

ALGORITHMIC ALLURE: HEIDEGGER, HARMAN AND EVERY ICON

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In recent years the contemporary American philosopher Graham Harman has surfaced with a “realist” re-reading of Martin Heidegger’s Tool-analysis, pushing it to its logical limits (Tool-Being - 2002). Dismissing *Dasein* as the root of truth for human beings, Harman instead argues that *Readiness-to-hand* and *Present-at-hand* are qualities available to all entities in the cosmos even if humans created such objects. In February 2008 Harman’s paper *On the Origin of the Work of Art (atonal remix)* attempts to perform an ‘object-oriented-philosophy’ reading of Heidegger’s influential essay on aesthetics, identifying Heidegger’s “strife” as a philosophical idea which escapes into the qualities of all objects and not just privileged artworks. But the extension of Heidegger’s strife hints to the idea of aesthetic “allure”, which Harman describes as ‘*a special and intermittent experience in which the intimate bond between a thing’s unity and its plurality of notes somehow partly disintegrates*’, (Harman, *On Vicarious Causation*, 2007). Allure occurs when objects are split from their qualities, establishing a tension between its non-relational execution and the way it has been described. Artworks, metaphors and jokes turn out not to be affecting features of human literary culture, but primordial constructions of the universe itself. The article will argue that these rich conceptualisations offer insightful commentary on technological artworks which exploit computational algorithms. By focusing on John F Simon Jr’s online artwork *Every Icon* (1996), I will argue that algorithmic artworks mark the realist independence of non-relational objects, where aesthetic concern has little to do with human use.

Introduction

At first glance, the online artwork ‘*Every Icon*’ (1996) could be taken as a commentary on the limits of human representation. Or perhaps it could be a critical act of extending digital image making to its own applied mathematical limits. American artist John F. Simon, Jr states;

Can a machine produce every possible image? What are the limits of this kind of automaton? Is it possible to practice image making by exploring all of image-space using a computer rather than by recording from the world around us? What does it mean that one may discover visual imagery so detached from “nature”? (Simon 1996)¹

The piece is simple enough. Once the Java Applet has loaded in the web browser, we are shown how the operation is programmed. A binary black and white icon pixel 32 x 32 grid is presented where every pixel is allowed to be coloured either black or white. The algorithm has been constructed to count every possible configuration of black and white pixels from the top left, starting at 1024 white pixels, to the bottom right as 1024 black pixels; the aim of the algorithm is to literally count every icon. The piece also tells us the date as to when the algorithm started and according to Simon’s calculations;

...the total number of black and white icons in a 32 x 32 grid is: 1.8×10^{308} (a billion is 10^9). Though, for example, at a rate of 100 icons per second (on a typical desktop computer), it will take only 1.36 years to display all variations of the first line of the grid, the second line takes an exponentially longer, 5.85 billion years to complete. (Simon 1996)²

It would take approximately another *several hundred trillion* years to get anything like a recognised icon which humans or advanced cognitive behaviour could represent. When a recognisable icon does emerge; whether an arrow, a diagonal line, a binary copy of a black and white Piet Mondrian painting or even a well known Microsoft desktop icon, Simon is looking to force the human mind to confront an impossible task. Would humans be around to perceive such images? If so, can any human or non-human culture relate to an arrow or a diagonal line in several hundred trillion years time? Whatever this future race constitutes images as, they may be completely different to the ones we hypothetically recognise in the present. Would the algorithm even be functioning at this time? One can speculate a barren wasteland that was once your current workstation, humans nowhere to be seen, but *Every Icon* is still there, counting away, a billion years away from completion.

¹ Citation from the artist’s statement of Simon Jr (1996). Webpage link - <http://www.numeral.com/articles/paraicon/paraicon.html>

² *ibid.*

In the wider field of computer generated artworks, algorithmic art usually exists as a subset, as its specificity is with the aesthetic implementations of algorithms for visual artistic use³; either the algorithm can be used to generate usually random images or patterns, or the mechanical structure of the algorithm itself is focused on *as art*.⁴ Historically the term ‘Algorithm’ has been linked to mathematical calculations using Arabic numerals rather than the general use it has in computing today, in the form of a ‘systematic procedure of calculation’ (Ifrah 2001). For this very reason, researching early periods of algorithmic implementation within art history would be overwhelmingly convoluted⁵. Not only has the term become arguably synonymous with computing instruction, but also the different types of algorithmic instruction itself (especially in computing) are devastatingly esoteric and complex. An “algorithm” can also be used as a shorthand term to designate simple instruction, (a cooking recipe for example), not necessarily something which executes itself autonomously, but a pragmatic approach to problem solving. It was only with the introduction of Alan Turing’s “Universal Computing Machine”, that mathematical algorithmic design became synonymous with increased calculation.

