**CS:** How would you describe the differences between your ontology and other object-oriented ontologies?

**LB:** As we use the term, object-oriented ontology (OOO) refers to any ontological position that affirms the mind-independent existence of substances, entities, or objects. In this regard, ontologies as diverse as Aristotle’s, Gottfried Wilhelm von Leibniz’s, Alfred North Whitehead’s, Jane Bennett’s, Bruno Latour’s, etc., are object-oriented ontologies. Among these ontologies, of course, you have differences and disagreements. Whitehead, for example, holds that actual occasions (his name for substance) are constituted by their relations to other actual occasions and eternal objects. Additionally, he argues that actual occasions are processes. Graham Harman’s object-oriented philosophy (OOP), by contrast, argues that objects are withdrawn from their relations and possess abiding essences. There is thus a debate here in object-oriented ontology as to what a substance is.

In the past I referred to my ontology as “onticology,” while these days I refer to it as machine-oriented ontology (MOO). I argue that every entity or substance is a machine. Machines are defined by their operations or powers (capacities). Following Ian Bogost, I define an operation as an activity that takes one or more inputs and performs a transformation on it, producing an output. For example, in photosynthesis a tree takes sunlight, water, and carbon dioxide, performs operations on these materials, and produces outputs in the form of cells, energy, oxygen, etc. Similarly, a corporation takes flows of matter and, through operations of labor and signs, produces commodities as outputs. When we approach beings in a machine-oriented framework we investigate
entities in terms of the operations of which they are capable, their powers or capacities, rather than in terms of the qualities or properties they possess.

With Harman’s OOP, I argue that machines are independent of their relations. Machines can always be severed from their inputs (relations) produced by other machines, and can enter into new relations with other inputs. This, of course, can lead to the destruction of a machine (as in the case of a frog being severed from the input of oxygen). However, with Whitehead I argue that all machines are processes. Not only are machines processes in the sense that they transform inputs producing outputs, but they are processes also in the sense that they must perpetually engage in operations to continue existing across time. My body, for example, must engage in all sorts of metabolic processes to replenish the cells that compose it and that die from moment to moment to continue existing. Likewise, as Marx taught us, capitalism only exists as a process. As Marx showed, value is not a property of money and commodities, but is an effect of operations of production and exchange. If those operations or processes cease, value ceases to exist. This is why the Bush administration encouraged everyone to go shopping following 9/11. They understood that if consumption or exchange ceased following the terrorist attacks, capitalism would also cease to exist. Capitalism can only exist as a machine if it engages in these operations of production, distribution, and consumption.

Insofar as machines are processes, we can also call them events. They are events in the sense that they are happenings or occurrences that have a duration or that continue for a certain period of time. A capybara’s body will only exist for as long as it is able to continue its operations. Likewise, the feudalist-machine was only able to exist so long as it continued its operations. The being of a machine is not a static substance, brute unchanging matter like Lucretius’s atoms, but rather only exists in its activities or processes. Where those processes or operations cease, the machine ceases and falls apart.

**CS:** Bruno Latour claims that there is no information, only transformation. How would you comment on this?

**LB:** With Latour and the autopoietic systems theorists—especially the autopoietic system theory of Niklas Luhmann—I reject the thesis that information is something that is “out there” in the world waiting to be found. Information is always information for
a machine or system ("machine," "system," "object," "substance," and "process" are all synonyms for me). For example, the sound-waves that constitute a linguistic message do not have information as a property of their being. Sound-waves, of course, are real material entities, it’s just that the information is nowhere to be found in the sound-wave. Proof of this is found in the fact that no matter how much I talk to a rock, the rock remains unaffected by my speech. It is only when a perturbation like a sound-wave interacts with a particular machine that it takes on informational value. It is thus the machine that constitutes the perturbation (in this case, sound-waves) as information, not the perturbation itself.

