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ADD TO SHOPPING BASKET

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Our time is perhaps the time of an epidemic of things (Garcia 1).

There are big numbers where the Internet lives. Exabytes of information stored on servers, stacked in data fortresses around the world.[1] Down corridors of container vessels technicians ride on scooters as if in some macro version of computer architecture, repairing and maintaining the physical network of numbers — numbers connected to numbers in networks of servers, ports and cables.

<RDT 310.5

Figure 1: Scooters at Facebook's Prineville data centre (Kellisis).

This is the physical Internet; the bits of the bytes, where numbers exist embodied in physical objects. This is where data has form. It is a spatialized Internet, not simply the temporal spatialization of the cloud but also the physical spatialisation of bodies that literally glide between server modules like the data in the network. It is a place demarcated from other places where information is secured behind datafied biometrics, retinal scans and video footage. It is the body of data. It is where data has dimension, weight, temperature and scale.[2] Where it consumes energy, demands attention and becomes a thing in itself, and in doing so creates an uncomfortable collision that problematizes the very notion of datafication. It is the ontological tension between data and the world that I want to explore in this paper, because although data has been presented as embodied in the physical architecture of things, this is clearly not the same as a *thing* being data.

<RDT 833.5v

As Viktor Mayer-Schönberger,and Kenneth Cukier point out, 'Big Data' is "data in the wild" — it is as indiscriminate as it is prolific.[3] In fact it is precisely its feral methodological nature that distinguishes it from the pristine, targeted and selective methods of statisticians. Big Data, according to Cukier, is an excess of content gathered without pre-defined intent and represents a shift in emphasis from causation to correlation (Mayer-Schönberger). This temporal remapping parallels the emergence of the 'semantic web'[4] and mirrors the ontological distinction between 'dynamic reasoning' and 'stream reasoning'[5].In this shift from persistent data to transient data (Balduini), we are presented with a new ontological model of data that not only challenges the assumption that the most recent information is the most relevant, but also questions the anthropocentric logic of dynamic data systems in which data sits passively awaiting human attention. Instead data is on the hoof — grazing haphazardly on the uninhabited tundra of the data landscape. Without heed for human cognition such data bears no correlation to the 'thinking' world. The correlational "thesis that we can never think being and thought apart" (Bryant) is buried deep beneath the slag heaps of data that accrue faster than our capacity to interpret them. Regardless of contentious philosophical debates about the veracity of realist arguments such as those

presented by Levi Bryant, nothing seems to refute Kantian correlationism as clearly as the ontological wilfulness of big data. In its rejection of causation and user-centred query methods the flat ontology of Big Data presents a *speculative* turn in which the various flat ontologies of 'Speculative Realism' become relevant to consider.

<RDT 1727.5

It should be acknowledged here that speaking of Speculative Realism as if it were a cohesive philosophical movement is as problematic as assuming all numeric data to be compatible. While all numeric data can be mathematically processed this does not mean it adds up to anything meaningful. Speculative Realism then is better taken as a still emergent and contested stream of continental philosophy that is speculative and feral to the extent that it seems premature to consider it as a movement at all.[6] If Speculative Realism stands for anything it is the "rejection of correlationism *at its most basic*" (Jackson). As the *trending* standard bearer for continental realism, Speculative Realism serves only as useful rallying point for a multitude of disparate voices that "don't even agree about what's wrong with correlationism! […] To be a Speculative Realist all you have to do is reject correlationism for whatever reason you please" (Harman *Bells and Whistles* 5-6). In this sense we can claim that Big Data by virtue of its rejection of anthropocentricism is Speculative Realist in nature.

<RDT 2281

The temporal remapping that Big Data exposes is not just a tension between data and the world but a much more fundamental ontological challenge to the nature of *things*. [7]

As such, Big Data is not simply things as big numbers. Rather it represents a shift in our anthropocentric construct of object-event relationships that challenge discrete causational models of time. My aim is to consider whether the speculative ontological frameworks put forward by Tristan Garcia and Brian Massumi regarding the discrete nature of objects, events and time can serve as a useful platform for understanding the predictive ontology of Big Data.

