Becoming Marble

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In *How Forests Think*, Eduardo Kohn extends the capacity for meaning-making, often reserved for humans, to “non-human biological life.” This move opens up his attempt to create an anthropology “beyond the human.” Yet there are limits on how far beyond the human this new anthropological project is intended to extend. Lest we think the careful parsing here is inadvertent in its exclusion of the world of mineral beings, Kohn tells us otherwise:

I recognize of course that those we call animists may well attribute animacy to all sorts of entities, such as stones, that I would not, according to the framework laid out here, consider living selves.

Yet I wonder: it is enough to reinscribe this limit, life/not-life, simply encompassing a broader range of beings? What might an anthropology beyond the human look like if it was more resolutely monist, and resisted the division of animate/inanimate as well? What if we stopped drawing the line life/not-life? How might we then approach “non-human, non-biological life”?

Kohn’s analysis suggests that I would need to come to grips with a semiosis of non-life. “What differentiates life from the inanimate physical world,” he writes, “is that life-forms represent the world in some way or another, and these representations are intrinsic to their being.” If semiosis is constitutive of life, then the question to ask is whether non-biological beings are capable of its own forms of representation, and if these are “intrinsic to their being.”

As a first step, we need to clear away the notion of the “inanimate physical world,” apparently given and self-evident. A concept of animacy, as Mel Chen discusses, is a universal of human thinking, employed by humans to arrange beings according to their understood capacity to act. More than simply having philosophical notions about which entities do or do not possess animacy, humans appear universally to create animacy *hierarchies*, in which beings organized in groups according to certain schemas can be measured as having more or less capacity to act. Chen is clear that each such hierarchy is a local, contingent, historical product, a theoretical framing capable of slipping, not a description of something absolute about a pre-existent world. She explicitly explores the animacy of supposedly inanimate minerals, showing how some relegated to the less animate end of the spectrum experience episodes of disruptive, creative activity.

Stone has a long history of relegation to the less animate end of the animacy hierarchy in European thought. Jeffrey Cohen describes the debate about whether stone had an animating spirit, literally a soul, that occupied scholars in medieval Europe in the process of reworking Aristotelian thought to be compatible with Christianity. He notes that for Albertus Magnus, author of the thirteenth-century treatise *The Book of*
Minerals, plants and animals had to have souls as a principle of their being alive. As nonliving matter, stones by definition cannot harbor them. Beginning in classical times, however, some philosophers did reason that a soul was the source of lithic agency. To solve the problem of how a stone demonstrates some of the qualities of life, a less anthropocentric vocabulary for describing inorganic agency had to be articulated, and what Albertus called the “absurd” notion that stones possess souls repudiated. That refutation was in no way easy.5

For the medieval scholastic, the demonstration of the lack of souls, of the inanimacy of stone, was predicated on stone lacking three capacities of life: “digestion, change over time, and reproduction.”6 The greatest difficulty encountered in defending the lack of these capacities came from reproduction, since stones were understood to be the product of a “mineralizing force” residing in stone itself. The argument against the ability of stones to give rise to new stones as evidence that stone was living, capable of reproduction, was simply that the manner of their (re)production was unlike that of the already constituted class of living things, comprising plants and animals. Similarly, while stone demonstrably did change over time, even “perishing,” the manner in which stone changed was too different from that of plants or animals to be allowed to be equated with organic death. Some stones were even recognized to consume other matter, but again, this did not qualify as the kind of digestion typical of living beings.7 It seems that while stones do things, including things that are like digestion, reproduction, and death, they do them in ways that are too alien to be seen as linking them to the animals and plants that medieval philosophers ranked below humans on a continuous scale of life, of soul.

The troubling animacy of stone is other.

For the North American English speaker, inheritor of this intellectual genealogy, stones are simply inanimate, non-living, inert.

