Forest Forms and Ethical Life

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Abstract What kind of guidance can the world Eduardo Kohn calls "forest" provide for living well on Earth in times of planetary anthropogenic ecological fragmentation? How, that is, can humans learn to ecologize their ethics? Reflecting on his ongoing ethnographic research in and around Indigenous communities of Ecuador's Upper Amazon, Kohn uses what he learned to help find a path that can orient humans in their attempts to live well in relation to the many kinds of others that make and hold them. Ecologizing ethics, this article argues, turns on understanding the living world as a "thinking forest," one that is mind manifesting or psychedelic in nature and as such requires a mode of attention that is itself psychedelic. Ethical guidance comes from finding ways to appreciate the "shape" of the larger mind of which people are a part, and in this way, to find direction from that form as it becomes manifest to them. This article discusses, thus, the ways in which an ecologized ethics is linked to the aesthetic ground from which it emerges.

Keywords environmental ethics, Anthropocene, Amazon, emergence, psychedelics

Facing Planetary Ecological Fragmentation

We are living in an age of anthropogenic ecological fragmentation marked by unprecedented climate change, the specter of mass extinction, and the disruption of planetary life-support systems. This crisis makes clear that our human-centered ethical frameworks (those that orient our conduct, dictate our norms, inform our core values, and ultimately allow us to imagine a better way of life) have failed us. The task before us is to reimagine how to conduct our lives on a planet we share with the vast but fragile web of life of which we are a part. Given our scholarly traditions, which tend to treat ethical questions as strictly human in scope, and our political traditions, which tend to equate the good with unfettered human progress, this is a daunting prospect. Grasping the magnitude and urgency of this task poses a radical challenge, demanding that we develop the conceptual equipment—the ideas and methods—to "ecologize"[1] our ethics. This essay, drawing on my ongoing research in the Ecuador's Upper Amazon, is a preliminary exploration of how to go about doing so.

1. Latour, "To Modernize or to Ecologize?"

Environmental Humanities 14:2 (July 2022)
DOI 10.1215/22011919-9712478

The Amazonian notion of the forest as a vast ecology of communicative selves discloses aspects of the living world our inanimate idea of nature fails to capture. My work with the Kichwa-speaking Runa of Ávila, described in my book *How Forests Think*, helped me understand this.[2] If thought exists beyond us, I realized, then our core assumptions about biology, life, and what is distinctively human must be rethought. My current work marks a turn from ontology to ethics. *How Forests Think* aimed to say that a thinking forest is no mere metaphor, but the planetary ecological crisis we are facing has led me to realize that a thinking forest requires more than explanation. It calls for our collective participation. It is the whole of which we are but a part. Yet today that whole is being torn apart.

Defending the thinking forest has folded me into an ad hoc community that includes a creative alliance with the Sapara leader Manari Ushigua and members of the Sapara nation, as well as with neighboring Sarayaku, a Runa community that is on the vanguard of an Indigenous ecological politics, and also with a network of environmental activists, artists, musicians, architects, and lawyers. This work involves the collaborative creation of documents communicating a vision of a sentient forest for a planetary public, the creation of an experimental museum and installation soundscapes, the collaborative creation of alternative ethnographic methods, and testimony as an expert witness in court cases involving environmental destruction in the context of the rights of Indigenous peoples and "nature." Together we struggle to hold open a space, protected from oil companies and roads, where forests can continue to think. But that challenge discloses a deeper one, beyond protection. This essay is a preliminary exploration of how the form of a forest, in its thinking generality, can serve as guide to "ecologizing" our ethics at a moment in which the sole focus on human advancement no longer holds.

As such, it is grounded in the broader question of care, as outlined by María Puig de la Bellacasa, following Joan Tronto and Berenice Fisher. That is, it is fundamentally concerned with discerning ways to "continue and repair 'our world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web."[3] The word for that "world," according to my Sapara and Runa companions, is *forest* (*sacha* in Kichwa, *naku* in Sapara).[4] By *forest* I refer to Amazonian tropical forests with their many beings, human, nonhuman visible and not so readily visible, as these become available to me through ethnography, broadly construed. In a broader sense I use *forest* to refer to any entity that can be understood as an "ecology of mind."[5] In this sense our gut microbiome is a forest, our minds with their multiple selves are a forest, and a city at times can be a forest, when these are understood in terms of the attributes that make them an emergent unit of mind.

2. Kohn, *How Forests Think*.

3. Puig de la Bellacasa, *Matters of Care*, 3.

4. Ursula K. Le Guin adopts the Indigenous usage of *forest* for *world* in her science fiction book *The Word for World Is Forest*.

5. Bateson, *Steps to an Ecology of Mind*.

If care is this project's ground, ethics is its focus. Following Puig de la Bellacasa, my concern is to develop a speculative ethics,[6] one that is not a description or diagnosis of our ethical landscape but rather an ethnographically and conceptually informed adumbration of a possible ecologized ethics. A focus on ethics, as I, following Charles Sanders Peirce, use the term, involves attention to those practices by which one discerns one's appropriate ends and then finds ways to work toward them.[7] Because, as I will argue, this practice of discernment that concerns me requires the recognition of the forest whole of which we are but a part, it will always, in some way or another involve attention to that whole, the work needed to maintain its holistic form as well as our ongoing access to it. In this sense this ecologized ethics is grounded in care. I here use a constellation of three terms—*whole*, *shape*, *aesthetic*—that will surely put the critic on guard. I hope here to explain why these are important, and how, in the specific sense that I am using them, they contribute to the larger argument presented here.