<RDT 2601.5

Initially the work of Massumi and Garcia might appear an odd pairing to those familiar with Object Oriented Philosophy. Indeed even Massumi seems to distance himself form a primacy of objects when he declares that "neither potential nor activity is object like" (5). While there are clear differences between Massumi's 'Activist Philosophy' and the so-called Speculative Realist *movement*,[8] like Levi Bryant, I consider *object*, *thing* and *process* to be synonyms (Bryant). Despite rejecting Activist Philosophy as a "useless fiction" on the grounds of its *under-mining* of objects, objects are for Graham Harman metaphysical in that they are comprised of a schema of withdrawn *sensual* and *real* qualities. In this 'Quadruple Object Schema' of inner relations (Harman *The Quadruple Object*), there seems to be no basis for excluding *process* or *event* from being objects in Harman's equally *fictional* construct. This is what Bryant is arguing for when he states that, "[N]o object can sit still". Instead the persistence of objects is taken to be an activity of endurance that is central to an object's being (Bryant). In this context Garcia's notions of time and event are taken as complementary to Massumi's Activist Philosophy. At the very least Massumi's work on events should been seen in the light of "their shared opposition to 'subjectivist

philosophy'" (Grusin), and the un-cohesive philosophical *movement* that is Speculative Realism. Rather than rally to the movement-that-isn't, I propose to locate this inquiry on the point of convergence between Harman's object, Massumi's event and Garcia's time in order to understand the ontological challenge presented by the *thing* that Big Data is.

<RDT 3452

Your Book

Data appears to come from things. Even when data itself becomes its own subject, data requires a source. But are things themselves data? Cukier and Mayer-Schönberg's book available through Amazon is not data — it is a book. That book might have dimension (8.3 x 5.1 x 0.8 inches) and weight (5.6 ounces), it might contain two hundred and fifty-nine pages and nine thousand eight hundred and sixty-six words, but this is not data. These are perceived qualities of the book,[9] and while they might be used to describe it they do not exist as data simply because the book exists.

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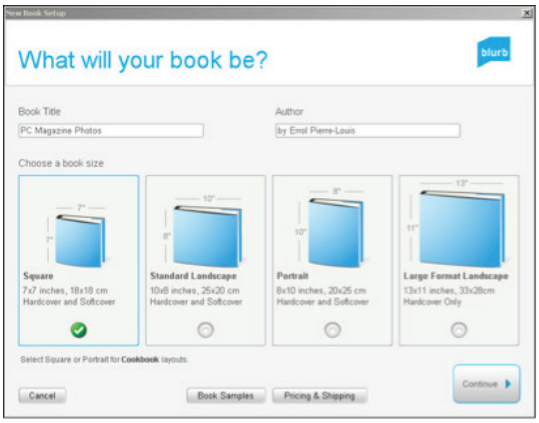

Figure 2: Book dimensions (Blurb (n.d.)).

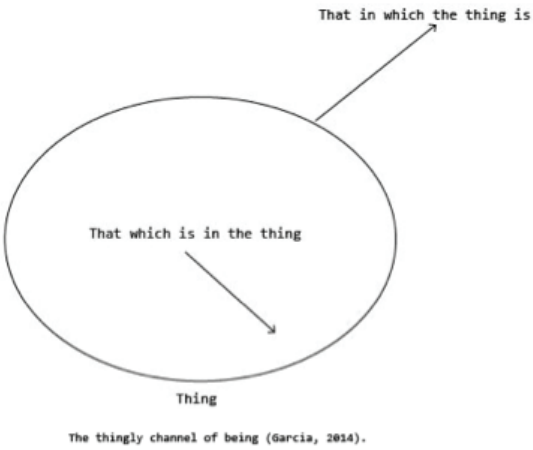

Figure 3: The Thingly Channel of Being (Garcia 2014, 12).

