

The Flat Earth

Object Oriented Ontological
Explorations in Design Praxis

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For all the thingy essences burned and scattered, this is my paean to you.

About an hour's drive northwest of the port city of Karachi lies the world's third largest shipbreaking yard. This is where the world's supertankers run aground to die on the beach, gradually dismantled by the 30,000 or so employees at the graveyard. The scavengers first strip away the rusting outer hulls of the massive ships, exposing the inner chassis to the elements, where the oxygen molecules in the salty sea air react with the iron skeleton, oxidizing and corroding it. Over a month, the once magnificent behemoths have dematerialized into scrap metal, sold by the ship breakers to local factories. Even the men working on reducing these ships change - the fair skin of most of the Afghan workers, under the influence of sunlight, has tanned. Often working without gloves, fingers and hands swell and expose veins. Tiny pieces of metal embed themselves into skin and fuse. In the evenings, under the receding heat of the tropical Karachi sun, dogs fight and mate in the shade of metal giants, as the workers rest on their charpoys, smoking hashish and listening to the sounds of a rubab playing almost seven hundred miles away in the city of Peshawar. The compressed resins of the cannabis plant yield easily to flame, releasing tetrahydrocannabinol into epithelial tissue, filtering into the bloodstream, where it relieves pain, relaxes muscles, and alters perception. Meanwhile, the tankers sit heavily on the shores of the Karachi coastline, where sand grazes their soles and metal flaps chatter and bang in the wind.

All of these interactions can be read in one of many ways. They can be read as atoms and molecules, bundles of elements and qualities engaging and colliding and changing one another. They can be read in terms of the forms they evoke, the great steel tankers slowly disintegrating under both the sharp chisels and pickaxes wielded by precise human agency and the relentless assault of nature. They can be read as discrete, unified entities, like the fighting dogs, unified by a sense of life, by animism and self-organization, or as composite, hybrid, liminal - the disintegrated leaves of the cannabis plant mixed with tiny

shards of tobacco, rolled in paper or foil, turning to ash and smoke and chemicals as they are consumed by fire. They can be read as tangible, different strings being plucked by a roaming finger, vibrating in tune to different harmonic frequencies, or as the intangible notes, sound waves being configured into electrical signals through the devices of a microphone, traveling through high-frequency carrier radio waves across long miles to be reconstituted back into sound.

Yet regardless of how we choose to interpret them, they reveal something fundamental about the nature of our universe: that all entities are always interacting with each other all the time. From electrons dancing around dense, unfathomable nuclei, exchanging paths with other electrons when the atoms they build up bump into other atoms, to the cosmic rotations of star systems, nebulae and even entire galaxies under the influence of strange and invisible forces, at each level, at every step, we see that all things are always affecting, apprehending, and engaged with, each other.

Furthermore, all of these interactions can be read as happening independently of human presence. If you believe in a world that does not live solely within human cognition and experience, then it becomes common sense to assume that all of these interactions occupy a reality independent of ourselves: imagine the lone coconut sprouting under the influence of the sand, surf, and wind on some tropical beach; a branch of wood superheated under an instant bolt of lightning sparking into fire and ash, sparking a conflagration spreading through an entire forest; water staining the wooden plank foundations of a dock house; rays of electrons channeling through a cathode ray tube, colliding with phosphorus to create glowing impressions of an animated Bugs Bunny; the wires and pipes running electrons, water molecules and gas through a house to silently and invisibly keep it alive.

This is a humbling thought, for it acknowledges that we human beings only occupy a small niche in the multifarious complexity of entities existing in the known universe, alongside wallets, bikes, buildings, hand rails, trees, pollen, wolves, oceans, Atari video games, GI. Joe cartoons, volcanoes, asteroids and suns. Suddenly, the world that we inhabit is a world teeming with objects and entities of every form and character, involved with each other in all sorts of relations and interactions: tangible or intangible, natural or artificial, discrete or composite or hybrid, liminal or permanent. Within this pure definition of interaction, any kind of hierarchy privileging the human over the nonhuman, life over nonlife, the large or complex over the small or simple, is eliminated. The world becomes, in an irony of Copernican proportions, flat again.

Abstract

Current critiques of the insufficiency of conventional design practices in tackling massive problems with complex political, ethical and material dimensions often overlook a key assumption underlying the entirety of both design practice and theory: that design is effectively a discipline that deals with relations in both the human and nonhuman realms, but that the lenses that designers use are one-way, entrenched firmly in a human-centric ('correlationist') foundation.

This paper lays out our argument for the need for a non-correlationist description of design praxis and poiesis, that does not distinguish between the human/nonhuman binary, but treats all things on an equal, or 'flat', ontological footing. For this, we turn to the recent speculative realist turn which has sought to challenge correlationism within the humanities, in particular the work of the object-oriented ontological (OOO) philosopher Graham Harman. In Harman, we find a fascinating account of the nature and relations of things in a flat ontology. We propose that an OOO based account of design has interesting implications for reframing current interaction and systems design praxis in two ways: firstly, it reveals how the design process is already constituted as a form of ontological inquiry concerned with understanding thingly essences and manifestations, and secondly, it gives a distinct account of both thing-thing and thing-in-itself relations that, as we demonstrate, opens up new horizons in a general theory of aesthetics, affect, and interaction in design.