I adopt the verb form *ecologize* from Bruno Latour to contrast it with what he calls "to modernize." To ecologize is, to date, not an accepted word in the English language. This is in keeping with its speculative mission. To modernize, by contrast, is of course an all-too-common part of our lexicon. A modernized ethics is one that stems from a modern distinction between nature and culture. On this view ethics is either naturally ingrained in the human species, the product of human culture, or a mixture of these two.[8] An ecologized ethics, by contrast, grows from a recognition that we are part of a larger living whole that exceeds us. In these times of planetary ecological fragmentation that larger whole is understandably an object of ethical concern, but the goal of this article is to show how that larger whole can be, in addition, the source for an ethical practice. That is, an ecologized ethics is not only directed toward the world-called-forest, understood as an object of care, for the form that ethical practice takes is informed by the living dynamics of that world-called-forest. I am not seeking to delineate a moral framework, concerned with using ethnography and other resources to chart out what might be a blueprint for the planetary good (arguing, for example, that Amazonian groups are better at protecting the planet or saving rainforests). Rather, my aim is to capacitate an ethics in the Foucauldian sense as described by Jane Bennett, among others.[9] That ethics would be a technology of the self. The self in question, however, is one that is made and unmade by virtue of coming to recognize how it is part of the larger emergent, ephemeral, and provisional self of the forest that makes us.

Central here is the idea of enchantment as discussed by Bennett.[10] My emphasis, however, is not on the kind of phenomenological footing we might find: to learn to see

6. Puig de la Bellacasa, *Matters of Care*, 6.

7. Peirce, *Three Normative Sciences*, 200.

8. Keane, *Ethical Life*, 5–6.

9. Bennett, *Enchantment of Modern Life*, 144–45.

10. Bennett, *Enchantment of Modern Life*, 144–45.

the world with wonder, to allow it to enchant us. Rather, in keeping with the word's etymology (from the Latin *incantāre*: *in-*, upon, against; *cantāre,* to sing), I hold that what one might call "vital song" is the warp and weft of the world-called-forest. Learning to listen for and resonate with it is an ethical practice.[11]

Ethics, in the general sense, following Peirce, in which I am using it is concerned with ends, and this project turns to the world-called-forest as a site for the continual manifestation of new ends. These ends are manifold and proliferating, not singular and foreclosed: telos does not require a teleology.[12] It is up to us to discern which ends are those of the larger *I* of which we are a part. The ends made manifest by a world-called-forest in and of themselves are not concerned with ethics, but they do, as I will argue, express what I will define as an "aesthetic," and that aesthetic is the formal backdrop that should inform an ecologized ethics.

I have come to think of this effort to find guidance from the sylvan world, under the rubric "forest for the trees." Alluding to the common-enough failure of the human imagination to abstract from the particular, this points to a failure of a different order, namely, our failure to recognize the ways a forest is actually something greater than the sum of its individual parts. A "forest," then, is not just a human abstraction we impose on a world supposedly made up exclusively of so many "trees." Rather, the general, or abstract, quality of a forest is an emergent property that dense, semiotic, self-organizing living systems intrinsically manifest. That is, a forest qua forest manifests thought and is not just the product of our thinking. Furthermore, such a forest exhibits some of the properties of thinking—such as end-directedness and generalization—that we tend to associate exclusively with humans. If this is so, then it behooves us to learn to listen for what such thinking can express and, as strange as this may sound, to recognize the ways in which the forest can provide a kind of ethical orientation for the sake of the various human and nonhuman life-forms—the trees, so to speak—it sustains.[13]

A Thinking Forest

My vocation, anthropology, at its best, allows the ideas of others to ingest its own, and in this way has unique potential for transforming our thoughts. Moving among different realms—dreams and visions, myths and histories, animal encounters and scientific theories—it is a "diplomatic," even shamanic vocation.[14] It allows Amazonian and scientific understandings of life to engage and reshape each other as part of a collective effort to address the climate crisis. Central to this diplomatic endeavor is the idea of the

11. *Oxford English Dictionary*, s.v. "enchant."

12. Cf. Bennett, *Enchantment of Modern Life*.

13. On the spirit life of trees see Krøijer, "Non-relational Forest."

14. See Kohn, "Philosophe, trop philosophe," 118–19. The term is originally from Viveiros de Castro, "Crystal Forest," 154, drawing on Stengers, *Cosmopolitics II*. Its meaning as "diplomacy" is expanded by Latour in *Inquiry into Modes of Existence*. See also Battaglia, "Cosmos as Commons."

self. Amazonians have built an entire metaphysics around the pronoun *I*.[15] All beings are persons, selves who think, minds that represent what surrounds them. What if biology were to follow this insight and take as its basic unit of study a subject (an *I*, a *we*) rather than an object (an *it*)?