Eventually when that book is purchased, new information is generated. There is now a supplier and a recipient, with associated bank accounts, monetary value, and shipping addresses.[10] But this is not to say the book now has the quality of a street address in the same way that it has a number of pages. The physical book is different from the information associated with the book.[11] The information is its own *thing*. It is data that in one sense belongs to, or came from, the book but in another sense is autonomous. This is the point Garcia makes in distinguishing between "*that which is something*, and *that which something is*"(52). A book is something, but the thing that the book is — its data — is not the same as the book. Conversely, the data is not the same thing as the book. Both exist in their not-being of the other, a process through which they maintain their *compactness* by being in relation to each other.[12]

<RDT 4257

Add to Shopping Cart

When we '*add to shopping basket*' we create an event that is not an attribute of the book but a subject of the data that *self-creates*. Does this mean data is not a *thing*? No, simply that data becomes a *thing* in the event of becoming itself. It is through this event that data ontologically separates *itself* from the subject of book and person.

<RDT 4435

Massumi clarifies this distinction when, drawing on Whitehead and James he declares that "event itself is a subjective self-creation" (8).[13] Massumi's event is part of a qualitative-relational economy of process between things that is what in relation to Big Data might be called an economy of datafication — the event of self-creation in which data achieves being. This is not the same as saying that data is process — simply an aggregate of *things* that are already in the world. It does not pre-suppose a subject; rather it begins in the event — with data itself (Massumi 6).

<RDT 4729

Interpreting Massumi we might say that the subject of data is the datum in the etymological sense that it is the given and already active in the world. While there is no data separate from event, data is not the same thing as the event either (Massumi 21). Massumi provides a clear and stable diagram of this when he defines an *object* as being a thing in relation to another thing, and an event as the inclusion of a *thing* in relation to another thing. [14] Here, although time affects the relational hierarchies of objects, and it is possible for events to become objects — *things* remain "solitary and in the world" (Garcia 172). This relationship between things and data is further clarified by Massumi's term *semblance* — the manner in which the event potential appears, "reflecting itself directly and immediately in lived abstraction" (Masumi 19). The *object* thus is declared by both Massumi and Garcia as a paradoxical entity that is "never actual but always in some way in-act" (Massumi 19).

<RDT 5232

Although Garcia's notion of the *thing* initially appears to be consistent with Harman's *thing-in-itself* that is always withdrawn and inaccessible,[15] they reject each other's constructs.[16] While the debate around this distinction remains ongoing,[17] the radical availability of Garcia's *thing* resolves the problem of causality that evades the workaround of Harman's *quadruple-object* schema. It is sufficient to say here that in my opinion both present a consistent ontology in which the *thing/object* is defined by locating self-being in the event of self-creation. It is, however, Garcia's position that provides the most insightful framework for understanding the ontological challenge presented by Big Data that I pursue in this paper.

<RDT 5604

Mapping Garcia's framework to the *add-to* event of the shopping basket we see how any correlational construct of Big Data is set to implode on itself in a feedback loop of infinite recursion — a stack overload of object and event that is the potential of Garcia's *compactness*. *Add to shopping basket* is more correctly *add-to data base* as the information of the sale feeds instantly back into itself as a dynamic pricing system, affecting not only 'personalised' prices and promotions on Amazon but in independent book vendors globally (Ramasastry). As Cukier

points out, Amazon does not care why people suddenly started buying his book at the end of February, 2014 (Mayer-Schönberger 52); these are simply events generating events within a self-perpetuating system of becoming. Rather than being 'N = all' as Cukier claims (Mayer-Schönberger 26), Big Data constructs the recursive expression 'N = (N + all)' that we see played out in James Whitaker's notion of *domesticated* software — the Super-app that collapses capture and resolve into one event and defers the problem of intentionality and causation to probability (Whitaker).[18]

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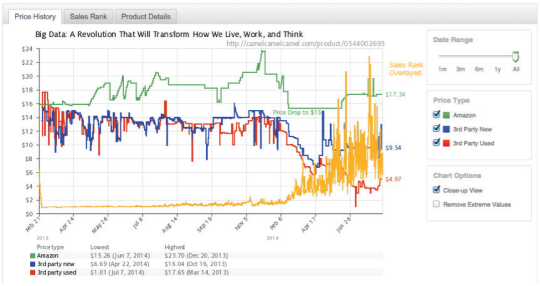

Figure 4: Pricing fluctuation for Mayer-Schönberger's book *Big Data* compared to number of sales (Green).

