological curriculum.

No one ahead of time would be able to anticipate what might happen or what a body is capable of – it depends on the circumstances.

Become-with

Curriculum is the encounter of becoming-with or making-with the problem that we seek to inquire about, and where something new occurs out of the relations (Goodman 2018). Donna Haraway’s concept of sympoiesis is useful here – (making with – *poiesis* – making and *sym* – with) (Haraway 2016, 5). In becoming-with through collective exploration ethology therefore eschews the scripted curriculum where ends are already known. What will happen in becoming-with the curriculum through experimental processes can never be known or anticipated prior to the event (Greenhalgh-Spencer 2014). For Despret and Meuret (2016) in their article on how shepherds become with sheep in France, both shepherds and sheep learn to become-with each other, in affecting and being affected by each other and in so doing cultivate ways of inhabiting the world. As Despret and Meuret (2016, 32) put it, becoming-with each other happens at the same time as being differentiated from each other:

“There is a flock, a collective memory, because a human became shepherd in relation to these ewes and because the ewes had become a character in relation with that shepherd. They differentiate differently in the process of creating trust. They became others with other others, and they differentiated otherwise.”

Becoming-with each other is ongoing and iterative, a process of “staying with the trouble” (Haraway 2016), which is made possible through the development of trust (Sevenhuijsen 1998; Tronto 2013). An ecological curriculum would be about becoming-with and doing with rather than learning about following any pre-established rules. The curriculum from this perspective, does not predate or pre-exist its relationship with the other as student or academic in a similar vein to becoming a shepherd in relation to sheep or a rider through an encounter with a horse (Despret 2015).

Render each other capable

Deleuze's reference to Uexküll's tick is an example of how bodies are rendered capable through their significance for each other. In their encounter, modes of behaviour, or as Deleuze refers to them "manners of being" take on a specific meaning for each other, capacitating each other in particular ways (Cullen 2021, 24). Each partner is changed through their encounter (Despret 2015). An ethological curriculum would ask the question then "What might we be capable of together through experimentation?" Such a process is made possible through a curiosity towards what matters to the other, and an openness to a multiplicity of ways of knowing the world, rather than assuming authoritative knowledge from a disciplinary background (Despret 2016; Haraway 2015). Haraway (2015) describes Despret's research work with animals in the following way:

"This was not just a question of worldviews and related theories shaping research design and interpretations, or of any other purely discursive effect. What scientists actually do in the field affects the ways 'animals see their scientists seeing them' and therefore how the animals respond. In a strong sense, observers and birds rendered each other capable in ways not written into preexisting scripts, but invented or provoked, more than simply shown, in practical research. Birds and scientists were in dynamic, moving relations of attunement." (Haraway 2015, 5).

Through rendering each other capable, the world of Despret, the birds and the scientists she was working with were all enlarged. It is an affirmative process of building knowledge rather than one which can be diminishing if stuck in the instrumentalism of learning outcomes to be achieved. Rendering each other capable is helped by posing and responding to good questions which are of interest and relevance to all parties, where what is learnt is not what is anticipated, thus opening up other ways of knowing and other knowledges, taking the parties somewhere new (Haraway 2015; Snaza 2019a).

Engage response-ability

Response-ability is an enabling of responsiveness in particular contexts (Barad 2007; Schrader 2010; Tronto 2013) and is also not restricted to human-human encounters (Juelskjær, Plauborg, and Adrian 2021). Astrid Schrader (2010), for example, refers to response-ability in laboratory practices, where enabling the phenomenon under study to respond is crucially important for the findings of how the phenomenon behaves. Donna Haraway (2008) has also noted that people and animals become subjects and objects to each other in laboratory intra-actions. Humans and more-than-humans are co-constituted through their responses to each other. But how we respond to others is dependent on situatedness or context, where the abilities to respond to the

other are shifting (Van Dooren 2019). For Barad (2007) matter is condensations of response-ability. From this perspective curricula would then also be condensations of response-ability. Stacy Alaimo's (2016) concept of trans-corporeality means that bodies, substances and places are transversally connected, that all species are porous and in constant interchange of responding to the substances and forces of the world, in which it is immersed and with which it is entangled – they are never detached and never discrete. Trans-corporeality is an important concept for engaging response-ability curriculum studies in that it is a reminder that one's own material self is part of the agential world that an ethological curriculum would seek to understand and act on.

Learning is an open-ended and ongoing process which happens through events. A justice-to-come is without end and requires iterative response-ability to what matters and what is the issue at hand. In terms of the effects of colonialism, an ethological curriculum would be responsive to the entangled strands of past, present and future and how these are playing out in the thick present of higher education (Barad 2017). This may mean tracing and taking account of entanglements which have been used to make sense of current phenomena in curricula (Barad and Gandorfer 2021). Fred Moten and Stefano Harney's idea of "study", which is a never-ending collective form of learning outside of classroom space and time is a way of engaging response-ably with curriculum. Study refuses the conventional curriculum, existing outside of curriculum content which is constrained to what is already known and its disciplining methodologies. Harney and Moten's (2013) study is a responsive move to creative learning that creates conditions where it is possible to think beyond the known, where something new is created from this response-ability.

CONCLUSION

The propositions outlined above unsettle given notions of curriculum, providing orientations for crafting alternative modes of knowing, being and doing as an art of inhabiting a damaged planet (Swanson et al. 2017). This is particularly pertinent for Southern contexts as an antidote to colonial expropriative, extractive and exploitative logics and practices. An ethological curriculum would hold the possibilities open to ask questions in such contexts about what has affected ways of living in these contexts and how curricula in the past and present may affect what is currently happening in these contexts. The ethological curriculum in its focus on experimentation, becoming-with and doing collectively, eschews the practice of representing or speaking for subjects, so prevalent in imperialist logics of academia.

The salience of an ethological curriculum is in its ability to disrupt current imaginaries informing prevailing higher education curricula practices and in its rejection of a metaphysics

of individualism that is foundational to traditional curriculum studies. It is not that individual humans or animals do not matter, but that mattering is always already relational, happening in entanglements and connections, which is larger than any individual or groups of individuals. The emphasis in ethology is on curriculum as movement, experimentation, change and creativity, relation and process, creating unforeseen encounter. The ethological curriculum thus troubles the notion of control implicit in the well-worn paths of “fitness for purpose” which audits of higher education institutions usually use to make judgements of curriculum as a preformed entity. Ethology is based on the view that experimentation is necessary for the curriculum, in that it is not possible to know ahead of time what a body is capable of (Despret and Meuret 2016). An ecological curriculum would foreground an immanent exploration of the potentials of relation which may modulate the forces at play in the affordances offered by particular material circumstances, where bounded individualism is replaced by a complex and indeterminate ongoing dynamism of becoming-with in the process of a creative event. An agential cut would create a contingent curriculum from the virtuality of potentials which are immanent with specific occasions or events (Barad 2007; Goodman 2018; Haraway 2016). The creative capacities of an ethological curriculum are in forming-with the potentials of its emergent ecology to produce novel insights for ways of living and dying as well as possible on our damaged planet.

NOTES

1. Karen Barad’s (2007) work is useful for distinguishing between interaction and intra-action. Interaction is the coming together of two or more pre-existing entities, whereas intra-action it is the relationship which is pre-existing and entities or subjects and objects only come into being through relationships.
2. The hyphen in dis/continuity is a Baradian one, signifying a cutting/together apart or an indication of indeterminacy, where something is not discontinuous or continuous, not discontinuous and continuous but that there is no fact of the matter whether it is continuous or not.

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