For speakers of Quechua, the language of the historic Inka, however, stones are far from inert: they could move and do things wilfully; stone, in the words of art historian Carolyn Dean, was “life immobilized.”8

Stones with recognized animacy in the Inka world were called wak’a, a difficult-to-translate concept that indicates their liveliness and calls them out as subjects, without necessarily equating them with human persons.9 They are clearly animate beings; but the kind of liveliness and being they exhibit is not simply a mimickry, or a lesser version, of human being. Darryl Wilkinson notes that wak’a could indeed change state in a way we might assimilate to human death, but argues that this is “not so much a death, whereby the soul is sundered from the

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6 Ibid., 219.
7 Ibid., 221.
material body, but rather a deactivation,” what he calls a “cessation” of an “energizing flow.”10

Historically, the main source of this “energizing flow” came via alcohol and coca provided by human beings seeking connection with these stones. Those exchanges “co-constituted” both the wak’a and the humans who brought them energizing substances, making these latter runa, or human persons who were capable of meaningful action. Human beings provided these substances as “the most common method of interacting with potentially animate rocks,” but some people also engaged in conversations with them, exchanges of meanings.11

The animate stones in the Inka world were recognized as beings of many kinds: apahita, the embodied mountains; puruawqa, stone warriors; sayk’uska, weary or tired stones that “were intended for use in Inka building projects, but never arrived at their destinations”; saywa, embodiments of territorial boundaries; sukanaka, pillars that embodied the passage of the sun and thus of time; wank’a, embodiments of land ownership; and wawqi, the stony counterpart to an important person.12 These could be unaltered by human action, marked on their surfaces, or shaped extensively.

Today, the descendants of the subjects of the Inka state living in the Andean highlands continue to feed alcohol and coca to significant, animated stones called ingaychu.13 They respond by emitting breath that is suffused with an animating force that gives specificity to the things it enlivens.14

Ingaychu originate as moving beings that are revealed as stone through transformation: ingaychus are beautiful animals that emerge from springs and glacial lakes at night or in dense morning fog. A quick-witted individual who encounters such a creature can capture it by touching it with his foot or throwing a coca cloth over it. ... Then the marvelous animal shrinks until it becomes a tiny stone, which should be bundled still warm and quivering inside the coca cloth and quickly carried home.15

For people in the Inka state, being animate human and animate rock was not simply a matter of existing as one or another kind of matter, but instead arose together from engagements in which animating force was exchanged.16 Runa and wak’a were matter, flesh and stone in intra-action: “Through specific agential intra-actions ... the boundaries and properties of the “components” of phenomena become determinate ... intra-actions enact agential separability—the local condition of exteriority-within-phenomena.”17

Runa and wak’a thus emerge as recognizable agential entities through their constitutive intra-action, which creates a boundary between animate rock and animate flesh. They were not differentiated from each other on account of substance, and certainly not on the grounds of degrees of liveliness: “Not only was stone perceived as a substance given to animation, flesh was understood to be capable of instantaneous petrification. ...What was once rock might re-petrify, and what was once animate might spring to life once again.”18

Quechua is a centuries-old ancestor of Kichwa, the language spoken
today in the lowlands of Amazonian Ecuador. Kichwa is the language of the people who led Eduardo Kohn to understand that the forest has its own manner of thinking and engaging in representation. Ethnographers working with Kichwa-speakers note that “even seemingly inert entities such as rocks and stones are believed to have a life force or essence with a subjectivity that can be expressed.” They cite communications in which Kichwa-speaking people describe stones as signifying their “aliveness” by such things as “the tiny drops of water which accumulate on it when it is gripped tightly in one’s hand.” While rocks and stones are said to rank low on the continuum of animacy in Kichwa, in certain situations, they may “be perceived as highly animate, potent, and even volitional.”

What seems to differentiate the regard Kohn gives to plants and animals as living beings from the views of the Runa, who themselves recognize no boundary between these beings and at least some stones, is an assertion of realism: animals and plants “represent the world” with signs that “are intrinsic to their being,” while stones have animacy attributed to them by “animists.”

I argue that we contend not with an “inanimate physical world” of not-life, but rather with an array of materialities that at any moment may be recognized in their animacy, which is not given by humans but is evident in the intra-action of nonhuman materialities with each other and, sometimes, with humans. Nor is this strictly a mode of thought of some people we might call “animists.” As archaeologist Andrew Jones put it in a study of marks produced by Neolithic humans on rock outcrops in Scotland:

Rocks do things. Stones say things. And I mean that not as a metaphor, but as an assertion of an anthropology beyond the human that extends well beyond what might be taken as the limits of living beings.

