



## 2016 Issue No. 27 — Thing Theory, Material Culture, and Object-Oriented Ontology

### **An Ontography of Broadband on a Domestic Scale**

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#### **Introduction**

In this paper, we aim to provide an ontography of broadband in the contexts of domestic space. This research draws from ethnographic data in homes and develops an object-oriented approach to ethnography. At one level the purpose of conducting an ontography is to contribute to our understanding of the changing configurations of media and communications technologies in the home, and at another level, the purpose of our ontograph is to complement and counter the historical emphasis on human agency in studies of media in the home.

Within media and communication studies, there is an established tradition of studying the adoption and “domestication” of technologies, which this research both builds on and departs from (e.g. Berker, Hartmann, Punie and Ward; Haddon; Silverstone and Hirsch; Silverstone and Haddon; Spigel). In this tradition the materiality and the agency of the technology is a consideration, but the human experience monopolises analysis:

...for a long time, ‘mainstream’ communication studies have been predominantly interested in the messages of the media, their production, their effects or use, and various aspects of the media system [...]. The carriers of the content, i.e., the media devices themselves, in their physical existence as technological artefacts, were only of peripheral interest. (Quandt and von Pape, 330)

We offer an alternative analytic approach to domestication research by attempting to seriously account for the materiality of broadband and the domestic population of broadband-related technologies *qua* technology, thus providing potential insights not normally gleaned from the kind of humanist perspective we have adopted in the past (Arnold et al. 2014, Nansen et al. 2011, Arnold 2004). In this sense, we are interested in the ‘thingness’ of broadband related technologies, which have their own ways of being and acting in the world that are not reducible to our thoughts, desires and meaning making, and are not necessarily exhausted by social, cultural, psychological and other humanist analytics.

In order to avoid this humanist reductionism, our approach is informed most directly by Ian Bogost and Graham Harman, members of a school of thought variously termed “Object-Oriented Ontology”, or “Speculative Realism”, or most broadly, “Anti-Correlationism”, a loosely coupled school that has emerged as the most radical articulation of the wider new materialism at work in the humanities and social sciences, and which aims to map the ontological coordinates of the non-human (see: Dolphijn and van der Tuin; Parikka). Object-Oriented Ontology is a non-Kantian view of the world in which objects (or “things”, or “beings”, or “actants”, or “units”, as they are variously called) are seen as things in themselves – and not as articulations of human perception, culture, discourse, or conceptualisation. In this analysis, non-humans stand on their own feet, as it

were, and take their place in a flat ontology alongside all other beings, human and non-human. So according to this framework, a network router exists in the domestic world with quite the same ontological status as a human householder, and acts in that world in a way that does not privilege the human, or its relation to the human. This analytic perspective is thus a radical departure from studies of technology that take sociological, anthropological, semiotic, phenomenological or other humanist approaches.

To execute this form of analysis, we borrow from Bogost and use the word “ontography”. The term is not widely known in circles outside of object-oriented ontology, but is useful here in conveying our intention to present a domestic, object-oriented cartography of broadband related technologies. It can be seen that the term ontograph has its root in *onto* – “to be” in the Greek, but rather than the more usual *ology* suffix, denoting “study of”, as in ontology, it finishes in *graphy*, denoting a description, or perhaps a map or a diagram. An ontograph is thus to ontography what a photograph is to photography. That is to say, ontography (a technique) produces ontographs (depictions) just as photography (a technique) produces photographs (depictions). Ontography is a way of capturing and describing the ontics of objects – of what is – though of course, like photography – no claim of objectivity or neutrality is made. Ontography, unlike ontology, is not an in-principle account of the nature of what is, but is a specific realisation of ontography – in this case a description of broadband technologies on a domestic scale.

## Methods

Object mapping involved “technology tours” of the home, of around 2 hours duration, recording and mapping the history, location, actions, and interrelations of media and communication devices in the home – televisions, radios, computers, mobile phones, videogame consoles and so on. The method placed the technologies at the centre of our attention, and as the protagonists in the conversation. In all we conducted 22 household technology tours in 2013-2014 in urban, suburban, regional and remote homes in Victoria, Australia. The homes variously utilised fibre-to-the-premises (FttP), wireless connections, and satellite.

