

Distributed Agency and Its Discontents

While there has been a surge of interest in recent years in philosophies which describe the ground of being as a sort of panpsychic continuum or dynamic flux, not everyone is content with this development. Speculative realists, in particular, are beginning to push back against this trend claiming that the fundamental philosophical question to be answered is not, how do agentic individuals congeal out of a flowing, monist matrix, but rather, through what medium are the pluralized experiences of individual objects, which are understood to be primary, brought into relation with one another. While they agree with everyone from Serres to Simondon, Deleuze to Latour, that agency is broadly distributed, they insist that it does not manifest as some continuous flow but must be operationally localized within the discrete object. I will be exploring this debate in the course of this talk but I want to simultaneously address another issue which might first appear, but I assure you is not, unrelated.

For it occurs to me as it might to you, that the two positions outlined above seem to recapitulate philosophical arguments that are as old as the discipline itself. After thousands of years have philosophers not yet resolved the part/whole, discrete/continuous debates? That this would appear to be the case tends to confirm critics in their belief that the discipline of philosophy has little of relevance to offer a contemporary audience. Nothing could be further from the truth, of course, as the world needs more not less access to examples of how to

productively engage with paradox or mediate between seemingly mutually exclusive propositions, something at which the discipline excels.

Where there *is* room for improvement, however, is in how the accumulated knowledge of philosophy gets communicated to those in need of its non-ideological, non-theological models. Philosophers are uniquely positioned to help individuals trace a path through ideological thickets where constructs of a transcendent being or of an unadulterated Nature are of little use. But in largely limiting their range of discursive strategies to the written and spoken word, they hamper their own efforts both to explore some of the less obvious corners of their discipline and to convey its relevance to others.

By way of an example of how this transmission style might be broadened, I have here on the screen an image of the Lorenz attractor (<http://evolutionarymishaps.wordpress.com/2008/04/17/mr-edward-n-lorenz-father-of-chaos-theory-dies-at-90/>), a 3-dimensional plot of “simplified equations of convection rolls arising in the equations of the atmosphere.” As a portrait of a deterministic yet chaotic system, it shows, in rough outline, how any such dynamical system, regardless of material substrate, might evolve over time. Though numerous theorists invoke objects derived from dynamical systems theory (DeLanda, DeLuze, Hayles) it is very often left up to the reader’s imagination (or prior research) to decide what they might look like. I show this attractor here as an aid to help us visualize, if even metaphorically, the dynamic between the flux versus object debate that some philosophers believe lies at the heart of their discipline. And to extend this metaphor, it does in some ways resemble a two-chambered heart, which, given its origins as a mapping of a central part of the earth’s

pulmonary system, we should not find too surprising. But if philosophy has a heart, a big paradoxical pump at the core of its being, what does it irrigate? Why – the entire culture, of course. And what information might we expect it to be disseminating? Well – perhaps the knowledge it has gleaned about its own paradoxical, complementary nature. As realist philosopher, Graham Harman notes, “[r]eality itself is not the kind of thing that can be parsed in a set of clear discursive statements. Something shadowy remains in the background of every topic, and we have to allude to it rather than bluntly stating it sometimes.” This gesturing towards the dark matter of knowing and being is sometimes best accomplished, according to vital materialist Jane Bennett, through metaphors which establish connections between humans and the rest of material reality. Between the judicious use of such anthropomorphic analogies and the employment of imagery made available by recently invented technologies, such as mathematical modeling, I believe philosophy might improve both its communication skills and range of metaphysical exploration.

It is my belief, then, that one of the first goals of philosophers of science, especially given the current social climate, should be to help other academics, scientists, artists and the general public, become more aware of, and comfortable with, the concept of productive paradox, a concept with which, as we have seen, philosophy is well acquainted. Such a goal requires and instills not only good analytical skills but increasingly, an ability to fold one’s material and intentional being into the metaphysical problem as well. For it is only by accounting for one’s own paradoxically janus-faced existence as both part (of, for example, social relations) and whole (for those entities that exist within one) that one might hope to advance the public discourse. I will elaborate further on this part/whole relationship through an examination of

the theories of Graham Harman and Karen Barad. But rather than critique them analytically, which would no doubt be profitable in its own right, I want to focus more specifically on the formal properties of their theories; that is, I want to examine how these thinkers visualize their respective theories of vicarious causality and agential realism being actualized in, or as, space and time to see if we might, by the end of this talk, come up with an enhanced and readily communicable illustration of the part/whole paradox.

Playing behind me for the next nine minutes will be an example of one such illustration. Employing and exploring the cutting-edge technologies available in 1968, Powers of Ten (<http://www.powersof10.com/film>) was written and directed by the visionary design team of Charles and Ray Eames. Many of you are no doubt already familiar with this film, it being one of the most viewed documentaries of the post-WWII era. But though you might have been exposed to it in science class or perhaps at a museum it is unlikely that you remember it as evidencing any particular philosophical content. By bringing it to your attention in the context of this conference and juxtaposing it with another documentary that occupies a similar onto-epistemological niche - that is, moving images that lie somewhere between film and animation, fact and fiction – I hope to show not only the value of visual communication but also how new technologies can help shed light on intractable philosophical problems such as the perennially paradoxical relationship between parts and wholes.