Managed by an 'Elastic Load Balancer', this self-generating feedback loop incestuously feeds subjects to themselves in an endless cycle of data-event upon data-event — that we see played out not just in the shopping baskets of Amazon's EC2 and S3 data-bases but at another level in the event of a book's becoming itself — in the event of writing.[19]

<RDT 6405

As if the word count constantly accruing in the footer of every Microsoft Word document were not enough to remind us — every character and every backspace is itself an embedded data-event. In the very simplest of terms every stroke of the keyboard becomes

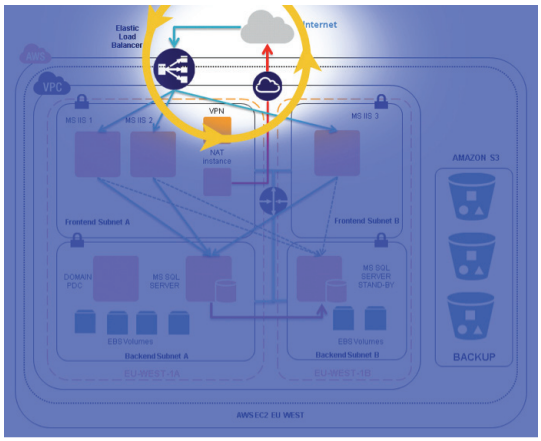

Figure 5: Availability infrastructure in the Amazon AWS cloud (Echeazarra)

a data-event that in the case of academic research is not simply a simultaneous correlational act of becoming, but seemingly a priori event of its own becoming.

<RDT 6651.5

For instance, this is played out in the Research Data Tool, a macro for Microsoft Word that calculates the NZ dollar value of the research based on the distribution of government research funding to New Zealand Universities according to word count. While thankfully not currently feeding data back to the Tertiary Education Commission (TEC) database,[20] this macro injects the quantified data of the research event back into its own becoming. The calculated value of research is not only seen to be accruing as the document unfolds but is part of the event itself.[21] The practice of writing is positioned in the event of the funding it attracts based on data-content embedded in its own event. Like Massumi's and Garcia's paradoxical *object*, this absurdity is played out as I write in an *object-event* that generates-research-that-generates-data, by generating research about the data it has generated.

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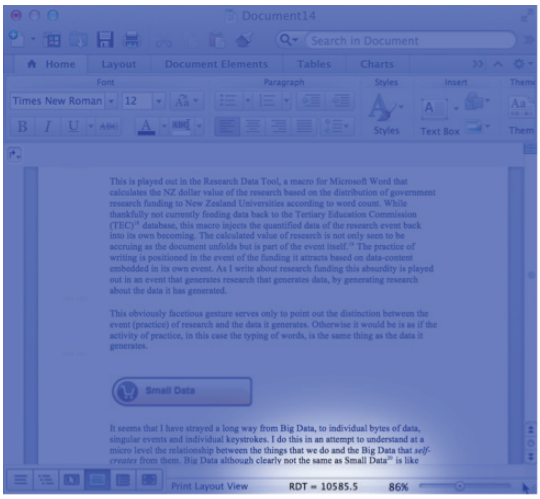

Figure 6: Research Data Tool status bar calculation.

This obviously facetious gesture serves only to point out the distinction between the *event* (practice) of research and the data it generates. To take it otherwise would be to treat it is as if the activity of practice, in this case the typing of words, is the same thing as the data it generates.