We tend to think of thought as exclusively human, dependent on big brains, consciousness, and language. This is what supposedly separates us *Homo sapiens*, the knowing species, from the rest. But thought is larger and greater than our provincial experience of it. Our continuity with the rest of life depends on those properties we share as selves. All selves represent their surroundings: the wings of a bird "say" something about the currents of air it catches, just as the web of a spider captures the shape of a fly. Wings and webs are thoughts that exist for the sake of the future self that will house them.

Human thought differs from the forest's thoughts, even as it is continuous with them. In the language of systems theory, human thought is an emergent phenomenon. Language, its prime exemplar and vehicle, uniquely allows us to imagine other worlds; I can conjure on this page the prospect of a thinking forest just as others can negate it on another. And yet the novel form of reference that makes that game possible nests within and is emergent from another, larger one: the thinking forest.[16] We can know this not only through abstract argument but also by attunement to its distinctive properties. We form part of a thinking nature even as our culture tends to separate us from it. Learning to recognize and work with the properties a thinking forest exhibits is key to understanding our continuity with those others with whom we share our earthly home and key to finding ethical guidance from this world-called-forest.

The Runa and Sapara use many techniques for thinking with forests. Central among these is dream interpretation. Dreams think the way forests do, via chains of imagistic associations. And they reveal some of the properties of this form of thought and the ways it produces those things, like abstractions and generalities, we might otherwise associate exclusively with human minds. When they say that selves are souls and that spirit precedes matter, the Runa and Sapara are tapping into the ontological properties that the rainforest, the greatest planetary collection of living thoughts, both expresses and makes manifest.

The way out of the modern trap in which we find ourselves, then, is to make a conceptual shift in how we think about thought, away from seeing humans and our distinctive way of thinking as sui generis, to a view that recognizes that there is a vast form of thinking that holds and sustains our human forms of thought. If we can grasp the continuity between our thinking and this different kind of thought, and if we can find ways to learn to think with it, we might be able to put a check on the human propensity to sever ourselves from the world—a separation that has created the current condition of

15. Viveiros de Castro, "Cosmological Deixis and Amerindian Perspectivism."
16. Kohn, *How Forests Think*.

fragmentation which has alienated us from the living and thinking world that makes and holds us, to the detriment of human and planetary well-being.

This other way of thinking we humans share with all of life is made exquisitely manifest by tropical forests and those who live with them. I call this kind of thinking "sylvan," in the sense of wild or of the forest. Identifying sylvan thought's distinctive properties and showing how we can work with them to create concepts that are from, with, and for our common world—a world properly understood as forest—can illuminate, by contrast, both the particular properties and the limitations of exclusively human forms of thought.[17]

Life is at base semiotic. That is, life is made entirely of sign processes that have emerged from a nonliving and hence nonthinking world from which they radically differ but with which they are nonetheless continuous. Central to this claim is the assertion that the fundamental unit of life is a "self."[18] A self is the product of semiotic thought and not its producer. This is one way to diplomatically appreciate the fundamental Sapara claim that, in the world-called-forest, spirit precedes matter. A self is a particular kind of enclosure—a "skin" in biological parlance, "clothing" when understood through an Amazonian idiom—that results in the creation of a kind of geometry by which an interiority emerges that is constitutively related to those outside it that it is not.

Semiotic life creates telos, or "ends." It is only in the world of thought that something that can now be understood as a self can come to exist for the sake of the future self it is not. A semiotic self is thus a minimal locus of telos, and a forest, understood as a vast emergent self, made of the many selves it subsumes, can also make manifest ends at a greater scale. This is relevant for understanding how an ecologized ethics can emerge by special attention to the ends that life produces.[19]

Sylvan thinking has specific properties that can be cultivated as conceptual tools. I focus here primarily on four interrelated ones: emergent, imagistic, absential, and general. Emergence provides a way of understanding novelty without severing it from the causal dynamics from which it arises. It thus allows us to perceive wholeness where we might otherwise see only fragmentation. Drawing on the work of bio-anthropologist Terrence Deacon, I claim that semiotic life is emergent with respect to the nonliving energetic and form-generating dynamics from which it comes.[20] Life exhibits new properties while retaining a fundamental continuity to that which logically precedes it. Emergence is most visible in the realm of semiosis proper. Human language, built on "symbolic" representational processes, is emergent with respect to the more basal "iconic" and "indexical" referential dynamics that characterize life, and on which it is constantly dependent. Emergence is crucial for understanding what both life and the

17. Kohn, *How Forests Think*.
18. Kohn, *How Forests Think*, 6, 23, 37.
19. Kohn, *How Forests Think*, 16, 40–41.
20. Deacon, *Incomplete Nature*.

human are, for it allows us to see the generation of something new that is nonetheless constitutively made by that which precedes it.[21]

To think with forests, then, is not a form of regression. Rather, it is a way of falling back into a larger whole as a way to move forward. Emergence is also crucial for arriving at an appropriate understanding of the separation between nature and culture. The goal is not to entirely collapse these two categories (which is the dominant and, to my mind, mistaken form of addressing the problem of human exceptionalism in fields such as science and technology studies).[22] Rather, the aim is to show how human culture is an emergent phenomenon, one that is novel at the same time as it is continuous with, and thus never fully separable from, that from which it comes. Our hubris is to think that we can have culture without nature. This is a misunderstanding of how emergence works. Erasing that which is distinctive to culture, as a solution, moreover, is equally misguided, for it simply denies the emergent properties of culture that are also proper to a way of being fully human.