Take, for example, a piece of marble, carved in Honduras in the eighth century into the shape of a cylinder, its surface covered with scrolls

10 Ibid., 302.
12 Ibid., 300–301.
14 Ibid., 339.
15 Ibid., 328.
18 Dean, “Reviewing Representation,” 299–300.
21 Ibid., 358.
22 Ibid., 365–366.
23 Kohn, How Forests Think, 9.
24 Ibid., 94.
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and facial features, eyes and teeth. Today it rests on the shelf of a museum storeroom in Maryland. It is the very essence of the inanimate physical world: it appears to interpret no signs, it apparently produces none, it relates only to itself. It is dead, inert, unmoving.

Except that it is none of those things. This block of stone has been moving continuously, not just from the moment it engaged with carvers, but before, as it emerged from the side of a mountain as an outcropping, a block initially connected to the core mass of stone. Through its exposure on the outcrop it was altered, registering wind and rain on a surface open to solution, with veins of different mineral concentrations enabled to respond differentially to these forces. Even before this block of stone met its first human interlocutors, it was learning from these encounters and changing under their influence.

We may reject this geo-semiosis because our semiosis is simultaneously self-fashioning, involving the emergence of a particular form of consciousness. Yet as Jean Christophe Bailly writes, “whether or not the stone has a world is not so important here. ... In no way is it a question of ascribing the beginnings of any kind of self-consciousness to this stone.” Bailly continues with a discussion of Walter Benjamin’s image of a stone signifying through its trace, the imprint it leaves, where the stone is a mark of singularity, and the imprint is itself living. And if this is the case (such that the imprint or trace is almost identical to the image), then it is because there was a degree of correspondence (a pressure, a smoothness, an insistence) between the stone and the ground of the forest. The inert needs to be reconsidered here too, because one sees that there is not only a reserve of meaning within it, but also a kind of narrative.

Similarly, if we allow the possibility of rock registering its own indexical representations of the other beings with which it has connected, then we might be able to readmit the insights of the Inkas to our understanding of this animate form.

The animacy of the stone outcropping on the mountainside is subtle. It takes place at a pace slower than the brevity of the human lifespan. It operates on a timescale that we employ as a measure of changelessness, the geological. As Hugh Raffles says, it is “indifferent to, and transcendant of the human scale.”

But nothing in the slow emergence of the rock from the mountain, the mountain from the sediments that made it, the sediments from the living creatures that expelled minerals bound up in the rock—nothing in that temporality should be taken as an excuse to deny the animacy of rock.

The marble vase resting in air-conditioned comfort today as part of the National Museum of the American Indian in Washington began its life—that is, its history of animate becoming—in a primordial ocean. There, sediments settled from ocean waters saturated with calcium carbonate, the stuff of the shells of other life-forms. Concentrated in planes, the minerals made their own structures, displaying a complexity that followed an impulse of form-making that is a geo-sign of their nature. As the limestone beds continued their lives,
they were buried and felt the pressure, the literal weight of over-lying stone. Their response was to reformulate, to reshape themselves, conserving their identity over time as calcium carbonates, learning from pressure to respond by becoming marble.

The crystal structures of marble are representations of experience. They exist at a nanoscale imperceptible to human vision. Yet they create geo-signs, crystalline utterances, that are interpretable by the brief-lived human beings who encounter them today, and did so in the past. That the understanding of the signs of marble by the human has been uncertain and changing does not disallow the representational capacity of marble. Marble enunciates its self, its history, the wisdom accrued from its long experience. Humans interpret these signs; they do not insert them in the marble.

The semiosis that humans and marble engage in is visible as a form of exchange recorded on the skin of marble boulders marked by their intra-action with humans, just as the human artisans were marked by their exchanges with stone. More than three hundred marble boulders that engaged in intra-action with humans in Central America are scattered throughout museums around the world today. Their trace chemistries are indexical signs of their emergence in outcroppings around the Ulua river valley.

Their intra-actions with humans there enacted their agential separability, provided the local conditions for exteriority-within-phenomena, which is literally marked on the surfaces of these marble boulders. It is manifest in repeated patterns of scrolls intermingled with isolated eyes, mouths, and limbs, carved by human artisans we can see as acknowledging the animacy of marble by exteriorizing that animacy in anthropomorphic forms. This does not mean the animacy was endowed by those carvers; it means the marks they made are an exchange of signs, iconic signs responding to geosigns of translucence, brilliance, the revelation of hidden bands of colour as light strikes and, where the marble is thin, passes through the stone.