<RDT 7287

It seems that I have strayed a long way from Big Data, to individual bytes of data, singular events and individual keystrokes. I do this in an attempt to understand at a micro level the relationship between the things that we do and the Big Data that *self-creates* from them. Big Data, although clearly not the same as 'Small Data',[22] is like words on a page: an ecosystem of discrete units (Pollock). Despite its scale, Big Data sets are discrete units, things in-themselves that cannot be broken down to anything other than events of their own self-creation.

<RDT 7573

It is this very discreteness, its separateness from the ecosystem of both its event-subjects and content-subjects, which make it a *thing* itself. Discreteness is not scale determinate; a *Dreadnoughtus schrani* is no more or less a thing than a *microraptorine*.[23] In this way Big Data and Small Dataare the same thing. *Things* whose "information is nothing other than a self redoubled by the possibility of reproducing and transmitting its possibility" (Garcia 202). Both are irreducible to the event of self-becoming. Both are *things*.

<RDT 7843.5

The emergence of an event is the "irreducablity of a material level of organisation to a microlevel" (Garcia 193). Thus while Big Data can never be reduced to an individual *add to shopping basket* event, at a material level these events become discrete Big Data entities — if you like, *checkout* events.

<RDT 8001.5

Discreteness then is the state of being that any *thing* is, including the *thing* that is an event. The condition of being a thing is that it is somehow discrete; that it is a self- contained packet of information not unlike *the digital* — a discrete mode of representation (Lewis).[24] However, this is not a model of *things* as isolated and withdrawn entities but rather a model of *things* that, as Garcia would have us believe, are always in the world: *things* that are discrete in themselves yet continuous in other *things*. This finally makes sense of Garcia's compounding statement that a "thing is nothing other than the difference between *that which is in this thing* and *that in which this thing is*"(13); the difference between the digital and the analogue that coexist in the necessity of being a *thing*.

<RDT 8410.5

Mayer-Schönberger is correct in saying that datafication is not digitization only if he means datafication is not a process of reducing the continuous to the discrete (78). However his specific references to datafication as an activity that turns all aspects of life into data, is ontologically limited (78-83). *Things* do not become other *things*. Data comes into being in the event of its relation to other *things*, things it remains separate from. In the sense that data is discrete and its own *thing*, it is also continuous in its relation to its subject.

<RDT 8695.5

The differential pairing of event and subject creates what Jeff Jonas calls 'Enterprise Amnesia' — the forgetting of what is known — that exists in the space between observation and sense-making. Using puzzle-solving methods, Jonas' argument for a 'New Physics of Big Data' is centred on context as key to sense-making and points out the temporal dilemma of Big Data.

<RDT 8887

The emphasis Big Data places on correlation over causation — on "*what* rather than *why*" (Mayer-Schönberger, as cited in McMillian) — is shown by Jonas to be a problem of the separation of information from context – of isolating Big Data from its subject. Interpreting this within a Speculative Realist model as presented by Garcia, we understand how inseparable the subject of an event is from its data. Like pieces in Jonas' puzzle, both subject and data only make sense when they exist in the context of the event.

<RDT 9151

The predictive potential of Big Data lies in its temporal amnesia. In its willingness to embrace "real-word messiness rather than privilege exactitude" (Mayer-Schönberger 19), Big Data deliberately seeks to ignore context and focuses instead on prescribing future events based on dirty data correlations. Rather than time disambiguating the relation between subject and data as proposed by Jonas, it is the event-in-time that necessarily distinguishes between the thing and the thing that it is not — the data.

<RDT 9412.5

Intent on the future, Big Data's predictive gaze is grounded on a construct of time that is reliant on the separateness of present and future.[25] In not caring why something happened, Big Data isolates itself from the causal past and locates itself fully in the self-realising events of the predictive future.[26] It becomes a *thing in itself* that is reliant on a discrete quantified construction of time that allows for the notion of prediction. Mayer-Schönberger's insistence that "predictions based on correlations lie at the heart of Big Data" is an invocation of an understanding of time from the present. Only when we locate ourselves exclusively in the present can the potential of prediction be realised. Only when a *thing* exists out of context (Jonas' Enterprise Amnesia) and is a *thing* only in itself (Garcia's *compactness*) can Big Data's predictive claim be made.