The manifestation of mind as exemplified by a forest is nothing short of the emergence of the primary site of emergence itself, made manifest as such. That is to say, semiotic life is a dynamic that is characterized by its ability to continuously create ever new emergent possibilities to a degree that is without precedent. On this planet, tropical forests, with their many layers of life, exemplify par excellence this potential for continual emergence.

Sylvan thinking is also imagistic. This involves signs of likeness or "iconism." Consider the evolution of camouflage in the South American dead leaf mantid (*Acanthops falcataria*). It emerged through a process by which organisms come to resemble—literally, assume the shape of—the world around them. The mantid looks so much like a dry leaf that it comes to disappear among the detritus that surrounds it. This disappearing organism appeared over evolutionary time through a process by which its potential predators tried but failed to notice its presence.[23] I draw two conclusions from this. First, the appropriate unit of mind in an ecosystem is not solely the individual or the lineage, but these *plus* the others[24] that notice (or in this case fail to notice) them. That distributed mind, larger than any one individual or species, can be called a forest. This is one intimation of the ways in which forests, and not just their constituent species—the trees so to speak—think. Second, thinking is not just noticing. Although acquiring information or learning is obviously the goal of thought, there is something that precedes this—a constrained form of confusion. Leaf-like mantids, after all, emerged because they were *not* noticed by a predator that otherwise noticed all of the proto-

21. Deacon, *Symbolic Species*; Kohn, *How Forests Think*, 27–70.
22. Kohn, *How Forests Think*, 6–7, 40, 91.
23. Deacon, *Symbolic Species*, 75–76; Kohn, *How Forests Think*, 50–51.
24. Bateson, *Steps to an Ecology of Mind*, 457.

dead leaf mantids that were not particularly "leafy." In the realm of thought confusion is productive; it creates "wholes" not reducible to the parts that make them.[25] The "aesthetic" implications of this kind of semiotic holism will be important for the discussion that follows.

Thought begins and ends with a kind of likeness that is not self-similar identity. Living thoughts in the wild begin and end with a productive form of confusion that has the image at its core. Forests, then, think in pictures. If this is so, how can we think with and like them? How, in short, can we create the conditions under which a form of iconic isomorphism can emerge that can enable our thoughts to be productively confused with the thoughts of the forest? This is central to any attempt to ecologize our ethics. Amazonian ways of thinking with and like forests are "technologies"[26]—that is, specific practices and methods—that can encourage this form of thinking. The Amazonian cultivation of dream interpretation is one such technology.

Following the counterintuitive logic of imagistic thought leads me to reflect on the third property of sylvan thinking that I focus on here: what Deacon terms "absentialism."[27] I do so by returning to the dead leaf mantid example. These mantids are the product of the following absences: the predators who did not notice them; their relatives, the proto-leafy mantids who were noticed and killed; and the leaves surrounding the mantids, which these creatures resemble but are most definitely not.

The mantid example also exemplifies the final property of sylvan thought I wish to consider—generality. The evolutionary emergence of leafy mantids did not just create a new organism, it created a kind, a generality. Not only are there now leaves that are leafy but so too are some insects. There is now more leafiness in the world. Leafiness as a general but real entity is the product of thought, but it is not the product of *our* thoughts—the human categories by which philosophers usually assume that generalities can emerge. In Amazonian terms, this kind of generality is understood as spirit, even as a god, one that is not anthropogenic.

A Psychedelic Science

To find guidance from the sylvan thoughts of a forest manifest-as-spirit the Runa and Sapara use psychedelics. They do so because forests are themselves psychedelic, that is, mind manifesting. The living mesh of layer upon layer of co-evolutionary dynamics, forests continuously create higher-order emergent minds (spirits, in Amazonian terms). A psychedelic science—whether anthropological or shamanic—seeks to echo the psychedelic quality inherent to this larger mind. This is the origin of our ongoing poesis and a source of the guidance we need.

25. Kohn, *How Forests Think*, 84–86.
26. Collu, "Therapy of Screens."
27. Deacon, *Incomplete Nature*, 23–31.

My ethnographic study of the traditional use of psychedelic plants in the Amazon and reflection on my personal experience with them has led me to develop "psychedelic" as a general concept, extending beyond mind-manifesting substances and the effects of their ingestion. Noting the word's Greek etymology—*psyche*, mind, soul, or spirit, and *deloun*, to make manifest or reveal—my point is that psychedelics reveal important properties of a world-called-forest when that world is understood in terms of its central characteristic, namely, that it manifests mind.

Psychedelics such as *aya waska* (or *ayahuasca*), a decoction made from *Banisteriopsis caapi* and *Psychotria viridis*, used among the Sapara and Runa as well as other Upper Amazonians for shamanic curing, are medicinal insofar as they are toxic to the self we think we are. They are anthropophagic. They consume this self to allow another, larger one to emerge. Forests continuously express this psychic process of mind manifestation as well. Indeed, a forest could be formally defined as any arrangement of minds that comes to manifest—as an emergent property—a higher-order mind. Amazonians call this kind of mind "spirit." The fundamental reality of the world-called-forest we all inhabit is, then, its psychic—its spirit- or mind-like—quality.

