Digital Tool Thinking: Object Oriented Ontology versus New Materialism

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ABSTRACT

Within contemporary philosophy, two apparently similar movements have gained attention recently, New Materialism and Object Oriented Ontology. Although these movements have quite distinct genealogies, they overlap on one key issue: they are both realist movements that focus on the object. In contrast to much twentieth-century thinking centered on the subject, these two movements address the seemingly overlooked question of the object. In shifting attention away from the anthropocentrism of Humanism, both movements can be seen to subscribe to the broad principles of Posthumanism.

Are these two movements, however, as similar as they first appear? And how might they be seen to differ in their approach to digital design? This paper is an attempt to evaluate and critique the recent strain of Object Oriented Ontology and question its validity. It does so by tracing the differences between OOO and New Materialism, specifically through the work of the neo-Heideggerian philosopher Graham Harman and the post-Deleuzian philosopher Manuel DeLanda, and by focusing on the question of the 'tool' in particular. The paper opens up towards the question of the digital tool, questioning the connection between Object Oriented Ontology and Object Oriented Programming, and introducing the theory of affordances as an alternative to the stylistic logic of 'parametricism' as a way of understanding the impact of digital tools on architectural production.

The paper concludes that we need to recognize the crucial differences between the work of DeLanda and Harman, and that—if nothing else—within progressive digital design circles, we should be cautious of Harman's brand of Object Oriented Ontology, not least because of its heavy reliance on the work of the German philosopher, Martin Heidegger.

INTRODUCTION

In the 1990s, two philosophers emanating from the Deleuzian tradition, Manuel DeLanda and Rosi Braidotti, independently introduced the term New Materialism. It is unclear who used the term first and whether they were referring to the same issues. Since then a number of other thinkers—such as Karen Barad—have followed suit.[1] This paper focuses on DeLanda's version of New Materialism [NM], not least because DeLanda has had such a significant impact on architectural discourse.[2]

Broadly speaking, NM is an attempt to counter the emphasis on not only the subject, but also representation and interpretation in twentieth-century thinking in general, and Postmodernism in particular, by focusing instead on the object, material processes, and expression. It is not that we should discount the previous tradition, in that—from a Deleuzian perspective—representation and process are locked into a mechanism of reciprocal presupposition. Rather it is strategically important to redress the balance and counter the scenographic tendencies of Postmodernism. While NM emerges out of a Deleuzian tradition, precedents can be found in the work of biologist D'Arcy Wentworth Thompson and philosopher Henri Bergson. It challenges not only the linguistic turn in twentieth-century philosophy, but also the Dialectic Materialism of Karl Marx.[3]

From an architectural perspective, it is Deleuze's distinction between the Romanesque and the Gothic spirit that highlights the key difference between Postmodernism and NM. Whereas Postmodernism privileged the Romanesque logic of representation and symbolism, NM focuses on the Gothic logic of process and material performance. (Deleuze and Guattari 1988, 394) Important precursors of NM within an architectural tradition include Antoni Gaudí and Frei Otto, while perhaps Achim Menges best articulates the tradition today.

In 1999, the philosopher Graham Harman coined the term Object Oriented Philosophy in his doctoral dissertation on Martin Heidegger's thinking about tools, *Tool-Being: Elements in a Theory of Objects*. Subsequently, Levi Bryant introduced the term Object Oriented Ontology, which has now been adopted as the name of the movement.

Broadly speaking, Object Oriented Ontology [OOO] seeks to challenge the hegemony of the previously dominant anthropocentric outlook—traceable back to Immanuel Kant—that privileged human beings over objects, and viewed objects primarily through the mind of the subject. The movement has attracted a range of followers—such as Levi Bryant, whose intellectual formation is indebted largely to the work of Gilles Deleuze—and falls under the umbrella of the somewhat disparate movement of Speculative Realism, which encompasses a broader range of thinkers, including Ray Brassier, Iain Hamilton Grant, and Quentin Meillasssoux. Harman himself has a background in the work of Martin Heidegger, and his current thinking could be described as neo-Heideggerian. The key difference between Harman and Heidegger, is that while Harman adopts the fourfold structure drawn from Heidegger, he does not adopt his "distinction between 'object' (which he uses negatively) and 'thing' (which he uses positively)" (Harman 2011, 5). In short, Harman places a greater emphasis on the "object."

From an architectural perspective, it is perhaps too early to detect any significant impact of OOO, although Harman himself has a number of followers in architectural circles. However, we can trace the antecedents of OOO in architectural thinkers from the phenomenological tradition, such as Alberto Pérez-Gómez, Steven Holl, Dalibor Vesely, Juhani Pallasmaa and Christian Norberg-Schulz.