The algorithm used in *Every Icon* is known as an “Enumeration Algorithm”, a designed instruction to systematically count how many possible variations there are in a certain programmed method. This article will summarise how this type of algorithm is used within similar artworks and how they are typically understood. This will be followed with a somewhat unusual fusion with Heideggerian ontology and its interpretation from the American contemporary philosopher Graham Harman. I will argue that Harman’s unorthodox phenomenology will influence a different understanding in how we approach the artistic implementation of enumerable algorithms. Rather than historically understanding the application of these algorithms as “useful” for artistic purposes, instead I propose an understanding which situates algorithms as a realist contingent force.

³ Historical sources state that the term “Algorithm” descended from the surname of an Arabian mathematician (*al-Knowarazmi*) who was active around 820 AD in Baghdad. The use of the term *algorism* appeared soon afterwards and it can be found Latinized as *algorismus* with various spellings in other several languages. It eventually ending up translated into English as the term we know today.

⁴ Algorithmic artist, Roman Verostko has termed these types of artists “*Algorists*”, influenced by algorithm’s archaic beginnings. Verostko and others agreed in 1995 that this term should be designated to artists who create original algorithms for artistic use.

⁵ For example, one cannot ignore rudimentary algorithms used in linear perspectives and proportions in Renaissance painting. As well as algorithms used in infinite geometrics within early Islamic art.

(Meta)-Art

The Institute of Artificial Art in Amsterdam (IAAA), define image-making algorithmic artworks as “*meta-art*” in that, ‘Most image generation algorithms do not specify one image, but a large (often infinite) class of images’⁶ Unlike pre-computational artworks which also follow this line of reasoning, such as conceptual artworks, process artworks, or even drawing machines⁷, algorithmic art is applied mathematical possibility (programmed or non-programmed) within a defined area.

The idea of an artwork which executes all mathematical variations in a pixel binary grid had been developed and implemented independently by a few artists in the 1990s around the proliferation of software art at that time. The first piece of this sort, which emerged in 1991, is “*The Wishing Well*” by Lars Eijssen & Boele Klopman (1991).⁸ This piece took the form of a computer program and a printer, rather than an online Java Applet; it printed all configurations of a 71 x 71 black & white pixel grid, and included a graphical interface for the user to find future images. It also calculated the images in a slightly different order than *Every Icon*: rather than each possible configuration, constructed line by line, Klopman and Eijssen’s enumerable algorithm counted all possible configurations of a grid with one black square, then all variations of two squares, etc. Similarly, in 2000, Leander Seige constructed an online artwork called “*Imagen*” (2000)⁹, an enumerable algorithm which again counted configurations of mixed pixel grids, this time experimenting with RGB colour set, instead of a binary black and white “palette”.

In each case, the artists focused on two specific aspects; by designing enumerable algorithms in particular, they were applying the mathematical construction of these pieces in conjunction with the duality of the observer, as mentioned previously. We can also observe that the integrity of the piece can be established from its type of algorithm. For example, interactive

⁶ The Institute of Artificial Art in Amsterdam (IAAA) website, - 17th February 2010, <http://radicalart.info/AlgorithmicArt/intro.html>

⁷ Painters (and I use the word very loosely here) such as Natasha Kidd, construct elaborate machinery to generate random paintings and patterns on canvas, performed (or executed) in the gallery space. Also some algorithmists, develop or program algorithms to guide drawing machines (such as pen plotters) in order to make such images, artists such as Roman Verostko, and Jeff Bangert are well known for this.

⁸ This piece was exhibited as an installation at the 1991 TART Festival, University of Twente; it was also referred to in Scha (1992).

⁹ This program had been viewable online, the introductory webpage still exists, but the links tragically no longer exist. See http://www.determinate.net/webdata/seg/imagen.php?redir_imagen

algorithms are used for storage, user-generated, object-oriented based technologies which reinforce user participation. Randomised, emergent or generative algorithms can be used to generate unpredictable visual aesthetics, or in the case of artistic practice, a random variant would be introduced by the artist, programmed within the code to establish some element of chance.