Aya waska breaks down the bounded self we think we are, such that another, more capacious one can emerge out of this psychic death. To be sure the psychedelic endeavor is not a romantic one. Psychedelics are not just taken to become "one with everything." Rather, they permit the dissolution of a specific kind of self in order to strengthen a carefully delimited but larger emergent one as it faces the existential threats that other enemy selves pose. That larger self is nothing less than the one made manifest by a world-called-forest.

Insofar as forests come to manifest as an emergent property a higher-order mind, they are psychedelic. By mind, I mean a psyche, a self, or in the Amazonian idiom a person, soul, or spirit, regardless of the creaturely form it may take. Such selves may be furry, leafy, feathered, or finned, silent or loquacious, sedentary or ambulant. They all partake in a psychedelic dynamic in relation to the world-called-forest such that they are both made and unmade by that forest at the same time as they incessantly remake it anew. Through this the forest is a site for continual mind manifestation. A "forest," then, is a general but precise concept, and the sylvan world to which it gestures exceeds the tropics as well as those ecosystems made up primarily of woody creatures.

Following Peirce, I treat any entity, regardless of its status as human or nonhuman, as a "scientific intelligence" if it demonstrates the capacity to learn by experience.[28] For Peirce, a central element of learning is the moment in the process of thinking in which a "new" thought emerges—one that is the product of a specific rearrangement of previous thoughts about the world such that an emergent one can form that unifies them. This applies to the scientific "eureka moment" of arriving at a new hypothesis, as seemingly disparate clues are fitted together to form a more holistic understanding of the

28. Peirce, *Speculative Grammar*, chap. 2.

phenomenon in question.[29] But it applies equally to the "thoughts" expressed by any living and thinking dynamic, including a new lineage of organism, as it, over evolutionary time, comes to form an embodied representation, a novel thought, about its environment, to which its component parts, now subsumed under an overarching adaptive form that encompasses them, now "fit." Such an organism, understood as an exemplar of the scientific intelligence it manifests, can be understood to be a highly embodied hypothesis or guess about the world.

Guessing is central to life. I quote one of the characters from Richard Powers's novel *The Overstory*: "Trees are doing science. Running a billion field tests. They make their conjectures and the living world tells them what works. Life is speculation and speculation is life. What a marvellous word! It means to guess. It also means to mirror."[30] Formally speaking, this speculative process by which a living thought, understood as an emergent self, comes to mirror and thus be part of a larger self that exceeds it, is psychedelic insofar as it requires the fragmentation of previous thoughts and their subsequent rearrangement to give rise to an emergent whole. Peirce's name for this psychedelic moment in the inferential process in which novelty explodes onto the scene is abduction. He contrasts it to induction, the process by which particular inferences support a general case, theory, hypothesis, or understanding, and deduction, the reverse process by which an established theory or set of assumptions allows us to discern the particular forms of evidence that support it.[31]

Although induction, deduction, and what Peirce calls abduction are associated primarily with philosophical and scientific inference, they are also generalizable to all thinking processes, as they are expressed by a scientific intelligence that need not be conscious or human. A forest continually expresses emergent thoughts. These are the result of the "speculative" science, to adopt Powers's idiom, being done by its component "trees." Biologically speaking this is visible in the novel species with new adaptations and new kinds of "strivings" that are constantly emerging in the forest. Shamanically speaking, abductive psychedelic emergence is expressed by an understanding of the ways in which forests house and make manifest spirits that are general and higher-order instantiations of the life that makes up the forest.

A psychedelic science, to continue with this reasoning, is a method to apprehend and potentiate psychedelic emergence in the world by allowing it to resonate "iconically" with our own. This is akin to that second meaning of speculation—to mirror—as identified by Powers. Various "technologies" of thought (ranging from the scientific method proper, to Amazonian dream interpretation, to the practice of anthropology itself) can allow us to attend to such processes with the goal of learning from them by virtue of the ways in which they can mirror the psychedelic dynamics that are

29. Peirce, "Pragmatism as the Logic of Abduction," 226–41, 530–33; Peirce, "Nature of Meaning," 208–25.
30. Powers, *Overstory*, 454.
31. Peirce, "Pragmatism as the Logic of Abduction," 226–41, 530–33.

being expressed in the world. My own work aims to put the scientific method on par with the biological production of variation, and these on par with the Amazonian cultivation of dreaming and visionary states. I do so by allowing them to resonate with each other as I enact a kind of anthropology that is a higher-order psychedelic science with respect to these, by virtue of the ways my field can uniquely allow us to work with the emergent mind-manifesting patterns that become visible via such juxtapositions. Anthropology becomes a psychedelic science when it learns to mirror the sort of mind manifestation ubiquitous in the world.

A Direction from a Shape

Forests provide no moral blueprint, and yet attuning ourselves to their living logics can orient us. Emergent mind, wherever it is found, involves a dynamic by which an appropriate end stems from a prior holistic form. Ethics emerges from what I am here calling aesthetics; in discerning the form that unifies our fragmentary experiences we can find direction.