Significantly, Harman sees overlaps between his thinking and that of DeLanda, although the sentiment is not necessarily reciprocated[4] (Harman 2011, 170).

TOOL THINKING

Given that Harman's doctoral thesis was an attempt to elucidate and explain Heidegger's thinking on tools, it could be assumed that Harman himself buys into the basic principles of Heidegger's approach to tools. It therefore makes sense to introduce Harman's position by outlining Heidegger's thinking on tools.

In his famous early analysis of tools, Heidegger makes a distinction between 'ready-to-hand' and 'present-at-hand'. (Heidegger 1962). As Harman puts it, "[Heidegger's] famous tool analysis in Being in Time shows that our usual way of dealing with things is not observing them as present-at-hand (*vorhanden*) in consciousness, but silently relying on them as ready-to-hand (*zuhanden*)" (Harman 2010, 36). Jonathan Hale provides a helpful summary of this distinction:

> Heidegger's now famous example describes how a piece of equipment like a hammer can be approached in two distinct

> ways: we can either pick it up and use it, or we can contemplate it from a distance. When we pick up the hammer and use it, it becomes what Heidegger calls 'ready-to-hand,' the hammer is ready to be put to work, assuming we know how to wield it. In the second case, what Heidegger calls 'present-at-hand,' we simply stare at the hammer as an object, trying to make sense of it by some kind of intellectual analysis. In this case Heidegger claims that we never uncover the true being of the hammer as a tool, we are simply confronted with a curious lump of inert physical stuff. (Hale 2013)

As Hale astutely points out, however, there are problems with Heidegger's overly binary analysis. In short, it seems very 'black and white'. The tool is either 'ready-to-hand' or 'present-to-hand,' and there appears to be no space in between. What is clearly lacking in this account is our gradual proprioception of tools over time. For a subtler understanding of how we come to accommodate the tool, and 'think through' it in an unselfconscious way through use so that it gradually becomes a prosthesis to the motility of the body, we should perhaps turn to Maurice Merleau-Ponty, who, as Hale notes, "describes the tool becoming incorporated (literally) into an extended 'body-schema', as a kind of prosthetic bodily extension that allows me to experience the world through it" (Hale 2013).

This problem is repeated on a larger scale in Heidegger's approach to technology in general, articulated most explicitly in his essay, "The Question Concerning Technology."[5] Here, Heidegger draws upon the notion of 'standing–reserve' that seemingly echoes the notion of 'present-at-hand' used in the context of tools: "Everywhere everything is ordered to stand by, to be immediately on hand, indeed to stand there just so that it may be on call for a further ordering. Whatever is ordered about in this way has its own standing. We call is the standing-reserve [*Bestand*]" (Heidegger 1993, 322). And it is this sense of 'standing-reserve' that lies at the heart of modern technology: "The essence of modern technology shows itself in what we call Enframing… It is the way in which the real reveals itself as standing-reserve' (Heidegger 1993, 328–329). The problem is not so much of nature being devalued as standing-reserve, but humankind finding itself in the same condition: "As soon as what is concealed no longer concerns man even as object, but exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve" (Heidegger 1993, 332).

Heidegger illustrates his notion of 'standing-reserve' with the example of an airliner. The airliner on the runway, for Heidegger, "stands on the taxi strip only as standing-reserve, inasmuch as it is ordered to insure the possibility of transportation" (Heidegger 1993, 322). The problem here is that the airliner disappears into the abjection of its 'standing reserve' (Heidegger, 1993: 324). The possibility that the airliner might be appropriated and become part of our horizon of consciousness is not entertained.

By contrast, German philosopher Theodor Adorno—an outspoken critic of Heidegger in his book, *The Jargon of Authenticity* (1973), and elsewhere—refers to the airliner as an object, much like a tool in Merleau-Ponty's terms, that can be appropriated: "According to Freud, symbolic intention quickly allies itself to technical forms, like the airplane, and according to contemporary American research in mass psychology, even to the car" (Adorno 1997, 10).

