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A Posthumanist Social Epistemology: On the Possibility of Nonhuman Epistemic Injustice

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Abstract. This paper seeks to intervene in environmental ethics and social epistemology. Within a predominant strand of environmental ethics, one witnesses accounts based on nonhumans' ability to suffer, and consequently, the passivity of nonhumans. On the other hand, social epistemology is often not social enough insofar as it does not include nonhumans. Seminal accounts of epistemic injustice often conceal or exclude the possibility that nonhumans can be subjects of knowledge and victims of epistemic injustice because of an anthropocentric bias that maintains propositional language is a necessary condition for knowledge. By presenting a non-anthropocentric, corporeal epistemology, this paper reveals a more affirmative account of nonhumans as epistemic agents with tacit, embodied knowledge. To prevent epistemic depreciation turning into ethical indifference or wrongdoing, this paper focuses on whether it is possible to commit epistemic injustices against nonhumans. In particular, this paper argues that humans can commit fourth-order epistemic exclusion, testimonial injustice, and testimonial smothering against nonhumans.

Key Words: posthumanisms, social epistemology, epistemic injustice, nonhuman knowers

Posthumanistična socialna epistemologija: o možnosti nečloveške epistemske nepravičnosti

Povzetek. Namen tega prispevka je poseči v okoljsko etiko in socialno epistemologijo. V prevladujočem delu okoljske etike smo priča opisom, ki temeljijo na zmožnosti trpljenja nečloveških bitij in posledično na njihovi pasivnosti. Po drugi strani pa socialna epistemologija pogosto ni dovolj socialna, saj ne vključuje neljudi. Temeljna dela o epistemski nepravičnosti pogosto prikrivajo ali izključujejo možnost, da so lahko neljudje subjekti vednosti in žrtve epistemske nepravičnosti

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zaradi antropocentrične pristranosti, ki trdi, da je propozicionalni jezik nujni pogoj za vednost. Z obravnavo neantropocentrične, telesne epistemologije prispevek prinaša afirmativnejši opis nečloveških bitij kot epistemskih vršilcev s tiho, utelešeno vednostjo. Ker želimo preprečiti, da bi se epistemsko razvrednotenje sprevrglo v etično brezbrižnost ali napačno ravnanje, se prispevek osredotoča na vprašanje, ali je mogoče zagrešiti epistemsko krivico nečloveškim bitjem. Trdimo zlasti, da lahko ljudje zagrešijo epistemsko izključitev četrtega reda, pričevalsko nepravičnost in pričevalsko zatiranje nečloveških oseb.

Ključne besede: posthumanizmi, socialna epistemologija, epistemska nepravičnost, nečloveški znalci

From Peter Singer (2011) to Ralph Acampora (2006) and Cynthia Willett (2014), one witnesses environmental ethics that attend to nonhuman suffering, and consequently, nonhuman passivity. While important in certain contexts, such accounts can inadvertently reinforce the same problem they are attempting to address. As ecofeminists such as Karen Warren (1990) and Val Plumwood (1993, 2002) contend, the indifference to, subjugation of, and violence against nonhumans were historically justified according to a human-nonhuman dualism that presents humans as active, communicative, and intelligent, while nonhumans are passive, non-communicative, and unintelligent. With so much at stake in terms of climate change and the sixth mass extinction, this paper pursues an alternative, more affirmative, environmental ethic that attempts to 'make us feel the possibility of a thought that goes beyond human thought, to make us sensitive to other modes of thought that dwell at the edge of thought' (Despret and Meuret 2016, 27). Developing upon Karen Barad's posthuman performativity, this paper submits that nonhumans are epistemic agents with tacit, embodied knowledge. To pre-empt epistemic depreciation resulting in ethical indifference and/or harm to nonhumans, this paper seeks a more 'capacious' epistemology – a more social, social epistemology (Alaimo 2008, 251). Feminist social epistemologists first enlarged epistemology by replacing an abstract, self-sufficient epistemic agent with situated, interdependent epistemic agents (Grasswick 2004). However, social epistemology remains not social enough insofar as it not only does not include, but often excludes, nonhumans from consideration. This paper argues for the inclusion of nonhumans in the epistemic community and considers whether it is possible for humans to commit epistemic injustices against nonhumans. In particular, this paper argues

that humans can commit fourth-order epistemic exclusion, testimonial injustice, and testimonial smothering against nonhumans.