## An Ontography

### 1. A list of objects

An ontography inscribes and describes the objects that constitute the rich complexity of the world, and by far the most straight-forward way of creating an ontography is to first deploy a list, poetically described by Bogost as “a group of items loosely joined not by logic or power or use but by the gentle knot of the comma” (38). Those familiar with Actor-Network Theory will also be familiar with the rhetorical power of the list, often deployed by Latour in particular to convey the heterogeneity of the actor world, to problematise categories of being and their taxonomies, and to suggest just how messy and diverse the world is. Important to the nature of the list as a rhetorical form, is not the items listed, but the neutrality of the comma, the “gentle knot” that implies disjointedness, that puts to one side for the moment troublesome questions of causality, taxonomy, subject-object relations, foreground-background, and other forms of relation, and creates a formation that, although linear, is as flat and as egalitarian a starting point as an English arrangement of text will allow. Indeed, the list is “foundational” to advanced human society (Wilken and McCosker).

We can of course order some of these named objects in relation to others by deleting commas and substituting verbs, adverbs, adjectives, and the other necessities of narrative, plot, protagonists, and argument, and in the sections following this we do just that. An ontography might well begin, though, with a simple acknowledgement of the presence of the cast members, from the most humble to the most powerful. We therefore present a list in order that the objects in our ontography enjoy ontic status, for the time being at least, as equals.

Living room, audio-visual device, entertainment unit, router, sector, home, television, DVD, VHS video device, stereo, children's bedroom, telephone, broadband, media, householder, desktop computer, hand-held audio device, kitchen, contract, photos, landlord, laptop, iPad, PC, shaping, Ethernet cable, music, coffee table, installer, media junkie, curtains, researcher, subscription, Google Docs, hard drives, movies, TV shows, wireless keyboard, school, mouse, app, office space, bed, online banking, spare room, naked ADSL2+, iiNet [Local Internet Service Provider], community information, sync speed, National Broadband Network, property value, business hours, Evernote, speaker, cords, aesthetics, wires, technology, backpack, plan, megabits, walls, interviewers, \$100, Telstra [Local Internet Service Provider], cabinet, renter, website, format, engineer, problem, Mac mini, ceiling, personal server, downloaded music, personal documents, backup, holiday, family, Apple TV, visitors, text, streamed content, house, wifi network, regulation, couch, water, charger, infrastructure, exchange, home network, VoIP, MacBook Pro, MacBook Air, *The Age* [local newspaper], mp4, ABC news, Kindle, files, home-server...