What Heidegger fails to address, then, is the progressive way that we come to appropriate technology in general, and tools in particular, and absorb them within our horizon of consciousness. It is the difference between Heidegger's decidedly static notion of 'Being'—or indeed the 'being of Being'—and Deleuze and Guattari's more fluid, dynamic concept of 'becoming.' This contrast could be extended into their understanding of the 'machine,' which—for Deleuze and Guattari—is far more than merely a piece of mechanistic technology. Whereas for Heidegger, technology is perceived as antithetical to what it is to be human, Deleuze and Guattari celebrate a more empathetic relationship between humans and technology. As John Marks observes, "Everything is a machine, and everywhere there is production. For Deleuze and Guattari, the machine is not a metaphor; reality is literally 'machinic'. The concept of the machinic is set against the traditional opposition between vitalism and

mechanism. . . In short, there is no difference between categories of living and the machine" (Marks 1998, 98). Importantly for Deleuze and Guattari, the machinic is also associated with desire: "A direct link is perceived between the machine and desire, the machine passes into the heart of desire, the machine is desiring and desired, machined" (Deleuze and Guattari 1983, 285).

This difference extends into the equally problematic distinction between Heidegger's somewhat instrumental approach to technology and the more poetic approach that he refers to as *techné*, that echoes the distinction that he makes between 'authenticity' and 'inauthenticity.' On what authority does Heidegger make these distinctions? What is 'inauthentic' for some can easily be 'authentic' for others. In short, we must move away from Heidegger's universalizing claims to 'truth' – as though in our postmodern world we could claim that there could be any universalizing, singular 'truth'– just as we need to move away from Heidegger's homogeneous view of the world towards a more open-minded Deleuzian understanding of multiplicities. As Guattari comments on the subject of technology: "Far from apprehending a univocal truth of Being through *techné*, as Heideggerian ontology would have it, it is a plurality of beings as machines that give themselves to us once we acquire the pathic or cartographic means of access to them" (Guattari 1993, 26).

DeLanda, by contrast, finds Merleau-Ponty more useful in understanding our relationship with tools, and is also sympathetic to J. Gibson, whose concept of 'invariance' forms a central part of his thesis in *Intensive Science, Virtual Philosophy* (DeLanda 2002). For DeLanda, invariances are transmitted by structured light and inform the organism about the 'affordances' of objects and tools, which opens up an entirely different way of thinking about tools. Let us turn, then, to Gibson's 'theory of affordances.'[6] This theory suggests that there is a particular set of actions 'afforded' by a tool or object. Thus a knob might afford pulling—or possibly pushing—while a cord might afford pulling. It is not that the tool or object has agency as such, or the capacity to 'invite' or 'prevent' certain actions. Rather, it merely 'affords' certain operations that it is incumbent on the user to recognize, dependent on pre-existing associations with that tool or object. Likewise, those operations are also dependent upon our capacity to undertake them. Thus certain operations might not be afforded to those without the height or strength to perform them. Moreover, certain tools afford certain operations, but do not preclude others. For example, we could affix a nail with a screwdriver—albeit less efficiently—if we do not have a hammer at hand. Similarly, it is easier to cut wood with a saw than a hammer.

In his own discussion of tools, however, DeLanda refers not to 'affordances' so much as to 'capacities,' whereby the 'virtual'—in the Deleuzian sense—has the capacity to become 'actual' through use:

> The causal capacity of the knife to cut is not necessarily actual if the knife is not actually being used. In fact, the capacity to cut may never be actual if the knife is never used. And when that capacity is actualized it is always as a double event: to cut—to be cut. In other words, when a knife exercises its capacity to be cut it is interacting with a different entity that has the capacity to be cut. This implies a realist commitment not only to the mind-independence of actual properties but also of causal capacities that are real but not necessarily actual. (DeLanda 2011, 385)

DeLanda offers a further gloss: "Although there are many species that use tools (crows, chimps, even insects) we humans certainly excel at inventing new ones. But to conceive of tools as autonomous we need to redefine mind-independence because tools would not exist if human minds did not exist. Hence, the expression should signify independence from the content of our minds, not from their existence" (DeLanda and Harman, 2016).

This highlights a crucial difference between the two, in that Harman still clings to the notion that the world is dependent on our minds, whereas for DeLanda the world exists independently of our minds. Another important difference is that Harman—following Heidegger—believes in essences, whereas DeLanda—along with the entire poststructuralist tradition—is highly critical of essences (Harman 2009b, 204–206; DeLanda 2002, 9–10). In short, despite the initial appearances, Harman and DeLanda are clearly at odds, and are caught between the basic differences between OOO and NM.