I made up my mind...that I would never try to reform man—that's much too difficult. What I would do was to try to modify the environment in such a way as to get man moving in preferred directions.

Buckminster Fuller

Fleeing Anxiety in Design Towards A Concern With Design's Nonhuman Others

In her lecture on identifying the zeitgeist of the current age as being driven by the resurgence of a particular passion, that of fear, Elena Pulcini identifies two particular kinds of fear that play at the heart of our current postmodern, globally interconnected and technologically constituted condition: the fear of the other, identified by an unwillingness to cope with difference, whether racial, gendered, ideological etc., and the fear of the future, exemplified by an unwillingness to confront the ramifications of ever increasing and more frequent risks like climate change, economic crises, population growth, and so on.

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Thus, Elena argues, both fears manifest themselves as a particular form of fear – both the fear of the future and the fear of the other are indeterminate fears, with no specific object: our condition in the 21st century is a condition of anxiety. It is anxiety that, in the Heideggerian sense, frees us to the way humans are vis-à-vis the world – our response to the risk of the unknown is not paralyzing, but manifests in its opposite, in the form of a concern, and it is this concern that turns us towards our own potentiality, and our Being as being 'thrown' into the world alongside all the other entities that occupy it:

"Being-alongside something is concern, because it is defined as a way of Being-in by its basic structure - care...that very potentiality-for-Being for the sake of which Dasein is, has Being-In-The-World as its kind of Being. Thus it implies ontologically a relation to entities within-the-world...in willing, an entity which is understood...gets seized upon, either as something with which one may concern oneself or as something which is brought into its Being by solicitude."

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Being-in-the-world means being-along-with other beings in the world. What of these entities that we inhabit the world alongside, some of which are brought into their Being through our concern?

Many of the entities that inhabit the world we live in today are manifold and of our own making by design, and indeed, it is human concern that makes it possible for designers to populate the world with things that care for us, as Elaine Scarry so eloquently puts forth in *The Body in Pain*: “*The shape of the chair is not the shape of the skeleton, the shape of body weight, nor even the shape of pain-percieved, but the shape of perceived-pain-be-gone.*” This is true not only for artifacts that make our lives more comfortable or meaningful, but also for useful things, as Heidegger points out earlier in *Being and Time*, the ready-to-handedness of tools in use is precisely so because of our concerned intention to accomplish something with that tool. Design, in its creating things that are useful, comfortable and meaningful, makes concern its explicit grounds for intervention within the world, and designers make things that are the subject of, and that exhibit, concern.

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The concerns of design in the current climate of global fear have been molded by a gradual realization that the conditions of fear that we now live in are, in part (and not the least part either) of our own making. The world that we have populated with things, with chairs and elevators and computers and billboards, with signs and objects and systems, is the world that we now found ourselves anxious about with regards to our future. In other words, as Tony Fry puts it: “*the essence of structural unsustainability is ‘us’. That is to say, it is a product of how we are and the way we act (and on) the world.*”

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Thus, the problem that has historically framed critical design discourse is fundamentally an ontological one. In its orientation towards the future, designers, both theorists and practitioners have always grappled with two questions: what do we want to become, and how do we get there?

The human has thus always been at the center of design, and philosophies of what the human can be have often found themselves disseminated into the myriad, and often widely disparate, approaches to contemporary design practice. We find that, for example, an essential definition of the human formulated in design praxis through the revival of classical humanist approaches relying on a grounding in altruism (Stairs, 2005), a return to core principles (Buchanan, 2001), and equal participation (Sanders, 2004) - this is the trend that has dominated mainstream human-centered design practice for the last two decades.

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In contrast to these are the approaches to design of the human grounded in either the scientific, positivist approaches that one finds prevalent in the HCI community, or in the anti-humanist trends grounded in 20th century continental and postmodern traditions in philosophy and science and technology studies

studies that see the human as historically constituted through material means, and address the reconstitutive power of design as a means to move the human towards a more preferable state through material (Verbeek, 2005), critical (Dunne, 2008), and ontologically (Fry, 2008) redirective practices.

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It is in this second set of practices that we find an explicit framing of the human as problematic; as mentioned above, Fry has already identified the source of unsustainable practices that have created an environment in the face of which we have cause to be anxious as ourselves and the way we are - he continues in this vein to point out, in a critique of universal humanist approaches to sustainability, that our politics of practice must become a politics of Being in general, and not just *"a politics of human-designed rights."* In other words, in order to be human, we must first accept that we can only be human in relation to all the other entities inhabiting the world. Yet Fry also acknowledges that we cannot ever be truly non-anthropocentric, since our concern in the world is ultimately a self-directed concern. Thus, our only option, as Fry puts it, is to *"take responsibility for what we are, acknowledging our interdependence as elemental to what the great phenomenologist Merleau Ponty called the 'flesh of the world' and expressing this while enacting the practices of sustainment."*

Fry's argument here is interesting - it hints at, but does not quite embrace in the end, the contours of a kind of concern through design that is not human-centered. In fact, in his latest book, *Becoming Human By Design*, Fry takes his argument further, taking a long, evolutionary view that hypothesizes that man's being human is so through the agency of the material world, through things, and it is through the manipulation of the world that we become who we are: *"as we form and deform the processes of world formation, we are equally transforming what we ourselves are and will become as human beings."* Fry also notes that the dichotomies of man/world exist only insofar as we are subjects within the world, and present day design, as he rightly points out, has always favored the human subject over all others.