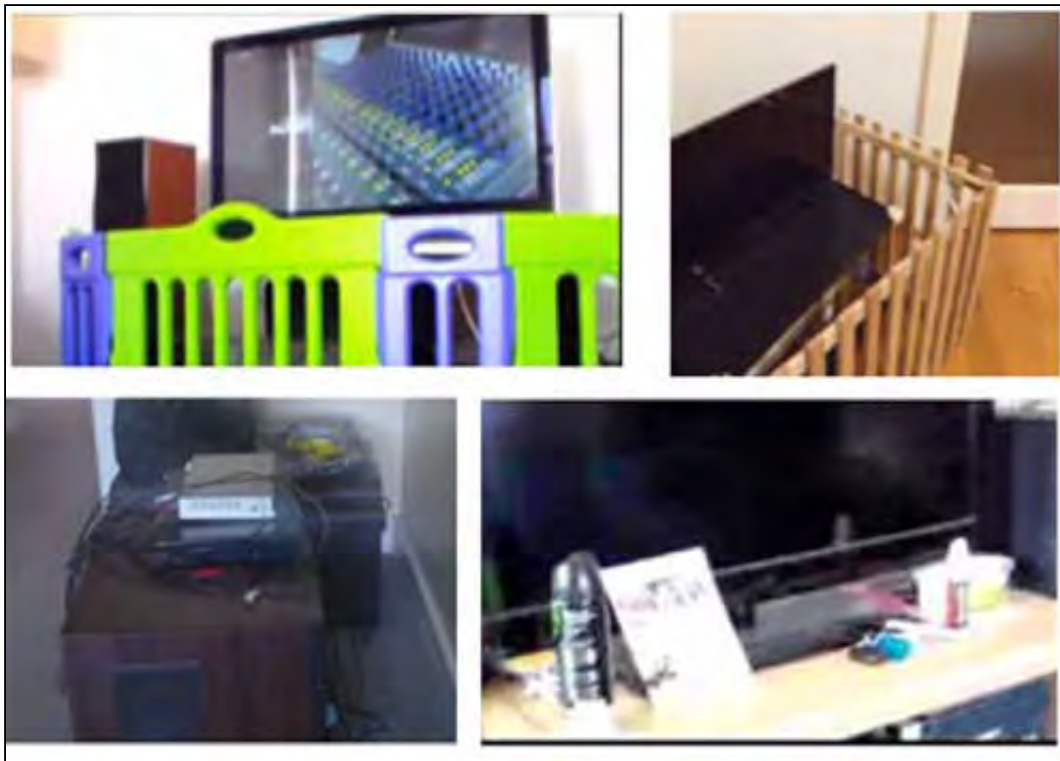
This list is by no means comprehensive (which would require listing everything from the sub-atomic up to the universe), but is probably long enough to make a point about the diversity and richness of the objects around us. It can be seen that we scoped the list around broadband related objects, and that a different focal point would produce a different list. Reading the list also highlights that while objects are often material "things", they may also be concepts (e.g. speed), theoretical models (e.g. network), formalisms (e.g. *a priori* categories) and other non-material beings that separate themselves off from us and take their place in our world just as clearly as material objects do. We are also mindful of the artificial limitation of our human-centric view of objects. For example, 'bedroom' and 'kitchen' are human-centric constructions of an object-space not relevant to the router, and had the router showed us around the house we would have had a very different list.

Now, to press ahead with our ontography we need to take our list, dispense with the commas and be as explicit as humans can be about the relations that exist between these objects. The listed items are no more independent than we are, are not randomly distributed in relation to each other, and their interactions are important to their way of being and are important in collectively constituting the domestic broadband media-scape.

There are many ways to position objects relative to one another as an assemblage, and thus many ways to shape our ontograph. Two of the most important forms of object relation to be considered in constructing a comprehensible ontography are a depiction of objects in place, and a depiction of objects in relation.

## 2. *Objects in place*

The distribution throughout the house of the listed broadband related objects was notable more for its variation than its consistency, despite (or perhaps because of) our small sample size. Like Quandt and von Pape, we found that computers, screens, routers and the like have migrated and settled in pretty much every room in the house, and while some patterns were more common than others, there was no standard form of distribution. For example, some rooms are 'no go' zones for some broadband related technologies in some homes – most commonly the bedroom, where computers and televisions are often not to be found. But, in other homes this is not the case, and networked wide screens do take their place in the bedroom. In other cases, exclusion zones apply very selectively to particular technologies, rather than to all technologies (see figure 1).



**Figure 1:** “No go” or exclusion zones.

*Top left and top right:* Toddler-proof fence excluding the TV from the living area.

*Bottom left:* Old TV and peripherals banished from the bedroom to make way for the laptop and the iPhone.

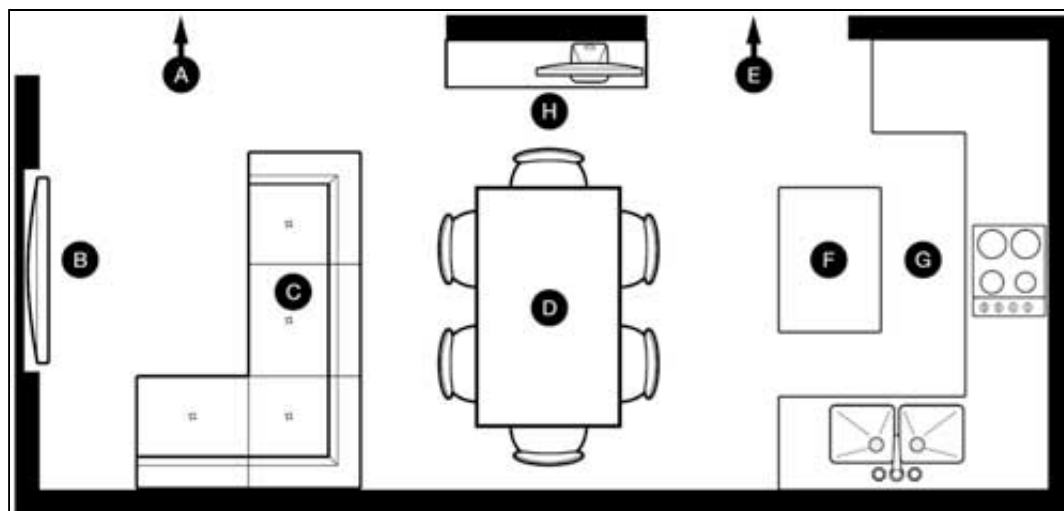
*Bottom right:* A TV taking its place in the bedroom alongside deodorant and other bedroom items.