Interest in mereology, as the study of this relationship is termed, has waxed and waned over millennia. First investigated informally by Plato in the Parmenides, this proto-geometry had to wait for, among others, Tarski, Husserl, Whitehead and Russell, to be formalized logically. In so

doing, the last of these discovered an anomaly at its core that pointed to inconsistencies in set theory. Russell's paradox, as this anomaly is known, effectively communicates through example what might otherwise remain an abstruse bit of logic: The only barber in town shaves all and *only* those men in town who do *not* shave themselves. Does the barber shave himself? Or, if you prefer: "Let there be an object **O** such that every object that is not a proper part of itself is a proper part of **O**. Is **O** a proper part of itself? No, because no object is a proper part of itself; and yes, because it meets the specified requirement for inclusion as a proper part **O**." In spite of Russell's discovery of this paradox and the questions it raised about set theory's logical consistency, the appeal of the latter, after much contentious debate, grew among mathematicians and scientists even as interest in mereology declined. Its revival within these disciplines had to await the arrival of object-oriented programming and research into artificial intelligence in the 70s. Interest among metaphysicians and ontologists however, has been more consistent over time, especially when one includes within its purview the related question of whether substance is discrete or continuous. Leibniz's ontology of course, grounds its logic in the relationship between parts and wholes, it being, in Leibniz's opinion, the root problem of philosophy. Thus the first two statements of The Monadology read: 1. The Monad, of which we shall here speak, is nothing but a simple substance, which enters into compounds. By 'simple' is meant 'without parts.' And 2. And there must be simple substances, since there are compounds; for a compound is nothing but a collection or aggregatum of simple things.

Most recently, speculative realists such as Graham Harman have again raised mereology's profile by structuring their object-oriented philosophies around its axiomatized logics. His ontology insists, for example, in agreement with Leibniz's, that objects are both real and

discrete; however, in contradistinction to Leibniz, objects are never compounds or aggregations of simple things because whenever objects meet they form new objects. Though a full description of Harman's ontology is beyond the scope of this paper, certain of its formal elements still present an image of a world far more structured than those evoked by what Harman derisively describes as "lump ontologies;" that is, ontologies which are content to rely on such abstractions as "assemblages" or "actants" for their descriptions of causality. Thus, the continuous formation of new objects through the meeting of two (real and intentional) others leads to a world populated by endless brachiations or linkages of unique objects, which Harman suggests forms an "infinite regress downward in the world, with no tiniest layer of microparticle bringing an end to the chain of beings." The same does not hold in reverse, however, because in what he calls his theory of vicarious causation, perception follows relation and if an entity is to "develop anything like a psyche" it must "become a piece of a larger object...[which] necessarily leads to entities at any moment that are at the very top of their chains of parts, so that they relate to nothing further." Though nowhere does he state explicitly that these chains of indefinite if not infinite extension have a nested architecture, other of his statements make it difficult to imagine how his ontology might be structured otherwise. Thus we learn that "every entity that exists must somehow be equipped to serve as a medium of contact between two others" which must, by default, always happen "on the interior of another...the one place where two objects can always touch". It is only, in other words, within "the hollow, molten, inner core of objects" that Harman believes the causal mechanisms of the world unfold. This view is, of course, distinctly at odds with those held by agential realist, Karen Barad.

Using an analogy drawn from physics, if speculative realists such as Harman take what we might call the particle view of objects, with a focus on their unique qualities and processes of impingement, materialist philosophers such as Barad might be said to foreground the wave, or interference pattern view. She emphasizes the way seemingly distinct boundaries appear to blur upon closer inspection. Whether examining diffraction fringes in imagery of “real objects,” how bodies, homes, communities, regions, nations and the global are intra-actively produced through one another, or Bohr’s finding that one can never separate objects from agencies of observation, Barad convincingly argues that “[b]odies are not objects with inherent boundaries and properties” but rather “material-discursive phenomena” that have the potential to iteratively reconfigure the topology of the spacetime manifold of which they are a part. Matter itself matters, that is, creates its own space of agency belying the idea that such a space is restricted solely to possibilities for human action. In contradistinction to Harman, she emphasizes that an explanation of causal relations does not require a “geometry of absolute exteriority” or “interiority” because objects do not need to touch or nest in order to affect one another. As quantum physics has shown, the world’s dynamic topology allows for action at a distance, a finding which has important implications for a post-humanist ethics. As Barad notes: “Ethics is not a geometrical calculation; others are never very far from “us”; “they” and “we” are co-constituted and entangled through the very cuts “we” help to enact. Cuts cut “things” together and apart. Cuts are not enacted from the outside, nor are they ever enacted once and for all.”