Fourth-Order Epistemic Exclusions – The Self-Imposed Lacuna in (Social) Epistemology

To open a space for a more capacious epistemology that allows one to take seriously the possibility of nonhuman testimonial injustice and smothering, it is worthwhile to begin by arguing for the possibility that humans can commit fourth-order epistemic exclusions against nonhumans. Fourth-order epistemic exclusion is an extension of Kristie Dotson's third-order epistemic exclusion, which she articulates through a retelling of Plato's Allegory of the Cave. In her retelling, Dotson imagines mobile people feeding the fettered people in the cave from the right. The leftmost fettered person would thereby be the only person that has not experienced a human sound to their left. The leftmost fettered person, Dotson explains, 'has the ability to detect something about the larger social world none of the other members can detect in quite the same way' (Dotson 2014, 130). Yet, these experiences are excluded from being seriously acknowledged by the larger epistemological system, which orients one's instituted social imaginary and grounds epistemic resources. Since the epistemological system was developed based on the shared experiences of the fettered people, and the leftmost person's experiences are not a common, shared experience, their experiences are dismissed as either 'nonsensical [...], dangerous, [or] impossible' (pp. 130–131).

This epistemic exclusion is a recalcitrant problem. The very epistemic resources that would detect and change this third-order exclusion are part of the resilient epistemological system that itself makes the exclusion. In Dotson's words, the system reveals 'what the system is prone to reveal, thereby reinforcing the idea that one's system is adequate to the task, when one is actually stuck in a vicious loop' (Dotson 2014, 132). Moreover, the epistemic resources would only be able to capture these aspects if there were fundamental changes to the epistemological system. As they are, the epistemic resources are unable to 'shed light on why they are incapable of accounting for the farthest left-fettered person's insight' (p. 131). Rather than a hypothetical example, Dotson maintains that third-order epistemic exclusions are much more common. Indeed, they are 'the stuff "culture clashes" are made of' (p. 131).

Instead of an *intra*species clash between human cultures, fourth-order epistemic exclusions refer to *inter*species clashes that result from the dif-

ferences between humans and nonhumans. Instead of homogenizing the human group by excluding the testimony of the leftmost person, fourth-order epistemic exclusions homogenize the entire group of life forms. Fourth-order epistemic exclusions effectively reinforce anthropocentricism. Like Dotson's account, nonhumans are revealed only according to what the human system is prone to reveal. Embodiment is reduced to human embodiment, knowledge practices are reduced to human knowledge practices, and worlds are reduced to the human world. Since nonhumans are not humans, the possibility that they are intelligent with their own onto-epistemic practices is excluded as nonsensible, dangerous, or impossible.

The additional order of exclusion is not intended to assert that one order of exclusion is worse than the other. Rather the point is simply to avoid attempting to locate nonhumans to the left or right of the leftmost human. Either location would be problematic. On the one hand, placing nonhumans to the left of the leftmost fettered human creates a commonality between nonhumans and the leftmost humans, which has historically justified sexism and racism (Warren 1990; Jackson 2020). On the other hand, placing nonhumans on the same line assumes a continuity between humans and nonhumans, but one that is defined by humans. Making a similar point, Yogi Hale Hendlin (2019, 353) writes:

> While certainly other creatures behave similarly to humans in many ways, their processes and orientations are fundamentally different. Not worse, just different. The pernicious inertia of homogenizing consciousness and intelligence onto a single spectrum, usually hierarchized, prevents acknowledging a pluralistic understanding of these faculties that creates a multidimensional approach.

The notion of nonhuman fourth-order exclusions seeks to recognize these non-hierarchical, non-absolute differences and hold accountable the homogenization of consciousness and intelligence as well as the exclusion of nonhuman consciousness and intelligence (Gunnarsson 2013).

More specifically, fourth-order epistemic exclusions involve a human epistemological system that inherently fails to recognize and dismisses the ability of nonhumans to detect something about the larger world, which is to say, they understand something that humans do not and have different modes of intelligence. For instance, reflecting on his dog, Aldo Leopold writes, 'I delight in seeing him deduce a conclusion in the form of a point, from data that are obvious to him, but speculative to my un-

aided eye' (Leopold 1970, 67). Fourth-order epistemic exclusions can also involve denying the epistemic and ontological differences between humans and nonhumans, which result from differences in biology, anatomy, physiology, evolutionary history, environment, and sociality (Ingold 2013; Morizot 2021).