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While we agree that the concern of design has to move away from simply acknowledging the nonhuman world as material to be molded, resources to be utilized or equipment to be used, we feel that Fry never really delves into the depths of what a completely "equal", or, as we shall call it, flat, politics of design could be, nor what kind of ontology to rest upon. While we agree that it becomes absolutely necessary that we cannot escape our anthropocentrism, we argue that Fry's instigation opens up an interesting area of investigation: can we can

begin to formulate the general outlines of a different kind of design praxis that encompasses an explanation of both the human and nonhuman? What would it mean for the practice of design to be completely refigured along the lines of an ontology where the central question is not what the definition of the human is, but on the premise that we co-exist equally and interdependently with all manner of things in the world: with the natural world, but also the artificial, with both the material and immaterial?

Towards Flatness: Verbeek & the Bethinging of the Human Condition

We can find an account of nonhuman agency in design in Peter Paul Verbeek's *What Things Do* - his project, as he defines it in the book, is to come up with a philosophy of the designed artifact, exploring the relation between us and the things we make to understand how we can better cope with the problem of sustainability by constructing our relationships with them through a paradigm of attachment rather than disposability. The central thesis of Verbeek's book is that technology always acts as a form of mediator between man and the world - like Fry, Verbeek insists that specific artifacts, operating within a particular set of relations, i.e. a context, allow for particular modes of mediation, allowing us to interact with ourselves and other things in different ways. Therefore, in a mediating role, the designed artifact inhibits, shapes and allows us to be in different ways vis-à-vis the world. Echoing Fry, Verbeek also stresses that the relation between things and humans is a cyclical, interdependent relationship.

The three main philosophers that Verbeek considers: Ihde, Latour, and Borgmann, all concern themselves with a postphenomenological framing of technology, with an eye to how things, and especially designed things, mediate our perception and interaction with the world. In Ihde, he finds that the way artifacts mediate our lived experience may open or inhibit our perceptions of reality, and therefore, our knowledge as well. The optical lens, a product of human design, does not disclose the world in a deterministic manner, as early philosophers of technology including Heidegger maintained, but makes possible pluralist readings of reality depending on whether it is used in a microscope or common spectacles, or whether the person using it has perfect or imperfect vision. What is important to take away from Ihde's reading of artifacts is that while he still analyses them from the lens of how they disclose

the world for humans, he makes it possible for us to see how artifacts, just like humans, live different lives and actively play roles in constructing reality alongside humans. This is something that we will come back to later: the primacy of perception, and the role of artifacts, in constructing reality.

Verbeek then turns to the work of the French sociologist Bruno Latour. Latour, in a rejection of the subject/object, human/world binaries that have informed much of western philosophy, denies that humans, alongside animals, minerals, and all forms of other things, have any form of core defining 'essence'. Instead, reality can be summed up in the sum of the relations that all things have with each other as actants in networks, and things only emerge as distinct entities in relation to all the other actants within networks. For example, the material thing we call an automobile can only exist in a context where gasoline, gas pumps, highways, refineries, factories etc. also exist. Latour lays out his theory of mapping actors and their networks in order in a way that does not distinguish between their characteristics or nature: neither humans, nor human made entities, or natural entities occupy any special privilege in a network. In fact, Latour's genius lies in pointing out how networks of nonhuman entities exact both magnitudes and kinds of actions from humans participating with them in larger programs of action. For example, with regards to the seatbelt : *"The program of action "if a car is moving, then the driver has a seat belt" is enforced. It has become logically - no, sociologically - impossible to drive without wearing the belt...I, plus the belt, plus the car, plus the dozens of engineers, plus the police are making me be moral."* Of course, we could add a dozen other nonhuman/human entities to the list, all of which ensure drivers drive safely: traffic lights, speed bumps, roundabouts, other car drivers...

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Latour's actor-network theory is the first example that we have of a way of understanding the role of the designed artifact that does not subjugate it to being a mere means or end, and in effect, is the first to postulate a grounds for design praxis grounded in an ontology that is flat. However, where we find his theory problematic is that, in denying things with any kind of essence, he denies that actors and entities base their actions on any kind of prehension - what Latour is basically doing is denying that our actions are partly in response to the nature and texture of the content that we encounter in the world. There is nothing in his networks to account for the individuality of particular entities, and nothing to account for the kind of decision making that goes on when entities encounter each other based on their uniqueness. A Latourian program of action, for example, "to make tea without getting tea leaves in the water, the person uses a tea strainer" says nothing about why it is that particular tea strainer that is used in the relation. For design, this is a crucial oversight: designers

are as concerned with content and form as they are with function.

Verbeek is well aware that Latour's ontology is thus insufficient to explain engagement and involvement between entities, and thus he turns to the philosopher Albert Borgmann, to explain not only how it is that technological devices frame the very contexts within which we engage with them.

