Levi R. Bryant. *Onto-Cartography: An Ontology of Machines and Media.* Edinburgh University Press 2014. 312 pp. $130.00 USD (Hardcover ISBN 9780748679966); $39.95 USD (Paperback ISBN 9780748679973).

Levi Bryant characterizes himself as a fervent convert who has recently 'awoken from [the] dogmatic slumbers' of historical materialism to produce an anti-humanist political philosophy that dispenses with the 'discursivism' and anthropocentrism that has dominated Western philosophy for far too long (4). He has sought to displace the prevailing assumptions of cultural studies and critical theory by crafting a materialist metaphysics that decentralizes humanity and proposes a practice—onto-cartography—that demonstrates how the natural environment shapes our social relations. This new ontological framework, he argues, will allow us to develop more effective strategies for the establishment of justice.

The practice of onto-cartography presupposes what Bryant calls a machine-oriented ontology. Bryant proposes that 'all beings', 'all entities, things, or objects are machines' (18, 23). According to this model, being consists entirely of machines 'at a variety of different levels of scale', from galaxies and social institutions to subatomic particles (6). He broadly defines a machine as any system of operations that takes on inputs and transforms them to produce outputs. So, for example, a tree is a machine that absorbs sunlight and carbon dioxide and, through the process of photosynthesis, operates on those inputs to produce oxygen, its output. Moreover, all machines are enmeshed in a fabric of assemblages or a network of machines. An assemblage is a system of relations between 'coupled' machines in which particular machinic nodes shape the functioning and development of other machines within the field of relations. For example, a human machine is dependent upon the output of trees, which it requires as a necessary input. Being, then, consists of a network of machines that are interrelated and thereby function as media for the becoming of other machines. It is in this sense that, for Bryant, being is an ecology of machines.

Just as astronomical objects of great mass bend the fabric of space-time and thus cause a gravitational effect that determines the movement and development of surrounding bodies, certain machines within an assemblage exhibit a kind of 'gravity' that shapes the movement and development of other machines within the field of relations. Onto-cartography is the practice of mapping the relations between machines to determine how these assemblages generate mediating gravitational fields that structure the movement, development, or becoming of which machines are capable. That is, it investigates how machines are 'structurally coupled' in such a way as to modify and influence one another. The practice of onto-cartography is, however, an ontological means to a social-political end. Bryant argues that we must first map the 'gravitational relations' that exist between machines to 'determine why entities move and become as they do' so that we can develop more effective strategies to 'intervene in those assemblages that we find destructive and oppressive' in order to 'produce more just, equitable, sustainable, and satisfying assemblages or ecologies' (197, 11). Ultimately, then, 'the aims of onto-cartography are political and ethical' (7).

To a certain extent, Bryant buries the lede; he develops his 'machinic ontology' in order to offer a post-human/ist social theory that can supersede the tradition of continental critical theory and cultural studies, which he regards as too anthropocentric (38). By demonstrating that being consists of an ecology of machines, Bryant aims to show how non-human agencies shape human action and

social relations. He argues that the hegemony of critical theory and cultural studies has led us to unduly focus on the way semiotics, discourse, beliefs, ideology, power, economy, and culture organize our social relations, causing us to overlook how non-human agencies contribute to the construction of those relations. For example, by introducing the concept of gravity and the manner in which non-human machines influence the development of humans in machinic assemblages, Bryant hopes to displace our focus on humanistic terms like power, thereby achieving a paradigmatic shift in our thinking akin to the shift from a Newtonian physics of force to an Einsteinian conception of the gravitational curvature of space-time. For Bryant, in order to fully understand the formation of our social relations and thus be capable of effectively intervening in those relations to create a more just society, we must properly take into account 'the role played by non-human agencies in constructing those assemblages' (253).

This paradigm shift requires the elimination of two binary distinctions that have been fundamental to the continental tradition and to Western thought generally: the nature/culture distinction, and that of subject/object. The Western tradition has been predicated on the notion that civilization is, by definition, that which is distinct from nature; culture and society are the product of humanity's ability to control or supress nature. However, according to Bryant's model, where being consists entirely of ecological assemblages of human and non-human machines, culture and society cease to be distinct from nature. He argues that 'culture is not something outside of nature' but is rather 'a formation of nature' (253, 255). If, as Bryant proposes, societies are ecosystems, assemblages composed of both human and non-human machines, then we must grant that humans and their social relations are largely determined by non-human agents in the natural world, a domain we have erroneously regarded as distinct from culture. For Bryant, cultural studies and social-political philosophy have reached an impasse because these traditions have remained beholden to this false distinction. To overcome this impasse, and thus create more effective modes of intervention, we must develop a 'cyborg politics' in place of our anthropocentric, humanistic politics (92). To do this, we must begin from 'the premise that the minimal units of societies are not humans' but machinic assemblages (92).

Moreover, Bryant contends that fellow new materialists who advance object-oriented ontologies are, like others working in the continental tradition, still 'too mired in human exceptionalism' insofar as the category of the object presupposes and sets itself against human subjects (285). His machine-oriented ontology, on the other hand, eliminates or at best conflates categories of subject and object through the concept of 'distributive agency' which posits that objects possess agency and that humans often lack the agentive subjecthood they are ascribed, possessing instead the status typically assigned to objects. Bryant's system is a 'flat ontology' that places human and non-human machines on an equal ontological footing. This, he argues, functions to replace the 'vertical ontologies' that have dominated critical theory and cultural studies, where 'master-terms' like God, capitalism, and patriarchy have erroneously been regarded as transcendent, sovereign agencies that 'overcode' and condition all of our social relations. Onto-cartography is, instead, a sociology of machinic associations that takes into account the role played by both human and non-human agents in the construction of our social order and can thus offer us more effective means of intervention to create a more just and ethical society.