<RDT 9854

How then do we resolve this apparent incompatibility between Big Data's correlational construct and Garcia's *thingness*? It seems we must either revise Garcia's argument for *compactness* (rejected by Harman in *Object-Oriented France: The Philosophy of Tristan Garcia*) or disregard the predictive value of Big Data.[27] Drawing on McTaggart's series construct of time which holds that the "distinctions of present, past and future cannot be true" (464),[28] Garcia offers us a third option of resolving the co-conditional construct of *things* as *things*-in-something, when he proposes a continuous model of time in which past and future are *intense variations* of presence rather than isolated positions.[29] The future, rather than being discrete and separate from the present, is part of the continuity of event time in which the discrete *thing* is something (Garcia 177-187). Garcia's model removes the tension between object and event by providing a structure in which discreteness of Big Data and the continuity of practice cannot be separated.[30]

<RDT 10377.5

Rather than consider the data of Mayer-Schönberger's book as separate from the book object, we should understand that the book and its data exist as an embedded mutual exclusivity. In the same way we must understand that data, rather than existing in isolation, is inherently related to other things/objects — objects both past, present and future.

<RDT 10559.5

I started this paper wandering the corridors of Google's data centre and thinking about how to separate data from objects, only to find myself standing back at the security desk again. Every item I have added to my basket along the way is simply another event in the event that is the continuity of relationships between things in the world.

<RDT 10738.5

Big Data however doesn't change the intrinsic nature of *things*. Data can only be ontologically isolated as separate and discrete in itself if we accept time as a construct of the present. However this sequential model conflicts with the Mayer-Schönberger predictive function of Big Data which seeks to distance itself from its subject while simultaneously collapsing object and event into a correlative present. Big Data should not be so easily allowed to exempt itself from the world by escaping into the predictive future in this way. Alternatively we can understand how Big Data might maintain its predictive function without ontological implosion by using Garica's time of *intensity* and Massumi's *event of self-creation*, and accepting that *objects* must be understood as being both ontologically analogue (continuous) and digital (discrete) within the intensity of time. In this way things not added to the shopping basket can still proceed-to-checkout on their own.

<RDT 11231

Notes

[1] The world's largest data centre — Lakeside Technology Center in Chicago, reportedly covers 1.1 million square feet of the Gothic Industrial Age icon. Built to print the Sears Catalog in 1912 it has always functioned as a data base site. <http://www.datacenterknowledge.com/archives/2009/01/06/chicagos-data-fortress-for-the-digital-economy/>

[2] Data is fundamentally embedded in measuring and recording the world. (Mayer-Schönberger 79).

[3] Although I struggle with the *popademic* styles of Cukier and Mayer-Schönberger's writing, its points are generally useful to this debate.

[4] "The Semantic Web is an extension of the World Wide Web, where the semantics of information is encoded in a set of RDF statements" (Margara). RDF is a standard model for data interchange on the Web.

[5] Definitions for these terms are taken from Balduini's presentation to the International Semantic Web Conference in 2013. Dynamic data is persistent, stored and queried on demand. Stream reasoning takes data as transient and continuous – to be consumed on the fly (Balduini).

[6] Used here in favour of 'Object-Oriented Philosophy', or 'Object Oriented Ontology' due to its more inclusive stance in regards to Continental Realism and Materialism.

[7] The italicized term *thing* here is used specifically in the double sense Garcia defines in *Form and Object*. Garcia defines a thing as "nothing other than the difference between *that which is in this thing* and *that in which this thing is*" (13). This distinguishes it from both Heidegger's and Harman's thing.

[8] Not least being the "*aesthetico-political*" and "*speculative-pragmatic*" (Massumi 12). Byrant also provides a succinct comparison of the difference between Massumi and Harman in his blog post *The Dynamic Life of Objects* (2012).