Borgmann problematizes the pattern of consumerism that underpins liberal democracies today in showing democracy invests people with choice by making available a wide variety of devices that ultimately impoverish our lives rather than enrich them by taking away the effort and time that is required to be put into meaningful activity. Against this tendency of being occupied in mere consumption, Borgmann points to artifacts that he calls 'focal things', which in turn promote 'focal practices' that increase our engagement with the world and each other - he gives the example of the table, around which families and objects can gather to enjoy each other's company, while at the same time the table directs food to be prepared in a manner where care and time are invested into its making, as opposed to a microwaveable instant meal intended to be consumed in front of a television screen.

Verbeek challenges the rather negative reading that Borgmann has of technology and distinguishes between devices that simply take away effort, and devices that enable practices that are meaningful. He gives the example of electric pianos and cd players, which, open up a world of music to people who could otherwise not access it or play it. Verbeek's reading of Borgmann leads him to a set of interesting conclusions in the last chapter of 'What Things Do', where he delves into why it is that particular things engage us through their design. Verbeek distinguishes between the kinds of material mediation made possible through utility, and the kind using signs and symbols, i.e. immaterial things. In particular, he notes that mediation happens not only through function but also aesthetically:

"signs can be treated as means for ends...a coffee pot is a means not only for producing coffee but also exhibiting one's taste.", and later, *"the speed bump and bulky key ring mediate human action materially, while the traffic cards and placards do so as signs."* Verbeek argues that material mediation (and we would argue, symbolic mediation too) happens not only purely on an interpretative but sensual level, through tactility, visual appeal, etc. He fashions this insight into a 'material aesthetics', arguing that in order to design both sustainably and for engagement (in the Borgmannian sense), designers must strive to make things that both involve users in their functioning and engage them through their materiality by being made so that they can be integrated into everyday practice, i.e. what he calls "transparent" objects.

There are many fascinating insights littered throughout *What Things Do* that, as we had mentioned before, act as markers to a flat ontology. Verbeek is one of the few design theorists who actively acknowledges anthropocentrism in design, and attempts at a general theory of design that aims to bring objects to the fore as co-participants in shaping experience. In taking his lens to Ihde, Latour and Borgmann, Verbeek lays out several propositions that are worth looking into: that reality is constructed through mediated perception, that relations between entities in a system can be studied without a necessary privileging of any one set of entities, and that there is a crucial sensual dimension to the interactions and engagements between things.

In the end though, Verbeek stops short of offering us a truly flat or comprehensive explanation of design praxis. For one thing, his solution to the problem of sustainability is to extend the lifespans of artifacts by making them more transparent, inviting an engagement into focal practices. And yet, apart from a set of general principles, Verbeek gives no guide to what or how specific materials work, and makes no mention of the actual process or craft of design, either descriptive or prescriptive, that gives us an explanation for why certain designs work and others don't, even when employed in similar contexts. In fact, Verbeek never really presents us with any kind of explanation made artifacts independent of relations, and thus is unable to extrapolate to a set of principles related to the material that would help designers better understand the aesthetic, political or ethical dimensions of their work.

Secondly, there is little accounting for the breadth of involvement in which designers actually impact the world; designers are employed in the creation of intangible signs and symbols, modes of interaction, and even in the planning of services and systems. Verbeek's principles do not account for the fact that mediation happens not only through designed material artifacts, but through all things...we respond equally to the color red in a traffic sign, to billboards, buzzing smartphones and the presence of plants in an otherwise sterile office setting.

As a theorist of technology and technological mediation, Verbeek does a fine job of explaining our relation to technology, but as a theorist of design, he lacks giving the scope and dimension that would be expected of a general theory of design. It is here that can turn to a recent shift in philosophical thought that has happened over the last decade, where the emphasis shifts from how things mediate our experience to how we can engage in a freer, more open engagement with things in the world; from phenomenology and other philosophies of subjects, to philosophies of objects.

The only way to do justice to objects is to consider that their reality is free of all relation, deeper than all reciprocity. The object is a dark crystal veiled in a private vacuum: irreducible to its own pieces and equally irreducible to its outward relations with other things.

Graham Harman

The Flat World: Harman & the Inner Lives of Things

If we were to extend Verbeek's argument that all things, not only material products, shape and mediate our existence on this planet, and that both the praxis and outcomes of design praxis should be based around a non-anthropocentric model of the world, it would be wise at this point to lay out exactly what the requirements of a flat theory of design would be.

Anthropocentrism is something that has been the cornerstone of human philosophical thought, dominating the sciences, humanities and arts well into the late twentieth century. The contemporary philosopher Quentin Maillasoux traces this subjugation of the nonhuman world to Kant's metaphysics, in posing that all reality is constructed primarily through experience, and, therefore, that only humans can ever have access to reality: *"The first decision is that of all correlationism - it is the thesis of the essential inseparability of the act of thinking from its content. All we ever engage with is what is given-to-thought, never an entity subsisting by itself. This decision alone suffices to disqualify every absolute of the realist or materialist variety. Every materialism that would be speculative, and hence for which absolute reality is an entity without thought, must assert both that thought is not necessary (something can be independently of thought), and that thought can think what there must be when there is no thought. The materialism that chooses to follow the speculative path is thereby constrained to believe that it is possible to think a given reality by abstracting from the fact that we are thinking it."*

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It was in response to philosophies of access that the speculative realist movement emerged in the last decade of the 20th century. While the movement is characterized with widely different approaches between its different core proponents, the basic theses of the movement are the same: there is a reality

independent of human experience, a reality populated with things both tangible and intangible, and that the challenge for philosophy is in developing theories of the world that attempt a metaphysics that includes all things equally. This necessarily means taking into account that humans are bound to their anthropocentrism - we cannot truly ever approach an explanation of other realities, those of foxes, venus flytraps and radios, and therefore, any non-anthropocentric philosophy must necessarily be speculative.

