Possibility Spaces

Manuel DeLanda in Conversation with Christoph Cox

Christoph Cox: When “realism” was still a dirty word in continental philosophy and cultural theory, you openly declared your commitment to the position. What do you take “realism” to mean?

Manuel DeLanda: Realism refers to the belief that there is a world that exists independently of our minds. It is about ontological commitments and implies nothing about epistemology, ethics, or other areas of philosophy. It stands in contrast not only with idealism, the belief that we create the world with our minds (at least the knowable part of that world), but also with empiricism (or positivism), which postulates that mind-independence is a property exclusively of what is directly observable by humans. To illustrate this with a simple image: if a powerful virus killed all of humanity tomorrow, a realist believes that ecosystems and weather patterns, mountains and rivers, would still be there the day after tomorrow, behaving pretty much in the way they behave today. But realists can differ when it comes to specifying the contents of this mind-independent world. The most influential realist philosopher of all time, Aristotle, believed that the world contained not only individual entities, which are subject to corruption and decay, but also species and genera, which are not. The latter he viewed as nonmaterial essences that defined what individual entities were but that existed outside of history, being eternal and invariant. My realism, like that of other materialists, does not include essences as part of the mind-independent world, but only historically-determined entities, whether this history is cosmic, geological, biological, or social. In addition, most materialists are not ontologically committed to any transcendent entity, like gods or demons, heaven and hell. Only immanent entities, those whose existence implies a material substratum, are legitimate inhabitants of the world.

You argue that the philosophical and cultural left has largely abdicated its long-standing commitment to materialism in favor of intellectual approaches (for example, semiotics, post-structuralism, deconstruction, and psychoanalysis) that are implicitly idealist.¹ What is materialism for you and what challenges does it pose to cultural and social theory today?

Karl Marx himself was a realist philosopher, and certainly believed in the existence of a material world and in impersonal forces shaping human history. He was, of course, highly influential in the development of most social sciences in the twentieth century, which means that many intellectuals in the humanities remain committed to some of his ideas, using words like “capitalism” or “commodification” as if they were unproblematic. Because of this lingering commitment to Marxism, these intellectuals think that they can be ontologically committed only to subjective phenomena (as shaped by language) and still be materialists. Marx would be highly embarrassed by them. Marxists in the first half of the century were acutely aware of their differences with phenomenology (and were among the most vocal critics of Heidegger’s ties to Nazism); but this incompatibility is entirely lost to contemporary idealist intellectuals, who think they can mix and match ideas without any regard to ontological commitments.

Gilles Deleuze has generally been considered a fellow traveler with other post-structuralists such as Michel Foucault, Jacques Derrida, Jean-François Lyotard, and Luce Irigaray, several of whom were his good friends. You read Deleuze very differently: as a scientifically and mathematically minded realist philosopher. Why do you take him to be such an exemplary realist and materialist?

Deleuze was close to Foucault and Lyotard, but not to Derrida, and certainly not to Irigaray and her goofy notion of a “masculinist epistemology.” He wrote his very first book on Hume, on the empiricist model of subjectivity, and with this announced to everyone that he was not a Kantian, that he did not believe that subjective experience is structured linguistically. This is crucial because acceptance of the thesis of the linguisticity of experience leaves only one possible realist position: essentialism. If the meaning of words determines what we perceive, then, for the objects of perception to be mind-independent, meanings must capture their essence. Thus, having rejected Kant, he was able to introduce scientific elements into his thought (without the Kantian maneuver of the “synthetic a priori”). But he does not accept science uncritically. He rejects the notion of an eternal and immutable law of nature, which is a theological fossil, and suggests how to replace it with a less transcendent, more immanent, concept: that of the structure of a possibility space (or a virtual multiplicity). Now, Foucault seems to have accepted this, since his own model of discourses is based on that notion, proposing a variety of possibility spaces, like the space of possible objects of discourse, the space of possible subjective stances, and so on. On the other hand, it is hard to tell just exactly what Foucault thought about science because he only wrote about fields like psychiatry, clinical medicine, grammar, economics, criminology, the study of human sexuality, and so on. These fields may very well be mere discourses, and are directly tied to the power of certain organizations (asylums, hospitals,
prisons); but physics, chemistry, and biology are certainly not. We will probably never know what Foucault thought about the latter three fields and, hence, how he viewed Deleuze’s handling of them.