[9] Interpreting Garcia we could consider this in relation to the quality of a *thing* and the *thing* that constitutes an object (171). See also: *Fig.1: The substantial channel of being* (Garcia 9). Alternatively following Graham Harman we would specify these to be *sensual qualities* (Harman, *The Quadruple Object*).

[10] I could add here associated profiles, with associated histories etc., but this would simply widen the event of the purchase out infinitely in a way that might conform to Timothy Morton's 'Hyper Object' (Morton). Despite differences in the way Speculative Realists articulate *things*, all *things* maintain their difference from things they are not. *Things* are always in relation to each other (even if only partly so). *Things* are always something they are not even, if they are in something else. This is why data is not the same as its subject. Another way of saying this would be that a *thing* is not reducible to data. Data becomes its own thing.

[11] Information that is perhaps associated more to another thing such as house's street address.

[12] In unpacking the ontology of things, Garcia proposes that failure is in fact a condition of the compactness of an object being itself (64).

[13] Massumi's activist philosophy draws heavily on Whitehead's process philosophy and James' radical empiricism.

[14] I am referring directly back to the opening argument in which *object*, *thing* and *process* are taken to be synonyms (Bryant 2012). As Speculative Realism in general treats both physical and metaphysical *things* as objects, one can reasonably consider an idea to be an object.

[15] Drawing directly on Heidegger's *dasein* and Kant's *noumenon* (Harman, *Bells and Whistles: More Speculative Realism* 75).

[16] See Graham Harman's *Tristan Garcia and the Thing-in-itself.*

[17] Harman is not convinced by Garcia's "argument that the *in-itself* is an impossible nonsense that Garcia calls its *compactness*" (Harman, *Tristan Garcia and the Thing-in-itself* 34), the possibility of the failure of its own conditions of possibilities (Garcia 64). The difference in part fuelled by different terminology — Harman's object is Garcia's *thing*. It is I believe simply a matter of understanding how Harman's *Quadruple Object* schema allows a thing to be both in-itself and beyond-itself at the same time.

[18] To quote: "Capture it where it occurs and we want to resolve it where it occurs, no more hunting and gathering, we're going to domesticate this information, we're going to domesticate this functionality" (Whitaker).

[19] Elastic Load Balancing automatically distributes incoming application traffic across multiple Amazon EC2 instances in the cloud. EC2 and S3 are core features of Amazon Web Services remote computing system (AWS).

[20] TEC is responsible for implementing Performance-Based research fund (PBRF) a funding mechanism that aims to "ensure that excellence research in the tertiary education sector is encouraged and rewarded. This entails assessing the research performance of TEOs and then funding them on the basis of their performance." (Tertiary Education Commission)

[21] The Research Data Tool value inserted is recursively counted as part of the RDT value. See indent values <RDT 4862.5.

[22] "What is different is the *Volume*, *Variety* and *Velocity* of big data…" (Gutierrez).

[23] A *Dreadnoughtus schrani*, from Upper Cretaceous sediments in southern Patagonia, Argentina estimated as being about the same size as a dozen African Elephants (Lacovara). *Changyuraptor yangi* is a recently discovered microraptorine, a group related to early avians and raptors and is estimated as being about the same size as a turkey (Choi).

[24] The term 'digital' is used here as an extension of Lewis' widely accepted definition of *the digital* as being a discrete representation in opposition to the analogue, which is seen as a continuous representation.

[25] For clarity I have omitted past that is the separated domain of causation.

[26] As illustrated by the Research Data Tool.

[27] Something that would go against the mandate of an ever-accelerating, technological imperative.

[28] McTaggart support Garcia in that he present a Hegelian time-series theory in

which “time is in time” (McTaggart 469).

[29] It is useful here to remember Henri Bergson’s treatment of duration and memory: “Questions relating to subject and object, to their distinction and their union, should be put in terms of time rather than of space”.

[30] His model is based in part on ‘Growing Block-Universe Theory’.

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