Of the different schools of thought within speculative realism, it is Graham Harman's philosophy that concerns itself most explicitly with objects. One of the founders of the speculative realist movement and arguably one of its most prolific evangelists, Harman initiated the pushback against anthropocentrism with his critique of Heidegger's tool being in his 1999 doctoral dissertation, *Tool Being: Heidegger & the Metaphysics of Objects*, which he later expanded into a full-fledged object-centered metaphysics in *Guerilla Metaphysics: Phenomenology & the Carpentry of Things*. Harman opens *Guerilla Metaphysics* with a succinct explanation of his project: *"...Object-oriented philosophy holds that the relation of humans to pollen, oxygen, eagles, or windmills is no different in kind from the interaction of these objects with each other...the subject matter of a carpentry of things in object-oriented philosophy is the shifting communication and collision between distinct entities."*

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Immediately, we can see how this approach might be useful to design, a discipline, as Verbeek, Fry and countless others have maintained, is fundamentally concerned with interactions, relations and things. Harman's approach in returning to an explanation of things both in themselves and in relation to other things makes for a fruitful domain with which to begin exploring the foundations of a general theory of design.

To present a complete account of Harman's metaphysics would be a project beyond the scope of this paper, but we shall here cover the key points of his thought most relevant and insightful to design. Firstly, it would serve us well to define exactly what Harman means by "all things being equal." A flattening of things does not simply mean the erasure of the natural/artificial, living/inanimate, or tangible/intangible - all things are equally things regardless of their complexity or simplicity, or their status as part or whole. We can thus say that the nuts and bolts of a coffee machine, or the buttons and icons of a mobile OS are as worthy of consideration as the machine or OS itself.

This is something that designers are well aware of in their engagement with materials in creating something new – the designer always moves back and forth between parts and

whole in what Schon identifies as material 'backtalk'. Furthermore, designers rarely make distinctions between the nature of their materials, digital, material, or even conceptual, when putting them to work; in great part, the flexibility of contemporary design, as Buchanan argues, as a powerful tool to solve complex problems is that designers can move between thinking about different materials with ease: *"In fact, signs, things, actions, and thoughts are not only interconnected, they also interpenetrate and merge in contemporary design thinking with surprising consequences for innovation."* In practice, even if not in goals, design praxis is already arguably object-oriented.

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This was true even of Latour's approach - where Harman differs from Latour is in his attribution of things as having an essence. Where Latour does not distinguish between particular, distinct entities, Harman maintains that things are locked into their own essences, from which their qualities exude – this is an insight he derives from Heidegger's definition of tools as being present-at-hand and ready-to-hand. Harman's criticism of Heidegger definition of tool-being revolves around the assumption that he makes that objects retreat into a ready-to-handness and become part of an invisible totality only for human beings: to assume that a jug of water is a jug of water only when humans drink from it denies it having any sort of extraneous reality for other beings. On the contrary, the way that we apprehend the jug or are involved in using it is only one of a multitude of interactions that the jug is implicated in, from the table it sits on, to the light from the ceiling light falling down on it, to the relations it has with the water inside it.

And yet, the jug, like every other object simply cannot be reduced to the sum total of its relations, otherwise it would cease to be that specific, real jug at all...there must be a jug that always lies beyond the access of all things, even as it is visible and available to all things. This perpetually withdrawn aspect of the jug that nevertheless maintains the jugs presence in the world and gives it its specific 'jug-y' properties is what Harman refers to as the real object.

Harman thus initiates a distinction between objects as they are independent of perception and interaction in the world, and as they appear to all other objects. When we encounter something, he says, we do not encounter the real object, but only glimpse the real object through its sensual exterior, i.e. we only see a sensual object. This brings us back to Verbeek's analysis of Ihde and the postphenomenologist school insight that perception does play a primal role in mediating reality: we interact with the sensual exteriors of things, and thus, all thingly relations, both in perception and interaction, take on a crucially important aesthetic dimension.

Harman identifies a further split in the two different kinds of qualities that objects possess. On the one hand, we have all the superficial, constantly shifting surface adumbrations (a definition he derives from Husserl), or sensual qualities of the object: the way in which the ceramic of a jug breaks up and scatters the light coming in from a particular angle, the play of light and shadow and color on its surface, the minute cracks in a corner that reveal themselves as we shift it to its side. But there are also abstract, essential qualities of the jug that do not change, that the jug needs to be what it is and differentiate it from other objects, like a mug or a glass or a gorilla. These eidetic or real qualities of the jug, its hardness, texture, materiality and form, Harman says, can only be alluded to, never entirely grasped...the hardness of the jug is a different hardness than that of a glass or a table.