You often draw from mathematical fields such as differential geometry and group theory. But what is the status of mathematics itself within a materialist philosophy? How does one construct a materialist theory of mathematics? Aren’t mathematical entities fundamentally ideal?

A materialist theory of mathematics begins by noting that most mathematical operations (from addition and multiplication to differentiation and integration) are algorithmic: they are well-defined mechanical procedures. In other words, they are just as material as software is. But there is more to math than that, in particular, to the math applied in science. Here the mystery is why mathematical models work at all, why the behavior of an equation can mimic the behavior of a laboratory phenomenon. The transcendent answer is: the equation captures an immutable law. The immanent answer is: the space of possible solutions to the equation overlaps with the space of possible states for the phenomenon. This answer, of course, implies that one has developed a realist account of the idea of the structure of a possibility space, an account that philosophers since Bergson have tried to offer via the concept of “the virtual.” I have given an extensive treatment of this notion, and proved its immanence (and hence compatibility with materialism) in my book *Intensive Science and Virtual Philosophy*. My strategy there was to show that the concept of a virtual multiplicity (in all its different variants) supplies the perfect tool to explain the genesis of form, in both the natural and the social worlds. Every materialism needs a theory of the synthesis of form to explain how the historical entities it postulates as mind-independent were generated in the first place: the existence of solar systems, planets, ecosystems, animals and plants, molecules and atoms, has to be explained by some historical process of synthesis. Marx, of course, knew this, and adopted the Hegelian schema of the negation of the negation as his model of synthesis. But a single a priori model cannot suffice. A large variety of virtual multiplicities, on the other hand, coupled to material and energetic processes of morphogenesis, can do a better job.

What about language? How does one construct a materialist theory of language? Isn’t language, too, ideal? Doesn’t Deleuze suggest this with his theory of “sense”?

Let’s first clarify one point. A materialist can be ontologically committed to mental entities (and their irreducibility to neurons) as much as anyone else. As long as one believes in embodied minds whose existence is immanent to their

biological substratum, there is no problem. Moreover, when it comes to social ontology, a materialist cannot use the phrase “mind-independent” to characterize the ontological status of communities, institutional organizations, cities, and other social entities. These are clearly not independent of our minds because without minds there would be no community life, no organizational practices, no urban processes, and so on. Thus, these social entities must be characterized as existing independently of the content of our minds, that is, of our conceptions of them: the dynamics of a community, organization, or city must be discovered through rigorous empirical study; and our conceptions of them may turn out to have been entirely wrong once all the evidence has been gathered. Thus, a materialist needs to believe in the existence of the contents of our minds, including meanings. In Deleuze’s theory of sense (developed in The Logic of Sense), he clearly distinguishes “sense” from “signification” (the semantic content of words or sentences), “sense” being more connected with “significance” (the capacity of words or actions to make a difference). But Deleuze’s position on language is more clearly spelled out in the “Postulates on Linguistics” chapter of A Thousand Plateaus, written with Félix Guattari.

Now, if you view language as it began historically, that is, as oral language, then its materiality is connected to the palate and the tongue, the lips and the teeth—the entire vocal apparatus needed to produce the patterned pulses of air that make up its sounds. With the introduction of writing, this materiality becomes more obvious: carvings on stone, ink on papyrus, or coded electric pulses traveling the Internet. Then, given that populations of sounds or physical inscriptions are passed from one generation to another, and given that this transmission is never perfect and includes variation, the entire population can be assigned the capacity to evolve, just as genetic information can evolve. In A Thousand Years of Nonlinear History, I provided a detailed account of this evolution for few European languages, showing that when variation decreases (as when the Roman Empire enforced the homogeneity of Latin) linguistic evolution slows down, while when variation increases (when the Empire fell, and a multiplicity of Hispano-Romances, Italo-Romances, and Franco-Romances began to diverge) it speeds up. This brings language within the purview of Information Theory, which is not about ideal entities but about the physical coding of patterns in a variety of media.