It would appear that some of these objects, in particular chargers, smart-phones, laptop computers and tablet devices, are adaptive enough to be able to survive and prosper in most household object-environments, including bedrooms, and, similarly, the object-environment in each room of many homes is adaptive enough to be able to accommodate the presence of these technologies. Other objects, such as printers, PCs, and visiting researchers, are not generally found in bedrooms. In many cases, the designation of rooms for objects and objects for rooms is not evident in the way objects cluster and locate. Patterns of objects in place are not evident. Chargers, for example, are relatively nimble, and are to be found in many object-environments, including bedside tables and bathrooms. A charger is also characteristically well behaved, rarely drawing attention to itself, unlike the smart-phone, which is just as mobile as the charger, perhaps more so given that it is wireless, but on occasions acts to noisily interrupt (Licoppe), and is consequently excluded from certain zones.

More so than bedrooms, spare rooms would seem to be highly adaptive, flexible object-spaces, frequently accommodating a bed, wardrobe and the like, along with a work desk, computer and printer, apparently all getting along in a harmonious fashion. A flexible object such as a charger has no fixed address and is compliant enough to be ready-to-hand pretty much anywhere there is a power point, and the objects populating a spare room are diverse enough to render the room non-specific in terms of its function. A laptop or a tablet do not have as big an environmental footprint as say, a fixed screen, and thus infiltrate environments that by tradition have been hostile to fixed screens – such as bedrooms, bathrooms, and dining rooms. The collocation of objects such as dining tables, cooking equipment, and screens, mediates a flexible multi-functionality for the occupied space, and for the time the space is used. For example, we noted that in addition to co-presence, cooking equipment is used alongside tablet screens; dining equipment is used in parallel with a variety of screens and their streamed media; baths are used

in parallel with speakers; and beds are used with laptops.

Few spaces are the exclusive territory of certain classes of objects, and few times are set aside exclusively for the use of a particular class of object. An example of this may be seen in Figure 2 below, where screens, stoves, couches, tables, and more, are collocated.