That forests continually manifest mind makes them worthy of ethical consideration. The world-called-forest is less an object of ethical concern than a foundation for ethics itself. An ecologized ethical practice begins with grasping the dynamics through which, in the realm of life, "direction" emerges from a "shape." To get at this it is necessary to understand in broad strokes how "mind," or in the language of the previous section, "psyche," emerges from form. A direction-from-a-shape logic informs all living dynamics. A living self exists by virtue of an end or direction that defines it; its goal is to reconstitute its form or shape. According to Deacon, life did not arise directly from matter. Rather, it emerged from the form-generating dynamics, such as crystallization, that are other than matter and yet have no ends. As they strive to maintain their bodily shapes—the distinctive enclosures that are life's vessels—living selves take up and discard matter, and their future generations retain the forms of past ones, even across the chasm of death. Life, then, involves a direction; the self's aim is to remake itself in the future. End-directed selves—life in its most basic state—do this by capturing form.[32] They do it via a certain geometrical feature; all life-forms exhibit a circular wholeness, a skin, or clothing, in Amazonian parlance, that can capture, house, harness, and propagate the specific enclosures that make them. This is an example of what I mean by a "shape." Geometrically speaking they exhibit an external boundary or surface; conceptually speaking they are a whole not reducible to the parts that make them. Such wholes are "open."[33] They exhibit a kind of aperture to the world around them and can thus be selectively reshaped by their outsides. In the realm of life, wholes precede parts. A two-leafed seedling is as whole as the branched tree it will become. This logic is also the foundation for the most basic kind of inference. Here too, albeit on a more virtual

32. Deacon, *Incomplete Nature*.
33. *How Forests Think*, 27–70.

plane, there is a shape-like logic. Learning to see that smoke points to fire, for instance, requires a prior imaginative step in which smoke-and-fire already form part of a single image; its unitary nature gives it a shape. Grasping this prior whole allows us to move from the signal of smoke toward the direction of the fire beyond our purview. That sign's end is to indicate fire, but it can do so only by virtue of the holistic image by which smoke-and-fire are already associated.[34] In the realm of thought the whole precedes the part; from that circular shape a direction emerges that can guide those fragments to complete the whole to which they belong.

Learning to recognize the information the index provides is a minimal example of finding a direction that emerges from a shape. Smoke indicates fire, not directly but rather by reference to the image smoke-and-fire. It is by reference to this image that one can infer that an experience of smoke must be connected to the fire that caused it. This image has a shape. It has the formal circular property of a whole. How this works can be understood from the mantid example. An icon or sign of likeness involves the strange counterintuitive property of being what it is regardless of any current referent. A dead leaf mantid is "leafy" regardless of its current environment. It would be just as leafy on a forest floor as it would be if it were placed on a petri dish. What is more, its very nature as leafy is the product of a semiotic dynamic that has iconism at its core. That is, it is leafy because potential predators confused it with leaves, allowing the likeness it shares with leaves to propagate. What a leaf-mantid is, then, is the product of the holistic logic of the icon. It is the product of the ways in which its potential predator "sees" the insect and the leaf as one and the same, thanks to the way it inadvertently confuses them. Although indices are proper to all sign processes in that they provide information, their function is dependent on this more basic iconic dynamic that involves wholeness.

Abduction, the kind of inference that involves the spontaneous recognition of an emergent thought that would incorporate and make sense of previous ones, follows a logic that stands in continuity to this basic semiotic one that links indices to icons. The unifying theory that emerges with an abduction joins disparate thoughts and pieces of evidence under one overarching explanatory form that accounts for how these are parts of that heretofore unrecognized whole.

The above discussion is central to understanding how an ethics emerges from aesthetics. Peirce treats this in the following manner. Ethics, according to him, is the reflection on any activity with regard to its ends in such a way that can orient conduct toward those ends. Ethics, then, is a quintessentially telic idea. But how does one discern an appropriate end? How, that is, does one identify what is ethically *good*? Peirce argues that underlying and informing the ethical good is a more basic kind of good, which he calls "aesthetic." It is Peirce's usage of this term that I adopt here. The aesthetic good, according to him, involves the ways in which our experience of the world results in a

34. Deacon, *Symbolic Species*, 77–78.

kind of end that is a feeling. It has a formal geometrical quality to it. That is, it has a "shape." He writes: "An object, to be aesthetically good, must have a multitude of parts so related to one another as to impart a positive simple immediate quality to their totality."[35] Aesthetic qualities, he continues, are "simple qualities of totalities not capable of full embodiment in their parts."[36] They are the wholes that formally precede the parts.

Peirce's observation that the ethical good is intrinsically tied to an aesthetic good that precedes it is crucial to the argument at hand. The ethical good is a potential emergent property of the aesthetic good.[37] And like any emergent dynamic, the ethical good must be connected to the underlying dynamic (here the aesthetic good) from which it emerges. To discern that which is ethically good, to discern the appropriate emergent orientation for our conduct, then, one has to reach back to the conditions that give rise to it. That is to say, one has to first identify the specific underlying "totality" (the aesthetic good) of which our actions (the ethically good) might be a "part," and then one has to act to ensure that this totality can continue to inform such an ethics. This is the way to find a direction from a shape. This is how the forest can provide guidance for us "trees" in a way that both sustains and works with the particular forms expressed by that forest. And this also is the way in which finding that direction and moving toward it contributes to the maintenance of that shape. In fact, the work done to maintain that shape against the continual threat of its dissolution is a way of envisioning an ecologized politics.