Another key ingredient in a materialist theory of language is to separate meaning and reference. In the idealist tradition, you know what the referent of a word is by consulting its meaning. But if you want to know if a piece of yellow

metal in your hand is gold (if it is the referent of the word “gold”) you do not consult your dictionary, you pour a certain acid on the chunk of stuff and if it melts it is gold, if not it’s fool’s gold. What this implies is that reference is linked to nonlinguistic practices involving causal interventions in the world, and not just mental semantic entities.

How does one construct a materialist account of thought? If such a theory is an evolutionary one, isn’t there an incompatibility between an evolutionary epistemology and scientific realism, for the former would guarantee only evolutionary survival and adaptation, not an accurate account of reality in general.  

All that evolution could have done for the brain, in terms of increasing its cognitive powers, is directly related to our hunter-gatherer lifestyles, since we spent hundreds of thousands of years in that state. Agriculture and settled life, by contrast, is at most ten thousand years old. So, clearly, evolution could not have equipped us to think about mathematics, physics, or philosophy. The “deep structure of reality” has been slowly discovered through a social epistemology involving entire communities of practitioners, working over many generations. It is a kind of collective search of possibility spaces, in which some of the abilities that we acquired evolutionarily (many ways of intervening causally in the world) are present at the individual level, but there is also an emergent collective effect that cannot be traced to biological evolution. Besides, once one accepts that genes are not the only entity that can evolve, that anything that is replicated with variation (from words to scientific instruments) has this ability, there is no need to look to biology as the exclusive source of cognitive capacities. I am currently working on a book on the history of chemistry, to provide evidence that chemical knowledge was produced mostly through a social or collective epistemology.

So you think that the “structure of possibility spaces” (and, in particular, a collective exploration of such possibility spaces) can answer the question of how human thought—the cognition of a particular organism, the evolution of which is contingently determined—could transcend its contingent particularity in order to capture the way the world really is (and not just the way it is for this particular organism)?

Let me preface my answer with a few general remarks. First, in order for the properties that characterize mind-independent entities not to be transcendent (as in Aristotle) they must be viewed as emergent. An emergent property is a

---

6 For an elaboration of this point, see Ray Brassier’s comments in “Speculative Realism,” *Collapse* 3 (November 2007): 311–12.
property of a whole that arises from the interaction between its component parts. If the parts cease to interact, the whole’s properties cease to exist, hence they are contingent on (and immanent to) those interactions. In addition, emergence blocks reductionism: if the properties of a molecule cannot be reduced to those of its component atoms, then chemistry cannot be reduced to physics. And for similar reasons, biology cannot be reduced to chemistry, psychology to biology, sociology to psychology, and so on. This already ensures that the world is open ended, because we can’t tell in advance what will emerge from future interactions. Furthermore, in addition to properties, mind-independent entities are characterized by their capacities to affect and be affected (what Deleuze calls “affects”). A knife may be sharp (a property) but it also has the capacity to cut. The latter, though, is relational, so it must be exercised with something that has the capacity to be cut (cheese or bread, but not a solid block of titanium). This means that capacities are even more open ended, since the pairs that interact cannot be listed in advance: a knife has the capacity to kill when it interacts with a large organism, that is, with an entity with the capacity to be killed. Hence, there is no such thing as “reality as it really is” because reality changes, there are innovations, multiple levels of emergence, and unpredictable capacities to affect and be affected. This is why science has bifurcated into many autonomous fields, and why each field (say, chemistry) has continued to bifurcate into inorganic, organic, physical, and quantum chemistries.

Now, to return to your question. The reason why we need the concept of a possibility space is precisely because of the difference between properties and capacities. Both properties and capacities are real; but while properties are always actual (the knife is either sharp or dull), capacities are only actual when they are being exercised. Most of the time they are only potential (or virtual). So in order to specify the kind of being they possess when not actually exercised, we need the notion of virtuality. Something is virtual if it is real but not actual.