In a certain sense, nonhumans do not inhabit the exact same cave as humans, nor do they engage in the same practices to understand the cave. Jacob von Uexküll (2010) defends a similar claim, maintaining that the different bodies, functional cycles, and subjective aims of nonhumans engender different epistemic and worlding practices. Each nonhuman transforms a world into a world of species-specific tones and meanings based on its body and biology (Schroer 2019). To use Uexküll's famous example (Uexküll 2010), since the subjective aim of a tick is to survive by feeding on the blood of mammals, the tick's world consists of butyric acid, body warmth, and follicle size. The butyric acid awakens the sleeping tick on the tree and notifies it to drop from the leaf. The follicle size provides a path for the tick to find the mammal's skin. Furthermore, its causal theory is different because of its different corporeal sense of spatiality and temporality as well as its different world of particular meaningful entities. The tick engages in different practices of differentiating and knowing how the meaningful objects in its world interact. That is, the tick has a different epistemology and a different understanding of the world. Fourth-order epistemic exclusion, though, denies this difference in understanding as well as epistemology and ontology.

Rather than a speculative concern, fourth-order epistemic exclusions are much more common due to the prevalence of anthropocentric epistemological systems. One form of this anthropocentric bias is the assertion that formal propositional/conceptual language is a necessary condition for knowledge. In addition to Descartes' system of clear and distinct ideas, this bias has taken the form of Plato's or Socrates' demand for propositional/conceptual justification. Epistemic anthropocentricism, however, is not limited to modern and ancient epistemological systems. It can also be found in seminal accounts within social epistemology.

For instance, Kristie Dotson states that epistemic violence involves the refusal of an 'audience to communicatively reciprocate *a linguistic exchange,* owing to pernicious ignorance. Pernicious ignorance should be understood to refer to any reliable ignorance that, in a given context, harms another *person* (or *set of persons*)' (Dotson 2011, 238; italics added). This definition rules out the possibility that nonhumans can be subject to

epistemic violence by making the participation in (propositional) linguistic exchanges and personhood a necessary condition. Furthermore, Gaile Pohlhaus claims that '[k]nowing requires resources of the mind, such as language' (Pohlhaus 2012, 718). Since many animals lack formal language and other conceptual criteria, this would suggest that they cannot be knowers. Additionally, Miranda Fricker (2007, 1; italics added) initially describes testimonial injustice as resulting in a 'deflated level of credibility to a speaker's *word*.' Testimonial injustice consequently does not seem applicable to nonhumans because they are not speakers of words. The above examples thus effectively exclude or dismiss the intelligence and epistemic agency of nonhumans as nonsensical and impossible.

Even figures making important steps forward in animal ethics can be seen implicitly reinforcing anthropocentric assumptions. Paul-Mikhail Podosky (2018) submits an other-oriented form of nonhuman hermeneutic injustice, which occurs when a human listener's conceptual framework and structural identity prejudices objectify nonhumans and ultimately prevent humans from understanding nonhuman experiences and oppression. Hermeneutic justice, on the other hand, involves the recognition of nonhuman experiences and moral dignity, which 'can *only* be appropriately realized through language' (Podosky 2018, 227; italics added). By liberating words so that they can fully reach their 'expressive capacity,' Podosky contends that one can overcome hermeneutic oppression and help liberate animals (p. 226).

Although it is certainly true that *particular* conceptual schemas can be oppressive, Podosky's claim that language is the *only* way to know, and therefore the only solution, is itself oppressive and hegemonic. Like a totalizing, foundational discourse, Podosky's solution could serve as a 'mechanism of *de facto* repression of at least some of the experiential dimensions of the situation' (Cheney 1998, 120). That is, Podosky underappreciates other modes of human knowing in the form of affective, bodily, and emotional engagements with the world. Such an oversight can result in concealing the tacit, embodied knowledge of nonhumans. Making an analogous point in the contexts of humans, Alexis Shotwell (2017, 79) writes, 'focusing on propositional knowledge as though it is the only form of knowing worth considering is itself a form of epistemic injustice' because it neglects embodied epistemic resources. Additionally, Mihaly Héder and Daniel Paksi contend that '[s]cience education forces us to ignore our tacit and personal knowledge and commitments in an effort to be more objective, more exact. […] This leads to questioning the exis-

tential knowledge of animals and its continuity with our own tacit and explicit knowledge' (Héder and Paksi 2018, 63).