The specific ways in which Amazonians discern an ethical direction from the holistic "shapes" suggested by a world-called-forest illustrate this argument. Consider the Indigenous ethic *sumak kawsay*.[38] It is usually translated as "good living" or "*buen vivir*." *Sumak kawsay* is a political concept that is grounded in Amazonian life. It was first articulated by a Sarayaku resident as part of his undergraduate anthropology thesis.[39] It has gained a lot of traction as an alternative to a modernizing ethic, thanks to the Indigenous movement that became an important player in Ecuadorian politics beginning in the 1990s. Although *sumak kawsay* is often misunderstood and propagated by the Ecuadorian government in humanistic terms, as an ethics that begins and ends with how humans should treat one another, the true meaning of the concept, as people in Sarayaku articulate it, involves attention to the much larger ecology of selves to which we are connected. This is visible in its etymology. *Sumak* in Kichwa means beautiful, harmonious, or whole. *Kawsay* means life or lifeway. The good life for Sarayaku residents is grounded in what they call *Kawsak Sacha*, the Living Forest.[40] *Sumak kawsay*, then, refers to a way of

35. Peirce, "Three Normative Sciences," 201.

36. Peirce, "Three Normative Sciences," 201.

37. Peirce, "Three Normative Sciences," 201.

38. Acosta, "El buen vivir como alternativa," 299–330; González and Vázquez, "Ontological Turn in the Debate."

39. Baker et al., "Mainstreaming Morality," 40.

40. Kohn, "Ecopolitics."

life that is in harmony with the aesthetically good form from which it emerges as this is made manifest in the world called forest.

A counter example of *sumak kawsay* taken from Manari Ushigua's reflections on an experimental film made by the Quebecois artist Philippe Leonard about the destruction of a forest as a result of climate change illustrates this logic.[41] This film, *Athabasca*, is about the 2016 Fort McMurray fire in Alberta, which burned close to 1.5 million acres of forest. The irony of a fire, likely caused by anthropogenic climate change in the heart of Canada's tar sands operations, one of the worst drivers of global heating, was not lost on the filmmaker. Regarding my ontological claim that forests manifest mind, the film goes to the heart of "sylvan" thought. Without context or explanation, it uses images to lead one directly into what it feels like to be a forest under assault, and to also feel the infernal quasi-agential forces responsible for its devastation.

I wanted to hear Manari's thoughts about *Athabasca* because I took it to be an instance of image manifesting spirit in the context of environmental destruction. Taking advantage of his visit to Montreal for a research project I invited him in 2017 to participate in a workshop at McGill and to watch the film and, in the company of the filmmaker, to lead a discussion on it.[42] Manari's reaction before the audience we assembled made me realize just how inadequate my ontological curiosity was. The film, he told us, provoked in him a sense of becoming literally disembodied. Echoing his experience of ecological fragmentation, he felt one of his arms flying off across the screening room in one direction, another in the opposite direction. He felt his head floating above, leaving his legs dispersed below. This appears to be the exact opposite of what Peirce calls the aesthetic good. For Peirce, recall, the aesthetic good is the result of an emergent image in which parts come together to form a larger whole. In focusing exclusively on the ontological, as such, I had missed the ethical. For Manari, *Athabasca* was conjuring real spirits but in a bad way because they were discordantly breaking his self into pieces and thus impeding his ability, as emissary of the forest spirits, to make manifest in himself a kind of larger immanent emergent self that can ethically guide us.

Central to this process of finding a direction from a shape is something that Peirce calls "one-ment" and Manari, in reference to the emergent harmonious and unfragmented self, terms "*shuklla*" (one only) in Kichwa and "*nukaki*" in Sapara.[43] Many scholars in the humanities and social sciences look critically at any argument that purports to find a universal whole. They argue that such wholes are actually always partial, and any claims of holism have the deleterious effect of silencing those who don't fit it. To my mind this is mistaken. These scholars conflate the universality of oneness as a

41. Leonard and Wenzer, *Athabasca*.

42. "Images and the Spirit Life of Sylvan Thought, Screenings of Works in Progress." Workshop with Manari Ushigua Philippe Leonard, and Lisa Stevenson, "Imagistic Fields," Filmmaker Masterclass and Screening Series, McGill University, Montreal, QC, October 11, 2017.

43. Peirce, "Immortality in the light of synechism," 3.

thing with the generality of "one-ment" as an ongoing provisional and fallible process. It is this latter understanding of the "one" that I promulgate here. The most basic organism and the most basic thought are each a whole. But such wholes are living forms that observe the "psychedelic" process of breaking up to reform anew as they incorporate otherness. This continuous process of fragmentation in the service of renovation gets at what I mean by "one-ment." It is another example of what I call an "open whole."