**Figure 2:** Main room of household

A. Exit to study room, front door and living room (TV and couches).

B. TV in entertainment cabinet. DVDs fairly ordered.

C. Particularly high couch. Can see tops of heads from table (D) or kitchen bench (F).

D. Dining table and chairs.

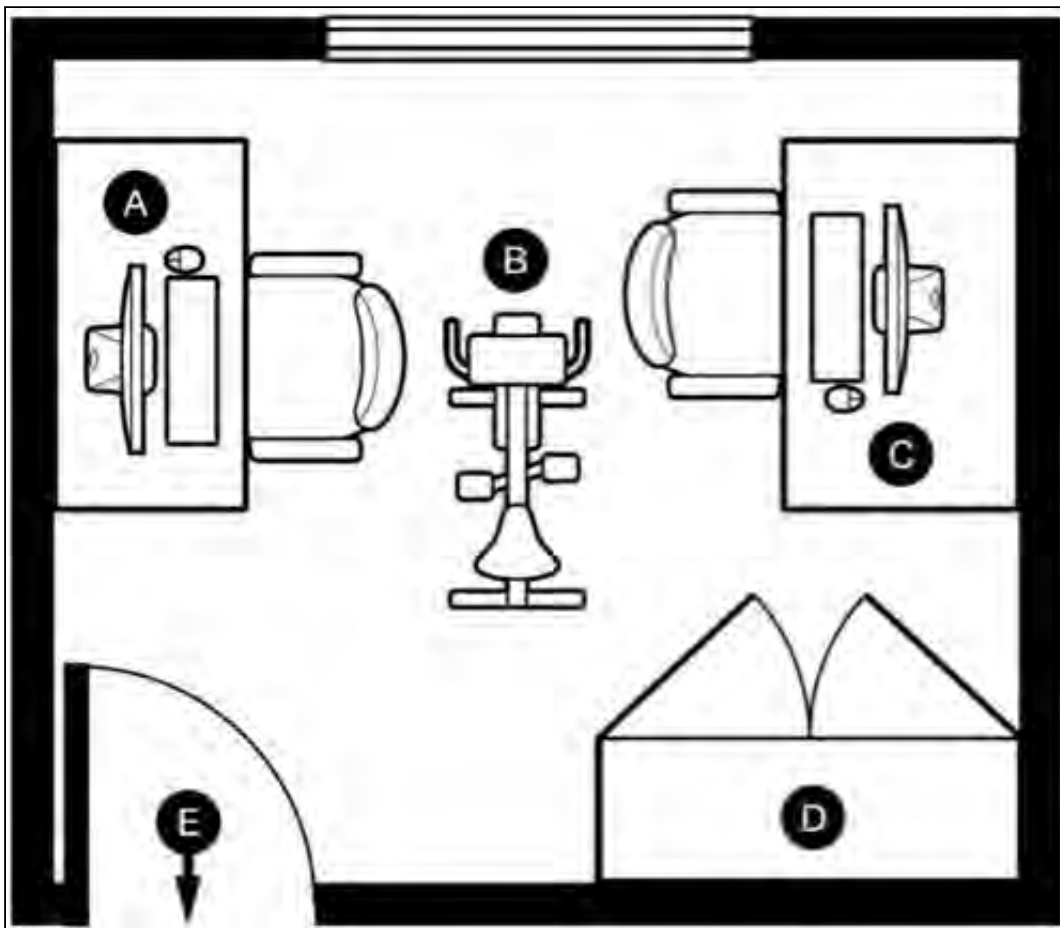
E. Exit to bedrooms.

F. Kitchen bench above waist height.

G. Kitchen units, including oven, fridge, sink, baking tray and cookies

H. Cheap small computer (raspberry pi) with decent sized monitor on surface higher than dining table. Can be watched from dining table and kitchen, but not from couches (C). Only place without a network port nearby, hence the computer uses wireless connection.

So it can be seen that our ontograph is thus far very messy (Law), with few clear patterns of objects in place in evidence. However, though broadband-related objects may be dispersed throughout the house, and single-purpose spaces are less common, in most of our cases the lounge-room would appear to be the key centre for the collocation of broadband objects, and the couch and the dominant screen are the poles around which other broadband objects are oriented. Anchored by the couch facing the screen and the screen facing the couch, we frequently found a miscellany of collocated PCs, keyboards, game consoles and controllers, DVD players, routers, and speakers. At this point it's tempting to launch into another list, but that would not only try the reader but give the impression of a lack of order, which is frequently not the case. Indeed, the order that exists in relation to the couch and the dominant screen is very often exemplary, particularly in contrast to the lack of order that frequently exists in relation to the PC and the work-desk. In Figure 3 below a stripped-down and stylised ontograph and accompanying field notes is presented to document the disorder typically associated with the PC, the work-desk, and related objects.



**Figure 3:** The “messy study” room of home

A. Main desk and PC. Has large stacks of paper on it, but otherwise clear of objects that prevent use.

B. Large items in the middle of the room, including an exercise bike with clothing hanging off it and boxes. The items need to be “shoved” out of the way to sit at the second desk (C).

C. Second desk. Has boxes and miscellaneous items on it, including a pot plant.

D. Cupboard with server, modem, monitor and network devices. The equipment for broadband connectivity and battery pack is located above this cupboard.