In passing through a machine as an input, perturbations undergo transformations determined by the internal structure of the machine carrying out the operations on the perturbation. Let’s take the example of communication with an insurance-company. In the United States, insurance-companies are private, for-profit, businesses, rather than government services. This has important consequences for healthcare. When a U.S. citizen fills out a form requesting medical care, the intention animating their utterance is one pertaining to health. When an insurance-machine, by contrast, receives this message, it is transformed and takes on very different informational value, remote from issues of life and death, health and sickness. The form is evaluated by the insurance-machine as a business proposition or investment. The insurance-machine asks itself whether providing care in this case will generate profit or loss, whether it is a good investment, whether it will enhance the value of its stock, etc. As a consequence, it makes its decisions not based on the health or sickness of the person submitting the request, but in terms of economic profit. The message here has become something entirely different.

Information is always a transformation of inputs. Flowers translate sunlight into something else. Crystals transform minerals into something else. People translate utterances from others into something else. But this isn’t all. Machines are only selectively open to inputs. They don’t have access to all inputs in the world. Bees, for example, can see ultra-violate electro-magnetic waves or light, whereas humans cannot. For this reason, bees are able to see patterns in flowers and give them informational value, whereas we are not; without the assistance of technologies, anyway. The case is the same with insurance-machines. Insurance-machines structure the world about them in terms of a set of categories that can appear on an insurance form. Suppose you’re
suffering from an unknown disease. You are, in reality, sick. But since this disease is unknown, since it is not a category that appears on these forms, you are invisible to the insurance-machine in the same way that the ultra-violet patterns of flowers are invisible to us.

These features of information have important implications for political engagement. To engage a machine effectively at the political level, we need to know the “language” that the machine is capable of “speaking” and “hearing.” This is not for the sake of persuading the machine. Rather, if we are to have real effects on machines, we need to know what sort of inputs they are open to. This is why, for example, strikes have historically been successful in combating corporate machines, whereas protests that speak the language of justice and rights have little effect on corporate machines. A strike understands that a corporate machine is organized around profit and loss. In shutting down productive operations of, say, a factory, it halts the capacity for the factory to produce profit and thereby forces the factory to make concessions. By contrast, talk of justice and rights is a language that a factory can’t even hear and that it merely counts as noise.

CS: The object’s virtual potentiality exceeds its local manifestation. Therefore, an object is capable of more than what it manifests. Do the powers of an object change over time? Does this affect its manifestation?

LB: The virtual proper being of a machine refers to its powers or those things of which it is capable; its potentials. These powers are “virtual” for two reasons. First, they are virtual because they can exist in a machine without being exercised. A match, for example, has the power to burn, even when it isn’t lit. Second, they are virtual in the sense that they can always be exercised in more ways than they happen to be exercised in any particular circumstance. Right now the skin on my arm is prickled because the room I’m writing in is cold. Under different circumstances it would be swollen, such as when it’s very hot. The local manifestations, by contrast, refer to the outputs of an operation under particular circumstances. The prickling of my skin is a local manifestation. The red and yellow leaves of a tree in the fall are a local manifestation.

The powers or virtual proper being of an entity can indeed change as a result of operations that take place within an entity, as well as encounters with other entities. Take the example of a
change in diet. Changes in diet can affect us in a variety of ways, ranging from how our skin and hair cells are produced, to how efficiently we metabolize food, to the nature of our moods and cognition. Similarly, if a tree contracts a disease, its ability to produce leaves and bark will change. Learning is yet another example of a change in powers. When a person undergoes psycho-analytic training, for example, they hear and witness differently. A bundled action no longer registers as being merely an unfortunate incident, but rather as a manifestation and satisfaction of a repressed desire. Likewise, if a rubber band is stretched repeatedly it gradually loses its elasticity.

Consequently, the powers or virtual proper being of an entity are variable over the life or existence of that entity. Entities can gain and lose powers, and the ability to exercise a power can wax and wane. For example, our power to engage in cognition wanes when we are fatigued or tired. With every gain or loss of powers, and every waxing or waning of powers, there is a change in the local manifestations of which a being is capable. If I learn to play piano, for example, I have gained a new power that can locally manifest itself in the form of the songs that I can play. If I am freezing and therefore shivering, this power of playing piano wanes and I am not able to locally manifest songs on the piano as effectively as when I play under optimal conditions.