Moreover, Podosky implicitly reinforces a human-nonhuman dualism in writing that '[n]onhuman animals do not have social power; they cannot impose functions, they cannot change norms, and they cannot converse to sway the minds of those who wish to eat them' (Podosky 2018, 225). But why can nonhumans not converse, albeit not in a conventional human way, with humans? Similarly, animal rights organizations have presented their mission as 'giving a voice to the voiceless.' Such a framing, however, assumes an anthropocentric view that only 'accepts a human-centered definition of voice' (Adams 2010, 311). Such a definition conceals the expressive, agential abilities of nonhumans. These shortcomings demonstrate how applying concepts from social epistemology to nonhumans alone is insufficient. The anthropocentric and dualistic assumptions within social epistemology must also be simultaneously jettisoned.

The Possibility of Nonhuman Testimonial Injustice

With reason to question the limitations of predominant human epistemological systems, it is now possible to argue that humans can commit testimonial injustice against nonhumans. Such an argument will require expanding/transforming the epistemological system to recognize nonhuman intelligence and epistemic practices as well as tacit, corporeal knowledge. In her seminal book, *Epistemic Injustice,* Miranda Fricker contends that testimonial injustice stems from a listener's negative identity prejudices about the speaker. For instance, a listener's sexist and/or racist prejudices distort their perception of the speaker, ultimately deflating the speaker's credibility and epistemic competence. Due to this deflation, the listener fails to believe or seriously consider the speaker's testimony. While the primary harm of epistemic injustice is that the 'subject is wronged in her capacity as a knower,' the specific harm associated with testimonial injustice is that the 'subject is wronged in her capacity as a giver of knowledge' (Fricker 2007, 44). Accordingly, the case for nonhuman testimonial injustice depends on demonstrating the following: (1) nonhuman are knowers and subjects of knowledge; (2) they can convey this knowledge to humans; and (3) humans hold negative identity prejudices about nonhumans.

Quantum physicist Karen Barad's posthuman performativity is particularly helpful in making the case for nonhumans as subjects of knowledge because it disrupts the division between ontology and epistemol-

ogy, matter and meaning, body and mind. In their words, 'being and knowing, materiality and intelligibility, substance and form, entail one another' (Barad 2007, 375). Barad presents an ontology of knowing that underscores how matter matters in terms of how bodies performatively affect meaning and knowledge practices. Inspired by Neil Bohr's interpretation of quantum mechanics, this ontology of knowing is based on Barad's account of intra-actions. Unlike interactions, which presuppose pre-existing, discrete, and independent entities, an intra-active account begins with 'practices/doings/actions' that are performative and constitutive (Barad 2008, 122). Intra-actions such as scientific observations do not merely reveal a pre-existing hidden state of, or truth about, an external entity. They are boundary drawing practices that enact an agential cut, separating agency of observation from observed agency. The intra-action makes the latter matter in particular ways by differentially constituting its boundaries, meaning, properties, and agential abilities while simultaneously excluding other ways from mattering. Even observations are intra-action in that the observation affects what is observed. When measuring an atom with a fixed and rigid ruler, for instance, the ruler differentially constitutes the phenomenon resulting in an atom-as-particle with a determinate position. Since the atom would not be the same without the ruler, the atom-as-particle – like every phenomenon – is an entangled relation of difference. The atom 'includes the apparatus that helps constitute it' (p. 472). Intra-actions therefore do not only cut things apart, they also simultaneously cut things together. In addition to entangling bodies, intra-actions entangle matter and meaning. The concept and meaning of 'position' are constituted in relation to a specific material apparatus – the ruler. In general, Barad (2008, 132) maintains concepts are always embodied, being entangled with '*specific physical arrangements*.'

Such an ontology of knowing creates space for a non-anthropocentric, corporeal epistemology that acknowledges nonhumans as knowers, subjects of knowledge, and epistemic agents. Barad (2007, 147) writes that 'practices of knowing cannot be fully claimed as human practices, not simply because we use nonhuman elements in our practices, but because knowing is a matter of part of the world making itself intelligible to another part.' Put differently, human epistemic practices represent only one form of knowing – one instance of the world making itself intelligible to another part. Nonhumans can also be knowers because 'phenomena do not require cognizing minds for their existence' (p. 361). On the one hand, nonhumans also engage in discursive practices. Following Foucault's use

of discursive, Barad asserts that they co-constitute what can count as meaningful. They do not merely describe the world. Nonhumans actively engage in knowledge practices that co-constitute worlds in the process of making sense of it. On the other hand, nonhumans can be knowers with knowledge that manifests in their differential responsiveness to, and direct material engagement with, the world. Such a claim disrupts the traditional, anthropocentric understanding of knowledge as a correspondence between a propositional, linguistic thought and the world. Rather, this more-than-human, corporeal knowledge involves a correspondence between body and world.