Again, as a description of the design process, Harman's distinction between sensual and eidetic qualities is incredibly useful. We argue that designers already use a process of eidetic reduction in stripping away what is superfluous, and substituting different elements and aspects of the of the object in question with others to see what is absolutely necessary for the object to be identified as discrete and unique - the role of the figure/ground principle and the paring down of verisimilitude into icon forms the backbone of modernist communication and industrial design practice: *"The basic form, as the simplest expression of the idea, is modified particularly by the materials that are used for the improvement of the form, as well as the instruments employed."*

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At the same time, the craft of design is such that the designer has to be intricately aware of the affective qualities of his materials - what the use of a particular material will achieve in its use in a particular context. Architects have long known this: *"Our eyes are made to see forms in light; light and shade reveal these forms; cubes, cones, spheres, cylinders or pyramids are the great primary forms which light reveals to advantage; the image of these is distinct and tangible within us without ambiguity."* It is not difficult to map how tangible material relations might affect consumers, yet even when dealing with intangible materials, communication and interaction designers are well aware of the relations between substrate and foreground, and the relations between forms on the two dimensional plane.

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The quadruple object gives us an interesting new account of how objects in-themselves sit in design praxis. What is most revealing, is that designers are already object-centered in their practice: they silently recognize that both the objects that we create and use to create exhibit both essential and liminal properties that they need to be aware of and work through.

What is more interesting however, is that this also gives us an explanation for how designers are able to arrive at the new: Tonkinwise, in *Mimetic Becoming Material*, argues that in tandem with the tendency to realize the new that drives human will, the potentiality-for-Being that Heidegger spoke of that is grounded in concern, *"things become much more dynamic; in other words, they have alongside how they are (present), other possible and impossible modes of being. Again, as with human capabilities, these (im)possibilities are not just hypotheticals, but manifest in the presence of these materials as forces; as resistances or tolerances or inclinations."*

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In other words, the possible is only so because of the processes that designers employ and the sensitivities they cultivate to unveil the inner lives of things. The knowing that designers exhibit is an intimate knowledge of the ways in which artifacts are and unveil themselves upon the world, and thus designers are ultimately concerned with the ontologies of the nonhuman, both in terms of what is, what can be in relation to, and what can emerge as part of a set of relations. No industrial designer can employ a set of objects: nuts, bolts, screws, aluminum sheets and glass panes and leather pads, without understanding how all of these components would behave and manifest in the configuration of a computer chassis, and that too in the company of specific types of accessories and environments; no interaction designer can set a whole complex of icons, buttons, bars and type to work in creating an operating system without a sense of the affective qualities these objects embody, and that might emerge, and the kind of entities that they will eventually be involved with (video game characters, applications, the underlying code that it will run on, even the physical devices that it will be a part of).

To return to Verbeek's material aesthetics, one could say that we can only arrive at an aesthetics that aims at the reconfiguration of the social through material means through an object-oriented understanding of designerly materials. In a sense, what has happened is that we find that there is a deeper link between aesthetics and ontology than we previously thought: we know that the ways in which things elicit responses is in due part to the tensions at work, as Harman says, within their real and sensual selves. Yet we still require an explanation of how objects manage to interact at all, given that the real objects themselves are locked up in tight vacuums, while only showing their 'surface' sensual selves to the world - Harman's model also begs the question of why things would be drawn to interact with each other - where does the pull in object-object interactions lie?

A Flat Aesthetics: Lingis, Harman & the Style of Things

There is a curious passage in the opening pages of Wassily Kandinsky's seminal *Point & Line to Plane*, where he discusses the curious play at work in what he considers to be the basic elementary form, the point: *"The geometric point is an invisible thing. Therefore, it must be defined as an incorporeal thing. Considered in terms of substance, it equals zero. Hidden in this zero, however, are various attributes which are "human" in nature. We think of this zero - the geometric point - in relation to the greatest possible brevity, i.e., to the highest degree of restraint which, nevertheless, speaks....the point is the result of the initial collision of the tool with the material plane, with the basic plane. Paper, wood, canvas, stucco, metal - may all serve as this basic plane. The tool may be pencil, burin, brush, pen, etching-point, etc. The basic plane is impregnated by this first collision."*

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Kandinsky points to the ontological incompleteness that constitutes the point - the point signifies a rupture; a break that corresponds to what Kandinsky terms the *"ultimate and most singular union of silence and speech."* Notice also the kind of relations that Kandinsky names in defining the creation of a point - it is not the human agent here, only implicitly referred to as the driving imperative behind this interaction, but the collision of two entities, two objects in their materiality, that the invisible plane is ruptured and the point is brought forth out of nothingness. We see here that there is more than the human agent at play - a forceful, almost brutally violent interaction has happened between them, hinting at tensions between entities: paper and tool, plane and rupture.