The complexity of these things has traditionally been made comprehensible by converting them into two-dimensional drawings of these surface patterns. The surface patterns that can be abstracted in this fashion exist between the marble itself and the human viewer, turning the stone into a context for a superficial text to be read through symbolic conventionalization. The interposed layer of meanings centre on the face and arms...
of anthropomorphic beings surrounded by mat motifs, conventional symbols of power, and scrolls, conventionalizations of steam, mist, or clouds. The centrally located anthropomorphs are flanked by animals, felines and birds, modeled in three dimensions. The incised lines on these shaped blocks of marble, in signs intelligible to humans, are marks of the identity of the more mobile block of stone with its less quickly moving self, the mountain.

These visual elements are shared by contemporary painted ceramics. This might appear to erase the intimate connection of the stone that forms the body of the vessel with the mountain. The marble itself might appear to be silenced. Yet Christina Luke considers the sensory qualities specific to marble as critical to the ability of these things to make meaning. Whiteness is the thread connecting the elaborately carved vases made after 500 AD to a long line of earlier vessels shaped from selected white stone, stretching back to 1100 BC. Marble outcappings represented their worlds in ways intrinsic to their being, in their whiteness, their stoniness, their connection to the mountain.

How does Luke’s interpretation of the making of meaning by these vessels work? We have two options to consider. In the first, meanings are established by convention, in a system of symbolic reference of the kind that Kohn argues is reserved for humans. Such an understanding of how meaning is made is deeply unsatisfying. It actually does not require that any stone be used at all. If the equation is entirely conventional, then simply naming a vessel made of any material “mountain-cave” would be enough.

Such a purely conventional form of meaning-making was sometimes practiced by the Ulua people: in addition to the laboriously worked stone vases, there are occasional fired clay pots slipped white, and covered with patterns of scrolls. But white-slipped ceramic “marble” vases are less common than those made of stone. Apparently, the substance mattered, in the sense defined by physicist Karen Barad, who says “the world is intra-activity in its differential mattering.” Mattering is not at all the sole domain of the human, or even what is understood to be “alive.”

What I want to explore is whether marble did more than matter—if it also made meaning independent of, or in Kohn’s terms, “beyond” the human. To consider this, we need to turn to the indexicality and iconicity of these things. Iconicity, Kohn asserts, is where semiosis begins: not noticing difference. For the human being in the act of creating a sign that connects a marble vase with the ancestral mountain via iconicity, this involves ignoring the fact that the piece of marble covered in marks can move, so that the difference between this fragment of marble and the quarry from which it came recedes.

That quarry in fact is not a solid rock face, but rather a boulder-strewn hillside. The block of marble from the quarry continues to exist, with the addition of a veneer of scratches that only become meaningful as an interpretant relates them to conventions of a system of legible signs. The block of marble can still make meaning indexically, pointing towards the hillside on which it was weathered. As Kohn describes it, an index “tells us something new about something
not immediately present.”\(^{38}\) The marble tells us there is a quarry to which it retains its attachment.

Here is where I would like to push against some of the limits Kohn seems to impose by insisting on an absolute distinction between plants and animals, who he argues all engage in semiosis, and the kinds of entities he separates them from with his cut between living and non-living things. If forests can “think,” can we not consider how mountains think, also?

The description I have just given of the way marble iconically and indexically signifies the quarry from which it came accounts for the effortful production of vases out of stone, effort that would not be required if the meaning of “ancestral mountain” were being produced purely conventionally, as it was through the making of some ceramic vessels at the same time. This account, however, has not decentred the human being from the thinking going on.

It is that tricky step I want to navigate. Kohn manages that step in part by conjecturing about how tropical forest animals would react to novel things based on experiences they could recognize as similar (by ignoring differences) or as information about something else, not immediately present, through creating iconic and indexical signs. The self-awareness and reflexivity facilitated by the animal minds that inhabit his forest make his anthropology “beyond the human” mostly an anthropology of the human-like.