E. Doorway to hallway.

Why are the listed objects present, and why are they arranged in relation to the couch and the dominant screen, and less well ordered in relation to the PC and work-desk? A humanist approach might be to say “because people put them there!”, and then set out to provide an explanation in terms of cultural aesthetics, the semiotics of mess and order, gender politics in the home, psychological motivations and the like, each of which erases the thingness of things. But the fact is that these objects often *demand* to be located where they are as a precondition to meeting human requests. Humans do not therefore have a monopoly on decision making as objects also express powerful agency in regard to their position. The nearer the laptop is to the wireless router the happier the laptop is with its position, and if the laptop is not happy with its position in relation to the router, the human user is not happy in its relation with the laptop. Most game consoles, controllers, screens and the like, need to be collocated in close proximity in order to interact, and their interaction among themselves is a prerequisite for our interaction with them. Although objects might not move themselves, congregations and distributions of objects are certainly active in negotiating their configuration in place.

We also find that oftentimes objects are withdrawn from presence. As Weiser (66) noted, “[T]he most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it”. Weiser’s point is certainly true of the objects through which other objects interact. Wiring between objects has either literally disappeared, replaced by wireless communication, or where this is not the case, is made to disappear through being concealed, as in this household: “There’s one [speaker] hiding over there. I try to keep them relatively hidden, the cords” (Riley). Objects other than wires that are not part of an interface are also hidden: “we chose to have the [NBN] box placed where we could easily hide it with furniture” (Ashley). Sometimes whole devices are hidden [in this case a television]: “Stephanie likes to pretend don’t have one. We have long debates about it. Sarah thinks it is better to cover it” (Peter).

The presence and the ontics of an object are also withdrawn and emergent on many scales of aggregation and disaggregation. So, for example, a wireless router might be regarded as an object, but so too is the router’s internal power supply, its aerial, its circuit-board, and all the other objects that are not in view, but which aggregate and interact to form the object we can see and call the router. Each is an object with its own ontological integrity. Working the other way, the wireless router is itself a component of the home network, which might itself be a component of a ‘smart home’ communication and control system, which is in turn a component of the broadband network and then the internet, which is too big to see, but is no less important for that. No object’s ontology is reducible to other objects - a mistake Harman (2012) calls ‘undermining’, and no object’s ontology can be subsumed by other objects - a mistake Harman calls “overmining”. Objects aggregate and disaggregate, and withdraw and emerge on many scales, from the subatomic through to the galactic, and relations between objects occur in many ways through all these scales.

So, objects are positioned, and objects appear and disappear on different scales of aggregation, and objects also move. In the space of flows (Castells) mobility trumps positioning: broadband objects move with the body (“Mary started to bring an iPad with her when travelling to read on the tram...”); or bodies move between broadband objects (“Her desktop is the only computer in the home which is connected (wired) to a printer. If anyone else wants to print they come to use her printer”); informational objects move to the body (“I have a work and a personal Dropbox. I expect everything to be on every device”); and, the home-network moves around the globe (“for media consumption purposes, I live in America now”). An element of temporality thus qualifies an ontograph in which objects in space are unanchored and may change place minute by minute, all of which makes for a dynamic rather than static domestic assemblage, and makes for mess (Law) rather than order.

An important part of this temporal dynamics and movement of objects within the home occurs as new objects jostle for position, and old objects are expelled. Within the human trajectories of electronics marketing, planned obsolescence, short product life-cycles and rapid technology innovation, the broadband objects in our homes were, from a human perspective, quickly outdated and superseded, shunted to temporary storage places in garages and spare rooms, before finally making their way to the rubbish-tip, or to an electronic waste disposal centre. The human-oriented domestic life of these objects is thus extremely brief, perhaps extending to a few years, or decades at most. In contrast, the object-oriented non-domesticated life of these objects extends to many thousands of years, objects continue to be in position and in relation for thousands of years, and materialist literature has increasingly attended to this dirty materialism of non-human electronic waste (Cubitt, Parikka).