**CS:** Can objects exhibit infinite manifestations? Is every manifestation unique?

**LB:** I leave open the question of whether every object is capable of infinitely diverse local manifestations, while nonetheless holding that all machines are capable of a wide variety of local manifestations. The first important point is that machines cannot locally manifest themselves in all possible ways. Stones cannot locally manifest themselves in the way that wood is. Water cannot locally manifest itself in the way that hydrogen can. With that said, stones, wood, H₂O, and hydrogen can locally manifest themselves in a variety of ways. Take the example of an emerald. That emerald will locally manifest color in a variety of ways depending on the sort of light it encounters. It will now be brilliant green, now the color of dark moss, now black, now dancing with a variety of different shades of green. All of this is a function of the way in which the emerald enters into couplings or relations with other machines—here photons of light or electro-magnetic waves—that function as inputs for its operations producing out-
puts in the form of local manifestations.

I think that some local manifestations are “generic,” while others are unique. An operation is generic when it can be repeated in the same way under similar circumstances at different times. The emerald will produce a particular shade of green on multiple occasions so long as it is exposed to the same wavelength of light. Here the local manifestations are repeatable and the inputs do not appear to change the powers of the emerald. A local manifestation is unique when it occurs only under a singular set of circumstances, is irreversible, and cannot be repeated. The way a tree grows, is of the order of uniqueness. The nutrients and light that it encounters, the other plants growing in the region, as well as the weather conditions in which it grows produce an absolutely unique set of local manifestations at the level of its shape, the configuration of its bark, the robustness of its leaves and fruit, etc., that cannot be repeated. Were a tree with identical genetic stock grown in the same location, that tree would nonetheless have different characteristics or local manifestations as the circumstances of its development would be different.

CS: If local manifestations aren’t identical how we can speak for common properties?

LB: The powers of a machine can be largely identical, while the local manifestations can be different. For example, two emeralds can have the same powers or virtual proper being, while they locally manifest themselves in different ways as a consequence of the different lighting conditions in which they exist. It always depends on what kind of machine we’re talking about. An incorporeal machine like the Pythagorean Theorem will always be identical and will produce identical local manifestations given identical inputs. Living entities, by contrast, will only have similarity without identity because even where their genomes are the same, the environment modifies how these machines develop or unfold.

CS: How would you react to the following statement: We fight for a society where there is no identity, but what we are is what we do.

LB: This is a difficult question. In a sense, any social-machine is an identity forming machine. A culture, for example, is a machine that functions to form human minds and bodies with shared
characteristics in the form of beliefs, patterns of activity, commitments, etc. Similarly, an educational-machine aims to structure human dispositions of thought along the lines of a shared episteme. I think the absolute absence of similarity would lead to a pretty intolerable life. Imagine, for example, what it would be like to drive on a busy highway without any shared dispositions of movement, where turn signals could just as easily signify that one was turning or not turning and where people could drive in lanes however they like. We need collective habits. The ability to anticipate certain regularities in the behavior of other people allows us to navigate the world about us and also frees up our cognitive powers for other things. Habits are as much liberating as constraining.

The important thing, I think, is to recognize that no machine is ever able to completely integrate another machine. When a social-machine strives to form human bodies and minds, there’s nonetheless always a remainder of these bodies and minds that escapes integration. This is the excess of objet a that Lacan talked about with respect to the relationship between our bodies and the signifier. Something always slips away. This is why totalitarianisms and party politics always generate such sad passions. These systems dream of complete subordination to the party or the totalitarian regime without remainder. Yet the remainder always persists and reappears. The dream of total control always fails. As a consequence, these machines become paranoid. Because they refuse to recognize that total control is impossible, they instead conclude that they’re beset by enemies within and without. They then set about demanding purity pledges, engaging in purges, persecuting what they perceive as double agents, and seeking to eradicate enemies from the outside that they see as a threat to their machine. What is needed is political-machines that are plastic enough not to fall into this sort of paranoia and the persecution it generates.