With respect to individual human beings and contingent evolution, the perceptual and cognitive powers that evolution has equipped us with give us direct access to a tiny portion of this open-ended world. We can’t perceive beings that are too small or too large, or becomings that are too slow or too fast. But we can develop instrumentation (microscopes, telescopes, slow motion and stop-motion films) that make those beings and becomings perceivable. We must also perform causal interventions into these beings and becomings in order to discover what their capacities are. In other words, we must intervene to actualize their virtual capacities. And in the process of doing so, we generate new beings and becomings that need separate study: the stuff that chemists research is substances and reactions, but they produce thousands of new substances (and new potential reactions) every year. They will never finish the job of finding out how chemical reality really is. Objectivity is perfectly compatible with a knowledge that is partial, fallible, and contingent.
Philosophers such as Quentin Meillassoux and Ray Brassier have attacked Deleuze for espousing vitalism.\(^7\) For these critics, vitalism is inherently “correlationist,” “humanist,” or “idealist,” insofar as it construes nature in the image of human beings, projecting “life” and perhaps even “thought” (or, as Deleuze puts it, “contemplation”) onto inanimate nature. Is Deleuze (and are you) a vitalist? And, if so, why isn’t this vitalism problematic?

I do not believe that Deleuze espoused any kind of vitalism, at least not if we use the word in the sense in which it was used in the nineteenth century, that is, as the belief that there is special life force that sharply distinguishes the living from the nonliving. Deleuze does use the word, but in relation to things like metals, which is clearly not the same thing. As with many other things that he expresses in his difficult style, the exact point of speaking of a “metallic vitalism” is not immediately clear; but it surely does not imply any kind of life force. Now, being a Humean about subjectivity (that is, rejecting the linguisticality of experience) does allow him (as it allowed Hume) to believe in a continuity between animal and human intelligence, and therefore, to apply terms like “contemplation” to nonhuman entities without any anthropomorphism. On the other hand, replacing the concept of an “eternal law” with that of the structure of a possibility space, allows him to see that organic and inorganic phenomena may share, in some cases, the same structure, the same virtual multiplicity; and it is to these shared multiplicities that he refers to when he uses vitalist terms. The hard philosophical work comes when, as a materialist, one tries to tackle the question of the ontological status of these virtual multiplicities that are shared by both living and nonliving entities: one has to make sure that the dimension these multiplicities form (the plane of immanence) does not become something transcendent. This is tough, but must be done, or else we are stuck with the laws of nature, at least those of us who reject the silly slogan “science is socially constructed.” In *Intensive Science* I tried to lay the foundation for such an immanent account but, no doubt, a lot of work remains to be done.

Graham Harman and other new realist philosophers argue that the world is fundamentally composed of objects. Why is an ontology of objects problematic, and why are “assemblages” better ontological candidates than objects?

I am not sure why Harman wants to stick to objects. I do not deny that objects exist (assemblages are objects), it is just that a full realist ontology must possess objects and events, with a process being a series of events. We need both beings and becomingss,

---

even though one can argue that a being is just a slow becoming and, vice versa, a becoming is just a fast being. Think of the Himalayas, the perfect example of a being that’s been there since humans came around. The object status of the Himalayas consists in being a folded piece of lithosphere, folded under the pressure created by the clash of the tectonic plates on top of which India and Central Asia ride. But, as it happens, this clash is still going on (very slowly); some parts of the Tibetan Plateau are still rising a few millimeters a year, so they are still being folded. Hence, the Himalayas are really a very slow becoming. Furthermore, if objects are characterized both by emergent properties and capacities, then we need events to account for the interactions between parts that give rise to properties, and for the exercise of their capacities. Interacting, cutting, killing, and so on, are all events. All this comes into play when defining the most important notion in a realist ontology: causality. For the idealist, causality is a concept that is as fundamental to organize subjective experience as are the notions of space and time; for the empiricist, causality is the humanly observed constant conjunction between a cause and its effect; for the realist, finally, causality is entirely independent of the observer, being a relation between objective events, a relation in which one event produces another event. Hence, if you impoverish your ontology by including only objects, you deprive yourself of the means to define causality as a productive relation.