To justify this claim, Barad provides the example of brittlestars. Relatives to starfish, brittlestars are brainless and eyeless echinoderms with ten thousand spherical calcite crystals on their five limbs and central body. These crystals function as tiny lenses that focus light onto its nerve bundles. Together these create a complex optical system like the compound eye of an insect. Despite not having eyes, Barad maintains that 'they *are* eyes. [...] [I]ts very being *is* a visualizing apparatus. The brittlestar is a living, breathing, metamorphosing optical system' (2007, 375). The brittlestar's activities are boundary drawing practices that enact an agential cut that performatively differentiates the brittlestar (subject) from its environment (object), and further differentiates its environment into parts (objects). These bodily practices make a world intelligible to the brittlestar. They allow the brittlestar to make sense of and discern (without a brain and ideas, mind you) the parts of its environment. By maintaining a level of visual acuity, the brittlestar can successfully detect shadows, track food, find hiding spots, and flee predators. Given that these are matters of life and death, brittlestars are concerned epistemic agents with an interest in knowing and acting in the right way.

The brittlestar's knowledge is reflected in its achieved embodiment and differential responsiveness. There is not a firm and fixed separation between a brittlestar and its environment. The brittlestar's material-discursive intra-actions enfold the environment into its being. The brittlestar is 'constantly changing its geometry and its topology – autonomizing and regenerating its optics in an ongoing reworking of its bodily boundaries' (Barad 2007, 375). In addition to changing its position by moving around, the brittlestar actively reworks its body in relation to its environment. It can change colour based on whether it is day or night, break off an endangered arm to distract a predator, and regrow that limb. This history of specific intra-actions with the environment is 'written into

their materialization, their bodily materiality holds the memories of the traces of its enfoldings' (Barad 2007, 383). The brittlestar's knowledge, in other words, is embodied. This differential re-materialization engenders internal metrics that co-produce a specific meaningful world. As Rosi Braidotti (2013, 60) puts it, living matter is intelligent because 'it is driven by its informational codes, which deploy their own bars of information.' Hence, like how brittlestars do not have eyes but are eyes, brittlestars do not have knowledge, their body is a crystallization of knowledge. Their knowledge is dynamically entangled with their body's material configuration, which is itself entangled with the changing materiality of the bodies that populate their world.

Michael Polanyi and Leopold each separately substantiate the claim that nonhumans are knowers. Polanyi's work on tacit and embodied knowledge (Polanyi 1962) eschews the view that beliefs must take the form of propositions that are explicitly represented through language. Accordingly, nonhumans can also have beliefs in the world in the form of existential commitments. Nonhumans believe that there is a world, and that this world is a particular way. To survive, animals must successfully navigate the world, which depends on an accurate understanding of the world. They must know the difference between what is nourishing and what is dangerous. Additionally, they must track the truth amidst different and changing situations. Commenting on Polanyi's work on nonhuman tacit knowledge, Héder and Paksi note how '[t]rue knowledge is an achievement of a living being's heuristic action to adapt, to stay alive, to be successful. By true knowledge a living being can create a contact with reality for its benefit. A fish has true knowledge when it can successfully differentiate between a prey and a bait' (Héder and Paksi 2018, 60). Leopold submits that nonhumans can intelligently draw inferences about the world despite lacking the formal, conceptual systems that allow humans to make rational deductions. Again, reflecting on his dog, Leopold (1970, 67) describes how '[h]e persists in tutoring me [...] in the art of drawing deductions from an educated nose.' For example, the dog can infer a bird's direction based on 'the story the breeze is telling' (p. 59).

Although this nonhuman knowledge might not be linguistically articulable, it nevertheless resembles accounts of explicit human knowledge. For instance, it 'open[s] up a meaningful realm of experience' (Noë 2005, 289). These resources also resemble good epistemic resources insofar as they help nonhumans 'understand, investigate, and know about specific parts and particular aspects of the world' by foregrounding certain details

(Pohlhaus 2012, 717). Indeed, the continued existence of an organism, and the species, attests to their competency as knowers and the accuracy and reliability of their sense-making activities.