Ontologically speaking, *one-ment* refers to the iconic and abductive dynamics central to life and thus to a mind-manifesting world-called-forest by which a direction emerges from a shape. Insofar as ethics is a human practice for orienting our actions toward a good-yet-discovered, it too partakes in a process of one-ment by which an appropriate guiding whole can be discerned.

This form of finding a direction from a shape, central to all semiosis, involves a curious reversal of the temporal dynamic. To return to the example of smoke, the move "forward" to understand what that smoke is pointing to involves a move "back" to draw on the previously established memories of smoke-and-fire to see that fragment—smoke—as part of the previous larger whole. "Diplomatically" speaking, in the mundane world of events, the index tells us something new about what is happening—fire!—but this is thanks only to our ability to recognize how in the "spirit" world of mind smoke-and-fire is already a single whole. Recognizing this whole allows us to infer that the smoke we are seeing is a fragment that points to a fire we don't yet see.

Amazonian dream interpretation illustrates the relation between this logic of finding a direction from a shape and everyday ethics. Amazonians seek to interpret dreams in order to ethically guide their future conduct. That is, they use them to determine what is the right thing to do in a given situation. Dream interpretation involves a process of stepping back into the spirit world of dreams to accomplish this goal. This is done in the following manner. One first cultivates an attention to the self-organizing, imagistic, pattern-forming logic of dreams. Then one searches for resonances between the images thus produced and the everyday realm of current and potential future events, in such a way so as to permit the emergence of an abduction by which one can connect the present to the future as fragments of this larger emergent oneiric whole. With this in place, one can do the ethical work of aligning one's actions toward the future event that is thus "good" because it is understood to be a part of this totality.

Amazonian dream interpretation works with the kind of semiotic logic that I have identified as "sylvan." Not only are Amazonian dreams often about the forest—in fact, they often emerge as a result of close interaction with the forest—but they are also like the forest in that they traffic in a realm of iconic and indexical logics that are somewhat sheltered from our human tendency to think symbolically. Amazonian dream interpretation involves a kind of diplomatic translation between the world of dreams and the waking one, which is governed by language and consciousness. This involves finding a way to bring the nocturnal imagistic logic of dreams into the waking one of meaning and action without that waking one completely colonizing the land of dreams from which this logic originates.

Two examples from *How Forests Think* illustrate this. In one, a young man wakes up early and utters "I've dreamed" before taking off for the forest, gun in hand. He later returns with a collared peccary. His decision to go out to the forest to hunt a peccary is a minimal example of using a dream to discern a direction from a shape. His dream of buying shoes in the colonist town imagistically echoes the profusion of tracks left by peccary herds. It is that oneiric image that prompts him go to the forest and hunt the peccary, completing the circle so to speak, by allowing the mud and the pigs to be parts once again of that greater totality that subsumes them.[44] Consider the man who awoke uneasy from a dream he was unsure how to understand. He appeared to be preyed on by a white policeman, who had clippings on his shoulders as if he had recently gotten a haircut. It is only the next day in the forest after successfully hunting a collared peccary that the man realized that he was the hunter in the dream and not the hunted. (When men bring home hunted peccaries, they carry them on their shoulders, which leaves hairs on their clothing). Connecting the experiences of the forest to the ones in the dream made manifest a larger form: namely, the ways in which this man is a self in a larger ecology of selves. Given that whites and predators (generically described as *puma*) are the quintessential selves as determined by colonial and natural histories, and in a sense synonymous with the first-person point of view, Runa men, as a living *I*, a self, must be both. The play between a larger oneiric whole, which is revealed as such when one realizes the ways in which diverse experiences are parts of it, illustrates the direction from a shape logic. By grasping the shape of the dream, one can find one's direction; the affirmation, here, that the dreamer is a hunter, not the hunted; the subject of a possible future and not merely an object of history.[45]

Dream interpretation is emblematic of a form of thinking with the kinds of thoughts a forest produces to arrive at an ethical practice. Amazonian dream interpretation, then, is a practice for "falling" into a form. That is, it is a practice for stepping back to discern the shape that will give rise to a direction. This is a technology, not an ontology. It says nothing hard-and-fast about what exactly a particular dream might mean. It simply provides a way to move from the "shape" of a dream to the "direction" of its interpretation. It is thus a model for how a world called forest might provide a sort of ethical guidance for the sake of us "trees."

Conclusion

With the ecological crisis, we are witnessing the fragmentation of the larger self that holds us. This is terrifying because it adumbrates the possibility of a vast wave of species death at a colossal scale, one that includes many of the creatures we hold dear, as well as the human species itself. But this fragmentation, like the fragmentation that is central to psychedelic dynamics, can have positive elements as well. It is forcing us to

44. Kohn, *How Forests Think*, 155.
45. Kohn, *How Forests Think*, 191–219.

abandon the exceptional and bounded human self we thought we were. With the human self thus dissolved, we are seemingly left adrift. We are no longer able to find guidance, to orient our telos in any human-made system of meaning. In this essay I have attempted to give a preliminary sketch of the ways in which this condition can impel us to find direction from the larger self of which we are a part, the one made manifest by a world-called-forest. It is by attention to this larger self that we can see the various fragments of our lives as parts of a greater whole, and thus to find the one-ment through which we can begin to envision a form of planetary repair.

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