A little further on in the chapter, Kandinsky begins to talk about how the point, when used in writing, begins to exhibit a mysterious form of animism under the pull of its interaction

interaction between words. In the metamorphosis of point from simple rupture to both a break and a bridge between individual signifiers, the inner turmoil of the point is released in the process of transformation, and it exerts a certain kind of agency over us, awakening response, evoking interpretation: *"As we gradually tear the point out of its restricted sphere of customary influence, its inner attributes - which were silent until now - make themselves heard more and more. One after the other, these qualities - inner tensions - come out of the depths of its being and radiate their energy. Their effects and influence upon human beings overcome ever more easily the resistances they set up. In short, the dead point becomes a living thing."* Meanwhile, in relation to the printed word, a new form of tension rises between point and print: *"the print is shaken by a foreign body which cannot be brought into any relation to it."*

The wording that Kandinsky uses within this particular paragraph is interesting. He seems to be pointing to a form of dual nature in the way objects seem to induce reactions from other objects: not only is the point eliciting different kinds of responses depending on where it is placed, within human comprehension, as correlationists would argue, but it is the presence of a point that can evoke only this sort of response - in a Harmanian interpretation, there seems to be a tension between the real and sensual object here - something of the essence of a point is being implied at, and not purely eidetically either, but through its material relations. But what is most interesting is exactly the kind of relation that the point sets up, in that it is a specific type of relation, as much a product of the object creating it as it is of the object perceiving it.

And yet, since no objects can fully interact with each other, locked as they are into their own vacuums, all interaction and perception happens within the sensual realm vicariously. To explain the nature of sensual object relations, Harman first turns to a key insight from the work of the carnal phenomenologist, Alphonse Lingis: that perception itself has an imperative structure. In other words, we responds to directives that come from objects, from things themselves, and that we explore the nature of the things we come into contact with indirectly, by basking in the medium into which they exude their qualities. For Lingis, regardless of whether it is a human, a cat, or a bird entering a city, it is the same city, the same assemblage of objects, that they all interact with - the objects are the same, but the level (to use Lingis' term) at which each object accesses the city is different, and thus the human, cat and bird each encounter the city differently. Yet there is that singular concrete something that they all encounter - something unites the city as a distinct entity with its own flavor and qualities.

This unique flavor or tonality that is encountered in experience is what Harman says we identify as the style of something: *"A style is not something that we conceive but something we catch on to and that captivates us."* The experience of an encountered thing is almost always the experience of the certain tone and feel that that thing exudes, and yet these tones always exceed the plurality of traits or elements that the thing in question is comprised of - to put it another way, regardless of how you rearrange certain buildings and urban spaces in Manhattan, Manhattan will always retain its own distinctive style.

Objects, for both Lingis and Harman, act as attractors, seducing us in the act of perception, inviting us to explore them – this is where their imperatives lie, and yet the space where they communicate is within the sensual realm, where their qualities become manifest: *"A perceived thing is real in being explorable - not a profile given and more not given, to be filled in by drawing on memory images and concepts, but instead details which, as soon as they are caught on to, lead our gaze into inner levels about which more details will form, to an overall design that coordinates and unfolds facets, to a behavior in an immediate setting that extends beyond it and into the future."*

Harman calls this principle at play by which real objects are hinted at, while communicating from the sensual realm, allure. In any kind of interaction, things can only allude to each other - what unites objects in perception, gives them their distinctiveness, their tone or the unique set of notes that belongs to them is allure, and yet allure is only apparent when objects actually do interact, albeit vicariously, intruding into each other's space.

Harman goes on to examine two ways in which allure becomes explicitly apparent, in his examination of the techniques of metaphor and humor. Of particular interest to us is the way Harman explicates metaphor. In pairing two things through metaphor, what the metaphor does is not compare them on the basis of shared similarities, but creates a wholly new entity, a new system that takes on the notes of the constituent entities that are consumed in interaction.

Design history is littered with the examples of metaphors both successful and unsuccessful - however, rarely have designers ever approached the ontology of objects we now take for granted as being metaphorical systems. In a highly influential PhD thesis which was to play a significant role in the development of the desktop paradigm at Xerox PARC, David Canfield Smith talks about the icon: *"An icon is a graphic entity that has meaning both as a visual image and machine object. Icons control the execution of computer programs, because*

they have code and data associated with them, as well as their images on a screen...these icons have both data (e.g. document icons contain text) and behavior (e.g. when a document icon is dropped on a folder icon, the folder stores the document in the file system)."

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How Smith talks about the icon in terms of what it is, is as a metaphorical hybrid - the icon is an entity/system that both references the machinelike nature of its operation and the tangible sensual object that it refers to. This referencing cannot be too close to either of the two entities: Tim Motts, while describing the evolution of the desktop metaphor at Xerox PARC, talks about how previous efforts to produce true-to-life, three-dimensional simulations had failed, but iconic representations that referenced in part the nature of the machine ecosystem, confined by the limitations of the computation and the screen, they belonged to worked. The icon as a hybrid, as a metaphorical device, works as well as it does because it also points to the other objects it co-exists with.

We could also apply Harman's definition of style to the analysis of interfaces. Currently there is a raging debate between mimetic, or what we could call 'skeuomorphic' interfaces and paradigms of interaction, best exemplified in Apple's design metaphors, and the more abstract, 'flat' interface model that was first popularized by Microsoft. Neither of these two styles could be mistaken for the other, or lose their style even if their elements were rearranged. Regardless of whether some applications on a Windows OS cellphone adhere to the distinct 'flat' user interface look or disregard it utterly, the operating system still retains its distinctive style - you could never mistake a Windows phone for an iPhone or an Android OS based phone. In an OOO interpretation, we could say that for any kind of system of interaction to retain its unity certain eidetic qualities of the system must be retained, while its sensual qualities can change. Therefore while changing the typeface and adding subtle tonality to the 'flat' tiles in the current Windows Metro interface might give us a bit of a pause, the system still remains identifiable as belonging to the same style - imagine if, instead of rectilinear tiles and a strict adherence to a modular grid, the tiles were circular and the layout followed a more arbitrary organic character. Redesigns of interfaces and interactions, in order to work, usually tend to verge towards keeping key eidetic qualities of the system under consideration intact while changing the spatio-temporal arrangements, and sometimes changing it to mimic another system entirely, as we can see in the countless examples of software applications that cross platforms .