However, Kohn reminds us that Peirce did not equate the interpretant forming the meaning of a sign with a human being.\(^{39}\) Rather, an interpretant is a sign in a sequence of signs. John Collier, in “Signs Without Minds,” pursues the opening Peirce provides for understanding meaning-making as something not reserved for beings with cognition. He begins by citing a famously difficult passage in which Peirce considers the possibility of sunflowers creating signs. While ending with the conclusion that “thought is the chief ... mode of representation,” Peirce inserts in this otherwise determinative sentence the clause “if not the only.”\(^{40}\) So thought is at least conceptually not the only mode of representation.

As Collier argues, for Peirce, signs are evident not because they are actively interpreted (as the narrower concept of decoding encoded symbolic meaning would have it), but rather through their pragmatic effects. “Any difference in meaning


\(^{33}\) Ibid.


\(^{35}\) Kohn, How Forests Think, 55.


\(^{37}\) Kohn, How Forests Think, 51.

\(^{38}\) Ibid., 52.

\(^{39}\) Ibid., 34.

Life entails a difference in some conceivable difference in our practical conduct.” Collier considers Peirce’s classic example of the weather vane, an indexical sign that signifies the direction of the wind. Drawing on Terence Deacon’s concept of ententionality, Collier concludes that interpretants need not be located in minds.

Yet it remains unclear whether his argument, or Kohn’s, can be pushed to allow us to consider the indexicality of marble vases as a product of the meaning-making of marble mountains. One necessary move to try to do so is reversing Kohn’s dismissal of Jane Bennett, and reinstating her analysis of matter as “vibrant.” We might again turn to Barad, whose formulation of mattering is clearer and more apposite in some ways than Bennett’s superficially simpler assertion, which is far too easily equated with the long-accepted (by archaeologists) idea that agency is not reserved for humans. Following Barad, marble outcrops acquire not just the form of the vase, but meaning through their pragmatic effects—the realization of different agential possibilities. Marble vases are different in meaning (from other marble blocks) because they entail differences in practical conduct. The vases do things, and they do things through what Barad calls “material-discursive practices”: form and meaning together.

Where Kohn treats matter as a stable substrate from which life emerges, archaeologically, I need to consider how the apparently fixed matter of rocks is in motion. The vibrancy of stone—while at a scale that living beings rarely see—makes the movement of sediment and even blocks away from an outcrop, a product of the actions of gravity and water flow, an index of active mattering, which produces signs of its being.

These signs of mattering, the material-discursive practices of the quarry, extend the sphere of activity of the mountain in ways we can perceive through changing mapping practices like those that convert “stone walks” from assemblages of bodies and forces into representations. The mountain exists at a scale that extends into the museums where marble vases are housed today. We could think of the vases on these museum shelves as outcrops, indices of the material-discursive practice of the geological inhuman. The marble vases on museum shelves are not objects in ways intrinsic to their being. They are intrinsically eroding mountains, instances of Barad’s “dynamic topological reconfigurings”: “The primary ontological units are not “things” but phenomena—dynamic topological reconfigurings/entanglements/relationailities/(re)articulations.” Even sitting on the museum shelf, things are not at rest, but are actively mattering, shaping boundaries and making meanings: “The primary semantic units are not “words” but material-discursive practices through which boundaries are constituted.”

The boundary constituted between marble and human is marked on the surface of marble vases, but it is not the unilateral expression of the human intention converting the marble into a sign. It is a human response to the material-discursive practices of the mountain that established provisionally and dynamically multiple boundaries: marble beds nonconforming with rhyolite; marble boulders
sitting on the edge of the mountain; marble blocks engaged with human carvers; marble surfaces reflecting and admitting light and signifying extimacy, the “tangible and intimate form of living’s exteriority to itself.”

Marble vases remain connected to outcrops in Honduras, assimilating museum shelves throughout the world into the Sierra del Merendón, as signs without minds of the Montaña de Santa Barbara, in a quantum physics of objects that are both matter and motion.

41 Ibid., 186.
42 Ibid., 192–193.
43 See Kohn, How Forests Think, 40, 232.
46 Joyce, “Things in Motion.”
48 Ibid., 6.
49 Barad, “Posthumanist Performativity,” 818.
50 Ibid.