### 3. *Objects in relation*

The way objects relate to one another is problematic when considered as a metaphysical problem. Humanists in Kantian and phenomenological traditions consider relations to be the defining quality of objects – in particular the [I-World] relation (Ihde). In this way of thinking the ontology

of an object is exhausted by its relation to human senses and human sense-making. With similar ends but different means, the anthropological and semiotic traditions identify the ontics of objects in their relation to culture and language. Our ontographic approach also recognises the importance of objects in relation (though the exclusive privileging of human relations is denied). In this view the ontics of an object are not self-contained in that object, but are emergent, that is, extend beyond that which can be accounted for in the components or properties of the object. But, in a move that differs from conventional human-oriented domestication approaches, and incidentally, differs from the Actor-Network approach, nor can the ontics of an object be exhausted by its relations. That is, an object is not defined by its relations, and is certainly not defined by its relations to human senses, culture, or language. Rather, an object is what enters into relations in the first place (Harman). In entering into these relations, or engagements, objects aggregate and new objects are constructed. In engaging with one another, objects partially borrow the properties of the engaged, and their way of being and acting alters. So, for example, when a relation is formed between an fibre optic terminator box, a cat5 cable, a wireless router and a laptop computer, a new object emerges (a home network) which has a way of being and acting not present in any of its components, but emergent in their interaction. When objects disengage they disaggregate, new engagements can be made and again new objects are constructed – perhaps a stand-alone computer, a fibre optic terminator box night-light, and a (cat5 cable) washing line.

Parallels are evident here between Object Oriented Ontology (OOO) and the Actor-Network approach. Each seeks to decentre human actors and posit a non-hierarchical ontology comprised of humans and non-humans. Each is “realist” in its acknowledgement of the existence of a universe that is not of our making. Each acknowledges that humans and things act in the world and act on each other, and that these relations shape action in the world and shape each other. A key point of difference though, is that OOO does not accept that object-relations (an Actor-Network) constitutes the ontology of the objects in relation, or constitutes the object’s capacity to act. Pasteur was not constituted by, and is not reducible to his network of relations, but ontologically precedes those relations and always partially withdraws from them.

So, an ontography of domestic broadband must place objects in relation, not just in a list, and not just in place, whilst also acknowledging that the ontics of objects are prior to their relations, and partially withdraw from these relations rather than being entirely defined by them. In this move OOO accepts that objects are in relation and that present-at-hand relations are important, but denies that the ontology of an object is exhausted by its relations. Both engagement and withdrawal are important in the emergence of new objects and the ontics of these objects, though it might be said that emergence receives more attention than withdrawal.

The properties that are emergent as broadband objects engage with one another are well known. For example, in the following fieldnotes we see people, media files, iPads, coffee, and so on, all brought into relation through broadband. In one particular household, there are over 22 pieces of internet enabled technology which may be connected to the internet at any one time, and through each chain of object engagement, object properties emerge. The examples below further demonstrate this. Relations are shown in bold, objects are underlined:

When they **moved into** the house in April, Christine’s laptop was the **first object into** the house. Now, **her** desktop computer **serves** as the **main household entertainment unit**. It is **located** in the living area, **under** a large **shared TV**. **Attached** to the computer are two hard drives which Christine recently **organised** so that one is **for movies** and the other **for TV shows**. Shawn also has a device which he intends on **using to access media** on the **main computer hard drive(s)** from his **own room** but hasn’t **set up** yet. There is a wireless keyboard and mouse in the lounge for **controlling** the desktop/TV and music. Christine **also installed** an app on each of their iPads which **controls** the desktop. (Fieldnotes, 19 September 2013)



Note that what we are talking about here is object-object relations – objects that are ready-to-hand to one another (Harman), not just to humans. In this ontograph of a flat ontology, objects become tools to one another as they engage with one another, and are not simply tools for humans, and as a concomitant of this move, become ready-to-hand for one another, not just for humans. As a consequence of ready-to-hand object-object relations, another object emerges whose way of acting in the world includes (but is not limited to) the capture of wireless signals, packet-switching digital files, making pixels appear on a screen, tripping logic gates, causing disk drives to spin, depositing magnetic signals, and so on. Plenty is happening, but almost all of this behaviour, emergent in ready-to-hand object relations, is withdrawn. At any given moment and in any given configuration of relation, an object interacts with others across a very small spectrum of its capacity for interaction, the bulk of this capacity to act in world being withdrawn. And certainly the object's actions are withdrawn from humans – who have no idea what is going on in a literal sense, in say, the computer, or the telecomm exchange, or RAM chip 4, or between these three, at any given time. Which is as it should be, according to Weiser and according to Heidegger. The emergence of actions through object relations (say, speaking on the telephone – Weiser – or driving in a nail – Heidegger) results in the withdrawal of the handset, the hammer, and the presence of conversation and joined planks. What we add to this is an echo of Harman's thesis, to suggest that ready-to-handedness, withdrawal, and emergent properties are not only present in human-object relations, but also in object-object relations such as those that occur among the objects in our ontography.