Without getting into the debate between the utility of skeuomorphic and flat styles, we can lay out some general

principles that we derive through an attention to the configuration of elements within these styles. Firstly, we can say that a digital interface is more than just the 'skin' of a system of elements, relations and potential interactions - it defines the ways by which we encounter the system and lays the ground for perception and interaction. Thus, it is not the interface that can be said to be stylized, but the entire system, i.e. a style is a system that emerges through the encountering of its specific parts. Secondly, the components of any given totality are interchangeable insofar as they do not interfere with the eidetic or real qualities of the system as a unified whole - in fact, many designs that seek to involve the user allow material configurations insofar as the essence of how we encounter the design as a system remains intact. Thirdly, we can say that a style is said to be skeuomorphic or realistic when it exhibits a degree of verisimilitude to the behaviors, appearances, and limitations of, the sensual objects it refers to outside of itself.

In conclusion, it can be said that style, in framing the way we frame and approach sensual objects, plays a much more powerful role than it is usually ascribed in design practice. Done well, with metaphors that are powerful and evocative, styles can change the way we engage with and attach meaning to things. What OOO points to is that there might be ways to talk about and analyse styles using definitive frameworks and schemas, thus bringing style somewhat out of the unchartable, uncommunicable realms of pure feeling and into the concrete realm of object-relations.

Coda:

Object Oriented

Material Aesthetics

In sum, what we find most intriguing and exciting, echoing Steven Shaviro's appraisal of Harman's metaphysics, is that through the concept of allure, he denies the correlationist claims of things-in-themselves being solely things-for-us. For any object, regardless of its nature, both escapes and exceeds human language and ideation: *"in practice we actually are always speaking in various ways towards, around, and about 'what we cannot speak about'...the possibility of allusion, or of metaphor, or indeed of any non-literal use of language and of other modes of expression (pictures, musical sounds, etc.) allows us to escape the correlationist claim, and to be realists about 'things-in-themselves.'"*

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In the current climate of design discourse aesthetics is generally, we feel, an undercooked area of discourse, missing from the kinds of frameworks and principles and methods designers put to work. But what we have found is that it is, in fact, the tacit design recognition of the aesthetic-as-ontological is core to design practice. Designers, in their practice, in shaping the invisible environments of things that underpin our lives, deal with the sensual realms of things all the time. In doing so, what designers are already always doing is always reframing and recasting the ontological in terms of the ontic.

In this paper, we have only given a few ways in which we think an object-oriented ontology can begin to explicitly function in design praxis, giving an account of some core design concepts in a manner that does not relegate objects to mere materials or tools. Yet we feel that we are merely scratching the surface of the implications for reshaping design practice through an object-oriented, flat framework. Harman's explorations into the links between eidos, essence, and form, and his model of vicarious causation show the promise of developing into a

full-fledged theory of aesthetics that goes beyond the beautiful, the sublime, the ironic, the tragic or comedic. Designers already map out and model conceptual relations through various means - OOO opens up the possibility of mapping the sensual realm. We already have a set of precedents within this space - the video game theorist Ian Bogost describes the practice of ontography as one possible way of laying out and exploring configurations of object/systems such that their sensual relations be exposed (Bogost, 2012).

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Similarly, we propose that there might be other ways where flat ontologies might help us expand our current lexicon of concepts in design - one example would be to apply the definition of a flat ontology to the concept of affordances, and, in fact, Dan Norman hints at the flat nature of affordances:

"Some affordances are yet to be discovered. Some are dangerous. I suspect that none of us know all the affordances of even everyday objects." A flat ontology would indicate that affordances exist not only for human- nonhuman interactions but for all possible types of object relations - thus, both physical and perceived affective qualities would change according to the two entities involved in relation. Additionally, we pose that the role of aesthetic qualities as part of object affordances is an area worth looking into, and opens up the question of what perception and intention are like for nonhuman actants.

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Ultimately, though, what OOO promises is a way back to the heart of design. For far too long has design theory and practice been focused on human intent, to the extent that emerging discourses about things tend to anthropomorphize them; a recent example of this would be the MOMA exhibition, *Talk to Me: "whether openly and actively, or in subtle, subliminal ways, things talk to us...contemporary designers, in addition to giving objects form, function, and meaning, now write the initial scripts that are the foundations of these useful and satisfying conversations."* This extreme form of correlationism in design is exactly what Verbeek and Fry argue against, in that it betrays a tendency to reinforce the grip of the device paradigm - instead of allowing the designed artifact to fade away into an invisible background but still open up ways to engage with and explore the world, we are caught up in engagement with, ironically, things themselves as mirrors of ourselves. A reorientation of design around the object would, if nothing else, entail a way out of this increasing tendency to stamp ourselves on every aspect of the world and allow us to reconfigure how we see the world for what it is: complex, beautiful, and alien.

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