DIGITAL TOOL THINKING

Why then are some architects so fascinated by OOO? In part, it might be because architects design 'objects.' At first sight, there also appears to be a connection between Object Oriented Ontology and Object Oriented Programming. However, this connection is highly problematic. Ian Bogost, for example, who is both a philosopher and a game designer, explicitly distances himself from the term 'object' precisely because of the confusion that the apparent similarity of names might cause, and uses the term 'unit' instead:

> Then and since, I've been secretly bothered by "object-oriented philosophy" (the name, not the idea). I was reminded of this concern when I saw that Harman had shorthanded his term with the acronym OOP, one also commonly used to refer to the programming paradigm. My worry arose not from the perception that Harman had absconded with the appellation without giving it proper credit (he has never to my knowledge noted the similarity of the terms in his writing, although I know he is aware of it) but because I feared the sense of "object-oriented" native to computer science didn't mesh well with that of speculative realism. (Bogost 2009)[7]

In the end, however, there would appear to be little difference between 'tools' and 'digital tools.' They are all ultimately 'tools,' and instructions given to a construction laborer are not so dissimilar to code inputted in computational operations. Both are 'algorithms.' The theory of affordances can therefore also be applied to digital tools to refer to the progressive instantiation of certain operations that eventually become hegemonic. An obvious example would be the progressive adoption of curvilinear forms within architectural design. Rather than subscribing to Patrik Schumacher's controversial theory of 'parametricism' as a new style, we might gain a better understanding of the growing popularity of curvilinear forms through the theory of affordances (Schumacher 2009). In the days of the parallel motion, it was very easy to draw straight lines, and also possible to draw curved lines using 'French curves.' However, there was no way to define the precise nature of the curves drawn, let alone to reproduce them. With the advent of the computer, however, it became possible to define the curve very precisely. Not only that, but when simulating the bottom up logic of multi-agent systems, it is actually difficult to generate a straight line. As these new operations afforded by the computer are repeated, they become the norm. Thus, although some regard curvilinear forms as a style, they are more likely the result of the 'emergence' of certain practices based on the affordances of the digital tools deployed.

FORGET HEIDEGGER

The main problem with Harman's neo-Heideggerian version of OOO is that it returns us to some of the key debates between advocates of Poststructuralism and Phenomenology during the 1990s. The challenge, however, is that much depends on the starting point adopted, in that Poststructuralism and Phenomenology seem to be fundamentally incommensurable. Either we buy into a Phenomenological position of collapsing the subject into the object and therefore assume that we are all at one with culture—and therefore have no problem understanding culture—or we adopt a more skeptical Poststructuralist position that always offers an epistemological check and constantly problematizes the relationship between subject and object. It is simply a question of position taking.

One key problem for Poststructuralists is that Phenomenologists are often guilty of ascribing 'agency' to the object. This returns with a vengeance if we consider the controversial Actor Network Theory [ANT] of Bruno Latour, an influence on OOO. ANT assumes that objects 'act' in social networks. Latour himself uses the example of a door-closer 'on strike' to illustrate his point (Latour 1988). However, the most well known architectural example of ascribing agency to objects is perhaps Louis Kahn asking a brick what it wants to do, as though the brick has the capacity to think and speak.[8] This—for the Poststructuralist—is simply a question of ventriloquism, of projecting onto the object a form of anthropomorphic agency. Of course, there is always a natural tendency to think in this way. Many of us give our cars names, and perhaps even speak to them. And, as Lacan has observed, there is a 'primordial anthropomorphism' that underpins knowledge, and he therefore questions "whether all knowledge is not originally knowledge of a person before being knowledge of an object, and even whether the knowledge of an object is not, for humanity, a secondary acquisition" (Lacan 1975,

392). However, from a Poststructuralist viewpoint, the problem is that we end up 'appropriating' the object—be it door-closer or brick—as though we understand it. Jacques Derrida has offered a powerful critique of the potential relativism of phenomenological hermeneutics in his analysis of Heidegger's interpretation of a painting of shoes by Van Gogh (Derrida 1987).

There are further problems with Heidegger. For example, we should not forget his disturbing anti-Semitism and affiliation with the National Socialists—for which Heidegger never apologized—issues foregrounded following the publication of his 'Black Notebooks' (Farías 1989; Wolin). While the question of whether this should disqualify Heidegger's philosophy remains unclear, it is possible to see connections between his right wing political agenda and conservative philosophical agenda. There is a 'dark side' to his 'philosophy of the soil,' which can lead inexorably to a disturbing celebration of the *heimat* and the homeland (Leach 1999).