Bryant's prose is an exemplar of the lucidity and casual eloquence that has become the hallmark of the New Materialism. Though his work is clearly the offspring of postwar European philos-

ophy, it is unburdened by the obscurantism that characterized that tradition. He has developed a metaphysical framework that is remarkably comprehensive, coherent, consistent, and elegant. Bryant adeptly draws from a variety of disciplines to offer a novel account of our social development that eschews anthropocentrism to show how the environment shapes human relations. Though he remains largely unmentioned, Bryant is clearly building from the ecological, cartographic, and machinic pre-occupations of Guattari's late work, but in a dialectical manner that attempts to conceive of an oppositional, liberatory political philosophy that begins not from subjectivity, but from the object. One particularly praiseworthy contribution is his concept of the 'negentropic practices' that sustain social systems. This is a promising alternative to the notions of ideology and modes of reproduction that have predominated in a social-political philosophy that has, as Bryant contends, reached some-thing of an impasse. In all, Bryant's book is a compelling, creative, compulsively readable, and erudite work by one of the leading lights of contemporary philosophy. However, his boldly crafted system entails some significant problems.

Despite his attempt to create a novel system that would supersede it, Bryant insists that we must retain much of the leftist tradition of critical continental philosophy. However, his system is absolutely antithetical to the foundational principles of that tradition. They are entirely incompatible. Bryant invokes Feuerbach and Lukács' insights into the nature of reification, gesturing toward his desire to incorporate them into his concept of distributive agency, and yet, like every other vitalist among the new materialists, his entire metaphysical outlook is predicated upon reification. Vitalists of this sort—Jane Bennett and her many acolytes come to mind—have either attempted to skirt the problem altogether, offering no counterarguments to refute charges of reification, or to refute reifi-cation as a problem, or they have halfheartedly suggested the need to accommodate these concepts. And yet, the vitalism of the new materialists is not only the product of reification, it is a philosophy that makes reification its foundational, first principle. First, we must recall that reification is a spec-ulary transposition that leads us to mistake objects for subjects—investing them with an agency they do not possess—and subjects for objects—divesting them of their agency and humanity, reducing them to mere things. It also entails a process of apotheosis, in which the historically contingent traits of our mundane social milieu are made metaphysical, eternal, natural, and are projected onto our conception of being itself. Bryant's flat, machine-oriented ontology is reification *par excellence*. Bryant invests objects with a spurious agency and autonomy, arguing that subjecthood is merely 'circumstantial', and that 'anything can function as a subject …whether human or non-human' (225). He writes, 'there is no necessity to restrict the category of subject to human beings' (224). Here, every object possess a 'degree of freedom … its own will' (181). Moreover, he objectifies humanity, arguing that 'subjects are quasi-objects' (224). Like all other entities, people are simply machines. Bryant's mechanization of humanity is not simply post-human, it is dehumanizing. Ultimately, Bryant's system represents the culminating apotheosis of the machine, the ontologization of modern technology that began at the dawn of the machine age, a process that has been aptly examined by writers like Mark Seltzer and Anson Rabinbach. Despite his central dictum—'avoid abstractions!'—the machine and the machinic mode of production has been abstracted and projected onto our conception of being itself (257). The machine is no longer the product of human *techne*, but has been transformed into Nature. Rather than being an oppositional, anti-capitalist philosophy, Bryant's ontology elevates Taylorist capitalism to the level of metaphysical necessity. The problem of reifi-cation is not one that originates with Feuerbach's reading of Christianity, Marx's notion of commodity fetishism, or Althusser's theory of ideology, but has been a perennial problem in Western thought that goes as far back as Xenophanes. So far, Bryant and the vitalists associated—at times

reluctantly—with new forms of materialism like speculative realism and object-oriented ontology have yet to offer an adequate refutation of reification and its attendant social-political problems.

While the ethical consequences of mechanizing humanity are dire, the potential ecological benefits of a non-anthropocentric social philosophy are many, and Bryant's efforts are certainly commendable in this regard. However, it is not clear that onto-cartography is truly non-anthropocentric. Again, Bryant claims that 'the aims of onto-cartography are political and ethical', that its 'mappings are undertaken for the sake of intervening' in human society in ways that 'produce better ecologies' which are 'more satisfying', 'just, free, and equitable' (211, 257, 268). The question then becomes, better and more satisfying for whom? On the basis of what criteria? The categories of justice and responsibility that Bryant identifies as the *telos* of his system are entirely humanistic, they are perhaps the most fundamentally humanist categories imaginable. And yet, for Bryant, 'being consists of nature *alone*' (252). But, to speak of justice and responsibility in nature is senseless. These concepts are the product of human culture, concepts that retain no meaning when applied to subatomic mechanics or the violence that defines the relations of flora and fauna. When a blackhole consumes a star, is it unjust? Ultimately, Bryant's emancipatory aims reveal a kind of implicit humanism at the heart of onto-cartography, and his emphasis on social justice demonstrates that his system remains anthropocentric.

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