This embodied knowledge and corporeal correspondence between body and world are not necessarily given but can be the achievements of nonhumans as individual epistemic agents that actively inquire into the world as well as change and learn over time. Barad's contention that intra-actions are a congealing of agency and that a nonhuman's history of intra-actions is written into their materialization does not entail that nonhumans are determined by this history. Due to the exclusionary nature of intra-actions, in which some ways of mattering are excluded, the world is never completely given, nor (dis)closed. For Barad, the world is an open-ended process of becoming, in which 'possibilities do not sit still. […] [N]ew possibilities open up as others that might have been possible are now excluded' (Barad 2007, 234). Subsequent intra-actions can consequently re-configure, re-entangle, and re-constitute the organism and its environment. Each organism, that is, is an open-ended, relational process of becoming. Each can change over time such as how the brittlestar transforms its topology in relation to its environment.

More specifically, while materialized knowledge can come in the form of genetic inheritance and instinctual dispositions, nonhumans are not simply intelligent machines governed by pre-programmed genetic knowledge, which is entirely given, fixed, and complete (Ingold 2001). Making a similar point, Héder and Paksi (2018, 61) note how 'during its ontogenesis the animal must make heuristic efforts to develop its genetic heritage into real skills.' There is a gap between generic, genetic knowledge and its application to a singular, unique environmental situation. Through the individual's heuristic efforts, nonhumans bridge this gap to determine how to apply it to this situation and ultimately develop skills. Moreover, the experience of bridging this gap can affect their epistemic resources (Ingold 2001). It is these efforts that provide reasons to think that nonhumans can be learners and their tacit knowledge can be acquired. Furthermore, scientific research recently investigated whether magpies were self-conscious and had a concept of self. Using the mirror test, a sticker or dot was painted on their forehead. The magpies were then placed before a mirror to see if they would try to remove the sticker or dot, which would imply that they recognized themselves in the mirror – that the reflection is a reflection of themselves. When the mirror test was conducted on magpies, only some of them passed the test. As Vinciane

Despret (2016, 101–103) notes, the fact that some failed shows that '[t]he dispositive does not *determine* the behavior that is acquired; rather, it creates the occasion for it. […] [T]he dispositive is a necessary but not sufficient condition […].' In other words, the failures revealed that the acquisition of self-consciousness was an individual achievement of the successful magpies. The success was neither an artificial product caused by the external environment and the researchers, nor a necessary consequence of the magpies' genetic, biological nature. It was something they individually acquired – something they learned.

Not only does an organism's history of intra-actions not determine and foreclose its future, but it can also open new possibilities. Turning to Henri Bergson's concept of duration, one witnesses how the past interpenetrates the present to generate novel possibilities. For instance, duration can result in the sensory-motor system becoming more complex. As Alia Al-Saji (2010, 156) explains, the 'complication of material structure can proliferate the routes by which an excitation may develop, at once delaying the immediate reaction and permitting a different motor response.' It is the delay of duration that opens different possibilities. And it is these possibilities that give an ambivalence to nonhuman life, which in turn necessitates choice. As Emanuele Coccia maintains, there is not a perfect harmony in nature, between organism and environment, such that organisms automatically tend toward the Good and always make the right decision. As he explains, '[e]very species is a conscious actor, capable […] of mistakes and bad choices' (Coccia 2021, 155). The good choice and the right belief are therefore an individual achievement of the nonhuman as an epistemic agent. Moreover, insofar as nonhumans and their existential commitments can change, it is then plausible to consider a series of such achievements as a corporeal learning process that occurs over time through their iterative intra-actions with others.

With reason to regard nonhumans as epistemic agents and subjects of knowledge, it is worthwhile to press the point that they can also be epistemic authorities. As Leopold's reflections about his dog convey, while formal linguistic systems provide particular advantages for humans, nonhuman modes of knowing are superior in different respects and provide access to different aspects of the world (Taylor 1986). For example, Leopold (1970, 59) contends that '[t]he dog knows what is grouseward better than you do. You will do well to follow him closely'. Likewise, Robin Wall Kimmerer often invokes nonhumans such as lilies and sweetgrass as epistemic authorities – as teachers. As she explains, '[i]n the indigenous

view [...] [humans] are referred to as the younger brothers of Creation, so like younger brothers we must learn from our elders. Plants were here first on the earth and have had a long time to figure things out' (Kimmerer 2013, 346).