Broadband objects may also be present-to-hand rather than ready-to-hand for other objects. Connection boxes and terminator boxes stop talking to each other, hard drives fail to engage with their read-write heads, batteries fail to supply power, power-supplies fry circuit boards, cables disconnect, wireless routers and laptops fail to negotiate internal walls, navigating Apple TV affects the volume on a laptop or starts playing a song on iTunes, or screens and hard surfaces interact in violent ways. Who would have thought that window blinds would interact with a connection box, causing each to withdraw and engage?

When we got it [the NBN box] put in here, they put the cable over and it got caught up in our blinds and the blinds made it stop working. We've got external security shutters. We don't know where or how they put the cable, but they put the cabling up through the mechanism. There must have been a gap where they just pushed it through. The cable they put in was hanging down. We contacted them to fix it and now the blinds don't work. (Peter)

So the blinds and the connection box don't get along, and for the humans, one of them has to go.

But this is not to say that these objects stop working, although it may be true to say that that they stop working at our command. Tessa Leach puts these human-object relations in perspective. She is writing here of the frequently abandoned Kinect 1.0, but her comment applies to all objects in our list, to all their positions in the home, and to all their relations:

The Kinect's period of existence will likely far outstrip our own. It has already been brought about through the siphoning of ancient hydrocarbons through an oil rig, the removal of ore from the earth and the refinement of minerals into glass. Even if these processes do not strictly speaking constitute the life history of the Kinect (since objects are irreducible), the future existence of the Kinect is certain to also be highly eventful. We cannot be certain of the future of this and other electronic artefacts, but at present it seems likely that they will be abandoned to decay over thousands of years. For almost all of this time the main interactions for the Kinect will be with objects other than individual humans. (Leach)

## Conclusions

The human (objects) in the households we visited expressed agency in the assemblage that is the

subject of this ontography. It was the humans, after all, who went out and procured all of the broadband objects that we have listed; it was the humans that moved these objects and put them in place; in many cases it was the humans that provided a means of connecting one object to another, and it is humans who are writing this paper. There is no techno-determinist claim made in this analysis, and no suggestion that non-humans are in any sense autonomous of humans. However, while acknowledging the role of human actors we have also attempted to avoid the humanist error in the other direction – the error of attributing autonomous agency to humans in relation to the world of non-human objects. Certainly, humans procured broadband related objects, but they cannot and did not decide to procure objects on the basis of subjectivist decision-making, but on the basis of objectivist decision-making. A fibre optic connection box demands that certain objects be procured and not others – e.g. certain types of modems or routers – which in turn demand that that certain objects be procured and not others – e.g. certain cables, an electricity supply and so on. The decision inheres in the object, not in the subjectivity of the householder. Having constructed a list of objects that are compatible with one another, they may be placed in position by a human – but of course not in any position. The position of the modem is determined not just by the human but also by the category five cable, the power supply, the position of a table, a wall and so on, and while a human may connect objects and enable them to interact, it is the objects that determine exactly how these connections will occur and what form the interactions will take.

It may be objected that this approach is simply the application of anthropomorphic metaphor to non-humans. We recognise that, as Bogost points out, we can only describe objects (such as routers) in anthropocentric ways. Try as we might to acknowledge the router's ontological and agentic status, we can only see the router and its world through our eyes, and not through its input portals. The router 'withdraws'. We cannot know what it is to be a router, but we do know that to be a router is to make an important contribution to broadband connectivity in the domestic environment. To understand this environment it is therefore important to acknowledge and understand the router not just in *our* terms and in terms of its relation to *us*.

All of which is very obvious, but is non-the-less often ignored by sociological, cultural, anthropological, and phenomenological accounts, all of which erase non-humans. By attending to the obvious state of the world and a material reality which is shaped by non-humans, we go some way to an analysis of the world predicated on a flat ontology and a democracy of object-actors.

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