Nor should we overlook the issue of 'forgetting' that is central to Heideggerian philosophy. As Jean-François Lyotard points out, the crime in Heidegger is the *forgetting*—and the *forgetting* of the *forgetting*—that leads him to conveniently overlook his involvement in National Socialism (Lyotard 1990). However, the real problem in accepting Harman's seemingly uncritical acceptance of Heidegger is that we too end up forgetting the very powerful critiques of Heidegger by Derrida, Lyotard, Deleuze, Guattari, and others, alongside the clearly unpalatable politics to which Heidegger ascribed. Several years ago, calls were made within the architectural community to forget Heidegger (Leach 2006). His thought was seen to be overly conservative, essentializing, anti-technological, and out of touch with contemporary concerns, such as capitalism and global warming.

OH, OH, OH, NO!

OOO has become something of a trendy movement in some design circles, and has even been linked—erroneously—to digital design thinking. Given that DeLanda, as a former programmer, has far greater command of digital thinking, and exerted much greater influence on architectural culture, it is surprising that Harman is even taken into consideration.

With Harman we have a highly Postmodern rebranding of a relatively unreconstructed version of Heidegger's thinking, complete with appropriately trendy Postmodern acronyms—OOO and so on. It is as though the previous sixty years of sustained critique has been *forgotten* and Heidegger—like some Teflon-coated politician—has effectively escaped to re-emerge as some post-apocalyptic figure rising from the dead. Not only that, but Harman has even been linked to the domain of digital computation. For a thinker who invests so much in a philosopher such as Heidegger, who has such a pejorative view of technology, this seems remarkable.

There are, of course, many other variations of OOO that have not been covered here—variations that do not subscribe to the conservative neo-Heideggerianism of Harman himself—that merit further consideration. But as far as Harman is concerned, especially in terms of digital design, it is surely time to *forget* OOO.

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NOTES

1. For an overview of NM, see Dolphijn; van der Tuin (2012) .
2. DeLanda has taught at Columbia GSAPP, USC, Pratt, UPenn and Princeton.
3. As Leach observes, "New Materialism can be compared and contrasted with the old Historical Materialism of Karl Marx. Famously, Marx had turned Hegelian dialectics 'on its head', and - against Hegel's idealistic theory of the dialectic - had stressed the primacy of the material world. Equally there are echoes of Marxist famous dictum from his Theses on Feuerbach, 'The philosophers have only interpreted the world, in various ways; the point is to change it', in relation to DeLanda's critique of postmodern hermeneutics. There are echoes too of Marx's basic premise that what we see on the surface of cultural phenomena is the product of deeper underlying forces. But New Materialism extends the range of Historical Materialism. For Marx the only form of economic production considered was labour, whereas for New Materialism any cultural expression – social, economic or political – can be understood in terms of the forces that produce it." (Leach 2015).

4. Harman and DeLanda are currently writing on a book about their respective positions. I am grateful to DeLanda for allowing me to view a draft of that book.
5. Heidegger was not opposed to technology as such. But rather he saw in technology a mode of 'revealing', and it was here that the danger lay. "The essence of modern technology," as he puts it, "lies in enframing. Enframing belongs within the destining of revealing" (Heidegger, 1993: 330). And this form of 'revealing' is an impoverished one as it denies the possibility of a deeper ontological engagement: "Above all, enframing conceals that revealing which, in the sense of *poiesis*, lets what presences come forth into appearance" (Heidegger 1993, 332). Rather than opening up to the human it therefore constitutes a form of resistance or challenge to the human, in that it 'blocks' our access to truth: "Enframing blocks the shining-forth and holding sway of truth." (Heidegger 1993, 332).
6. The theory of affordances was introduced by Gibson in an article, "The Theory of Affordances" (Gibson 1977), and later elaborated in *The Ecological Approach to Visual Perception* (Gibson 1979). It was later developed by Eleanor Gibson and Anne Pick (2000).
7. Bogost goes on to list his understanding of the 'object' as used in Object Oriented Programming:

   "To wit, an object in the computational sense:
   - describes a pattern, not a thing
   - exists in stable relation to its properties
   - exists in stable relation to its abilities.
   - has direct access to other objects via their properties and abilities
   - is not a real object (but can be made real, e.g. on magnetic tape or as a series of instructions on a processor stack)
   - always relates to an intentional object (both because it is a designed object and because it strives to embody and enact direct modeling of the world)

   Many—perhaps all—of the aspects above conflict with Harman's understanding of objects and what it means to be oriented toward them." (Bogost 2009)
8. "You say to a brick, 'What do you want, brick?' And brick says to you, 'I like an arch.' And you say to brick, 'Look, I want one, too, but arches are expensive and I can use a concrete lintel.' And then you say: 'What do you think of that, brick?' Brick says: 'I like an arch'" (Wainwright 2013).

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IMAGE CREDITS

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