The case for nonhuman testimonial injustice now depends on showing that nonhumans can convey their knowledge. Since most nonhumans lack propositional language, this claim requires extending the sense of testimony beyond the explicit articulation of beliefs. Miranda Fricker herself intimates such an extension in a footnote, writing how testimony can 'include not only cases of telling but also cases of expression to an interlocutor of judgements, views, and opinions' (2007, 50). Put differently, testimony can also include the bodily expression of information. Nonhumans can provide this type of testimony. As Leopold writes, '[l]ike people, my animals frequently disclose by their actions what they decline to divulge in words' (Leopold 1970, 83). This disclosure can include sounds such as when a dog whimpers or barks. It can also include bodily movements and behaviour. For instance, Leopold's dog conveys to him the direction of a bird through 'the cock of his ears' (Leopold 1970, 59). Moreover, Kimmerer's framing of nonhumans as teachers is premised on the possibility that they can convey this knowledge. She notes that while one can expect a verbal answer to a human question, '[p]lants answer questions by the way they live, by their responses to change; you just need to learn how to ask' (Kimmerer 2013, 159). Nonhumans are consequently neither unintelligent nor non-communicative.

With this said, one potential difference between human and nonhuman testimony is intentionality. A human speaker typically provides testimony with the intention that the listener will uptake it and possibly change their beliefs or actions. Yet, there seem to be cases in which the bodily expression of nonhuman testimony is intentional. A dog can make noises to go outside or alert others of the arrival of a guest or stranger. Ravens have been observed pretending to be injured (Despret 2016, 127). Insofar as the imitation of an injury is a type of deception, imitative bodily expressions are premised on not only the recognition that the other has mental states, but they are the intentional and active attempt to change, in this case mislead, those mental states.

Additionally, Plumwood (2002, 182) recounts how '[a] young wombat I used to play vigorous chasing games with would sulk if he did not win; he was an expert at feinting and manipulating a playmate's expectations, often feigning deceptive disinterest prior to mounting a surprise attack'.

Plumwood continues, noting that '[a]ll these behaviours require sophisticated higher-order intentionality' (p. 182).

Finally, nonhuman testimonial injustice depends on the existence of negative identity prejudices. While Fricker focuses on cases of sexism and racism, humans also have negative identity prejudices against nonhumans. As Peter Singer (2011) argues, moral speciesism discounts the moral standing of nonhumans because they are not members of the human species. Extending Singer's concept, there also are cases of epistemic speciesism, which involve discounting the epistemic competence of nonhumans simply because they are not human. For instance, Rene Descartes' (1971) *Discourse on Method* presents humans as thinking things, while nonhuman animals are mere extended things. Humans have an interior life consisting of self-conscious experiences and thoughts. Because humans possess language, humans are free and subjects of knowledge. Articulating an anthropocentric propositional epistemology, Descartes ultimately maintains that knowledge involves explicit, linguistic articulations – clear and distinct ideas. Meanwhile, animals are reduced to machines determined by the laws of nature. Not only do they not possess knowledge of the world (because this requires propositional language), but they are devoid of experience. Animals are simply passive, unintelligent matter. If speciesism and the ghost of Descartes continue to haunt the contemporary world, it is plausible that there exist negative identity prejudices against nonhumans. In summary, given that nonhuman animals are knowers, givers of knowledge, and can be subject to negative-identity prejudices, it follows that it is possible for humans to commit testimonial injustice against nonhumans.

Nonhuman Testimonial Smothering

Why are cases of nonhumans providing testimony to humans not more prevalent, though? One reason could be nonhuman testimonial smothering. According to Kristie Dotson, testimonial smothering is form of 'coerced silencing' that occurs when a speaker truncates the content of their testimony due to the listener's testimonial incompetence or unwillingness to uptake the testimony (Dotson 2011, 245). The speaker's testimony consequently only contains content that is accurately intelligible based on the listener's perceived competence or willingness. Nonhuman testimonial smothering would thus involve nonhumans truncating their testimony due to a perceived testimonial incompetence or unwillingness of humans to uptake their testimony.