Barad here enlists quantum physics to reveal the “metaphysics of individualism” that undergirds much of science and in so doing inspires a sense of relief among those of us who

could never quite fully subscribe to its all-encompassing logic. It is, I might even say, thrilling to have the wave, or diffraction, part of our dual natures validated by the very discursive practices which had contained it so successfully for so very long. The question remains, however, as noted by Harman and by those of us who are driven by a desire to contribute to a new posthumanist ethics – who or what is it that is making the discursive “cuts” Barad describes if not a bounded entity? And from where does “her” or “its” motivation for doing so emanate if entities are continuously open to iterative change? How, in other words, does emphasizing relationality over specificity help us move towards a “reshaping of the self and its interests”?

Though Harman and Barad’s ontologies seem diametrically opposed there are certain points of overlap. Both agree that a better understanding of our rapidly forming posthumanist topology requires further development of a flat ontology, that is, a non-hierarchical model of causal relations where, as Harman says, “all relations are on the same footing.” They also seem to agree that adapting to such an ontology necessarily entails adopting an entirely new program of ethics, one which acknowledges, in particular, the agentic capacities of all entities, not just those of humans. And both seem to accept that scale becomes something of a convention in such an ontology and, according to Barad, is one we should expect to see “iteratively reconstituted as spacetime-matter is reconfigured” by nanotechnology.

But each also has unique insights into the formal properties of the part/whole paradox which might be combined to give us a more complete visual model of its ontology.

Harman provides us with an image of a world composed of bounded, unique entities unable to make contact anywhere but on the inside of another object – a mediating capacity which all

objects share. Making contact inside another, two objects then give rise to a third and so on resulting in the creation of bottomless chains of linked or nested individuals. There are no smallest particles in this model but some objects represent the last of the series and relate to no other. Unity is possible but of secondary importance as it is the incremental creation of novelty that is foregrounded. Barad, for her part, contributes the concept of diffraction (as opposed to reflection) which prompts the visual metaphor of say, a moiré pattern – not a “thing” but a “doing.” Or of a holographic image, that is, a record of a three-dimensional interference pattern in which each potential fragment of the recording medium carries information about the global whole, fully reconstituting the original image (when hit with a laser beam) if only at a reduced level of resolution. More precisely, it allows us to imagine how action at a distance might be possible; how, for example, a pattern might be built up over time through the activity of entities which have no contact with one another. Iterativity, while not exactly a formal property, is also a key element of her contribution as it reinforces the idea of a flickering, ephemeral, not-quite object, perpetually engaged in negotiating the boundary between inside and out

Combining these individual contributions of Harman and Barad with their shared belief in a flat ontology we are now in a position to view an updated portrait of what Bennett refers to as “the paradox of a self that is its own outside” (<http://kottke.org/10/02/insanely-deep-fractal-zoom>).

For those of you not familiar with this object, it is a deep zoom into the Mandelbrot set, the most complex mathematical object ever “discovered.” Generated iteratively through plotting the recursive outputs of a simple algorithm, it traces the infinite and thus, irresolvable

boundary of a set of numbers on the complex plane. Those outputs which fall inside the set are shown here in black and those which fall outside are color coded to correspond to the number of times they cycle through the algorithm before being definitively identified as a non-member. As you can see however, this distinction becomes almost impossible to maintain as the boundary, though a continuous line, becomes entangled with itself, giving rise to what appear to be solid objects set against a neutral background. But this too is illusory as we see the figure/ground relationship oscillate with increasing magnification. We can see how the complexity of the “parts” never actually decreases relative to the complexity of the “whole” and how the distinctions we make between the two might be more a matter of convention than fact. Every “part” – which is similar, but different – from all others, contains the whole and vice versa. What the Mandelbrot set represents – or enacts – then, is pure relationality graphically depicting how randomly-generated points can coalesce to form an “object”, but an object which derives its seeming solidity only by virtue of its spatial and temporal relationship to the viewer. The “object” is revealed, in this sense, to be an artifact of the viewer’s own positionality relative to an apparent scalar hierarchy, a revelation which calls into question both the ontological and empirical instantiation of the hierarchical model itself.

It was this idea that I believe the Eames were investigating in Powers of Ten but lacked the technical tools to realize more fully. We had to wait for the computational revolution and better visualizing technologies to come along before the nature of this paradoxical relationship could be made more explicit. And now that we can see how it is, indeed, possible for an object to be a proper part of itself what might the implications be for a post humanist ethics? What would it mean, for example, to imagine that each of us is the sum total of all beings and that

others are truly parts of ourselves whatever the scale at which they happen to exist? How might we make the information that we are living in a fractally structured diffractive cosmos actionable?

I would love to tell you but, unfortunately, I see that I'm out of time. So I'll just leave you with this advice from Jane Bennett who suggests that we need to get better at determining "how actants form and hold themselves together, both as individuals and as members of an assemblage...at discerning the topography of Becoming...better at theorizing the "structural" quality of agentic assemblages." This is what Graham Harman is attempting to help us do with his theory of vicarious causation and something which I believe better visualization technologies can help us move towards as well.