The possibility of nonhuman testimonial smothering is revealed by an experiment involving psychologist Irene Pepperberg and Alex, a grey parrot from Gabon. Pepperberg successfully taught Alex to use language to speak, describe, count, and classify. When Alex first inadvertently uttered a new sound, Pepperberg responded to Alex as if he had intentionally made this sound to make a comment or make a claim on her. The sound became a word that 'signifies something for the parrot because it has signified something for the researcher' (Despret 2008, 125). To keep Alex interested in learning, Pepperberg would give him rewards for correctly describing or naming the object. For Despret (2008, 125), the reward 'translates for Alex as the right to "want" and take a position in relation to what is offered to him.' Alex ultimately picked up on how making a sound impacted the scientists, influencing their actions. He learned that he could use language to influence Pepperberg by saying "'come here," "I want to go to that place," "no," "want this"" (p. 126). For example, sometimes Alex did not want the reward offered and would indicate that he would rather go on a walk, to which Pepperberg would comply. Pepperberg's recognition of Alex as a subject and her involvement in the experiment was ultimately the key to the success because parrots do not have a referential conception of language, but a pragmatic conception of language, which is premised on the ability to influence their environment. Hence, the success depended on Pepperberg being receptive to Alex as a subject and subordinating 'her desire to what makes sense for Alex in the matter of speaking' (Despret 2008, 127). In doing so, she was able to ask questions that mattered to Alex and would solicit a response.

But why did science not make this discovery before? Despret helps answer this question by noting how scientists often control the conversation. Experiments often take the form of making the test subject 'submit to the theories that guide research, submit to the problem that is imposed on them in the manner in which the researcher constructs and defines it' (Despret 2008, 131). Moreover, scientific objectivity requires scientists to be impartial, bracketing anything subjective or personal so that they do not bias the experiment's outcome and invalidate its universality. The good scientist is like an automaton, which according to Despret's etymology, is 'one who is moved by itself, and only by itself, that is the one who will not be moved, put into motion by others. In sum, it is the one who will not be affected, and therefore who will not affect' (p. 117). In the case of previous objective and impartial experiments with parrots, it is therefore possible the problem was that for the parrot it seemed like they were

addressing no one. Parrots, Despret (2008, 125) explains, 'cannot speak if they don't feel they are speaking to someone.' That is, there would be no reason for the parrot to learn to use language, or provide testimony, since it would not have affected the detached, objective scientist. Putting it in Dotson's words, it is therefore plausible that nonhumans might truncate their testimony, or provide no testimony at all, because of the perceived unwillingness of humans to engage in communicative exchange and/or the perceived epistemic incompetence of humans to track the truth of their testimony.

Outside the laboratory, nonhuman testimonial smothering could occur in pet-owner relationships. Due to an owner's indifference, neglect, or abuse, the animal would not have a reason to provide testimony because they have learned that it will not make a difference to the indifferent owner. Or, worse yet, they might have good reason not to provide testimony because of previous instances in which it resulted in abuse. Both cases would lead the animal to truncate a portion, or all, of their testimony.

Conclusion

Disrupting the resiliency of a maladjusted epistemological system will not be easy. As Dotson explains, the '[f]ettered persons to the right of the farthest left prisoner will need to extend extraordinary amounts of credibility to the farthest left prisoner' (Dotson 2014, 132). This paper has sought to justify extending credibility to nonhumans as subjects and givers of knowledge with their own onto-epistemic practices, thereby making the nonsensical a little more sensible and the impossible a little more possible. 'Staying with the trouble' of nonhumans entailed challenging anthropocentric epistemologies and the human-nonhuman dualism, while recognizing the non-hierarchical differences between human and nonhuman knowledges and onto-epistemic practices (Haraway 2016). By recognizing nonhumans as epistemic agents, this paper attempted to trouble human epistemological systems, expand social epistemology, and provide a means to hold humans accountable for epistemic injustices committed against nonhumans.

To end on a positive note, it is worth briefly reflecting on the value of including nonhumans in the social, epistemic community. Due to their biological, anatomical, and environmental differences, nonhuman animals not only have different perspectives and knowledges, but also different epistemic and worlding practices. By appreciating these differences, hu-

mans can come to have a better understanding of the world. As Uexküll notes, '[the forest] is hardly grasped in its true meaning if we relate it only to ourselves. [...] The meaning of the forest is multiplied a thousandfold if one does not limit oneself to its relations to human subjects but also includes animals' (Uexküll 2010, 142). In other words, recognizing and engaging with nonhumans as knowers promises an inter-species form of strong objectivity (Harding 1991; Alcoff 2008).

Making a similar point, Kimmerer writes that '[w]e Americans are reluctant to learn a foreign language of our own species, let alone another species. But imagine the possibilities. Imagine the access we would have to different perspectives, the things we might see through other eyes, the wisdom that surrounds us. We don't have to figure out everything ourselves: there are intelligences other than our own, teachers all around us' (Kimmerer 2013, 58).

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