In the cases of *Every Icon*, *The Wishing Well* and *Imagen*, the artists do not restrict our understanding of how the piece functions, nor disregard the mathematical implications of its execution; it does not generate images as randomisation, but systematically renders all possible images within a selected grid structure. The images are not generated by a user, the artist or by some sort of warped performance between the two, but by the algorithm itself. The non-participatory element of these works, illustrates the algorithm's duality in counting. In sharp contrast to the observer, the piece just goes on counting all finite possibilities in an arbitrary based grid structure until it reaches the end of its instruction. The images produced (even if they are at 100 times a second like in *Every Icon*), have a two-fold effect; they are mathematical images, which the mechanical algorithm has calculated to be mathematically correct. For the purposes of the algorithm, the images are nothing more than *actualised calculations*. For the purposes of the observer however they are visual representations; the result of the webpage translating the embedded Java Applet virtual machine from a remote client server, within the webpage's HTML code, which depending on the images generated, can be represented in cultural iconography or cannot.

It therefore seems feasible to suggest that any question addressing the timescale of an enumerable algorithmic artwork's "execute-ability" is one which addresses the limits of human access. When an artwork is given the name, '*Every Icon*', it is understandable we relate to a history of computer iconography and perhaps then address consistent or inconsistent semiotic issues, such as "What do these icons mean for us?" How can an arbitrary collection of pixels, assemble themselves into something we recognise culturally and historically as an arrow? It also seems plausible to place *Every Icon* in a hermeneutic circle. Where does our level of interpretation start, the algorithm or the human beholder? Is the icon generated first, then human interpretation after? Or do we afford the image a cultural representation prior to the generating? The algorithm is certainly a product of human engineering, artistic or borrowed, but what holds our question here is the aesthetic nature of the piece in relation to the beholder. There is some serious philosophical weight to this discussion and some insight may be found through a detour in ontological realism. Ironically, I hold that the most applicable is located in, perhaps the most famously anti-technological and anti-realist of them all: Martin Heidegger.

The Human-Centric Misunderstanding of Tool-Analysis

There are three Heidegger texts which concern us here; “*Being and Time*” (1962 [1927]), “*The Origin of the Work Of Art*” (2002 [1935]) and “*The Thing*” (2001 [1949]). This article will argue towards a strong correlation between Heidegger’s “thing”, Harman’s “object” and (to start with) enumerable algorithmic artworks.

The limits of human access are quite evident in Heidegger’s thinking with regards to “things”. To understand what Martin Heidegger means by the term “thing” and ultimately how it relates to our present discussion, we must revert back to *Being and Time*, (Heidegger 1962) and the memorable tool-analysis. Heidegger argues that our primary mode of dealing with the world is through the use of equipment, contextualised in human application (Heidegger 1962, pp.95-97). Heidegger’s favourite example is the hammer, but lets instead consider the contemporary contact lens. This thing, a piece of moulded plastic, is designed specifically to be ignored when in use (*Zuhandenheit*, or *Readiness-to-hand*) in order to facilitate the means of seeing and doing anything whatsoever (Heidegger 1962, p.98).

In dealings such as this, where something is put to use, our concern subordinates itself to the “in-order-to” which is constitutive for the equipment we are employing at the time; the less we stare at the hammer-Thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the unveiledly is it encountered as that which it is – as equipment. (Heidegger 1962, p.98)

Things such as these which are termed *Zuhanden* withdraw and remain invisible for the most part. Heidegger makes it clear in *Being and Time* that equipment-being, should also be seen as part of a larger contextual system called ‘World’. Tools only gain their significance according to the holistic context they situate themselves in (for example, a hammer gains a completely difference significance when used in a murder). However, consider the same contact lens when some obtrusive piece of grit enters, or even more frustratingly when it is lost on the bathroom floor (as can often happen to the contact lens wearer). Heidegger observes that in this case, what was the invisible unconcealed lens, is now *completely* at the forefront of our attention. When contact lenses reveal themselves to be inside out, or when hammers break, they become abstracted and break away from World’s reference. ‘When its unusability is thus discovered, equipment becomes conspicuous. This *conspicuousness* presents the ready-to-hand equipment as in a certain un-readiness-to-hand’ (Heidegger 1962, pp.102-103, original emphasis). Heidegger terms this mode *Vorhandenheit* (*Present-at-hand*) a mode which

also occurs when objects generally enter our awareness, or when objects can be “objectively” measured in space and time. Since his first publication, *Tool-Being: Heidegger and the Metaphysics of Objects* (Harman 2002), and other subsequent essays (Harman 2009) the contemporary philosopher Graham Harman, has taken the majority of Heidegger’s subsequent followers, (and at times even Heidegger himself) to task for misinterpreting the Tool-Analysis.

Harman reiterates that one would be mistaken if Heidegger elucidated a theory of simple hammers, contact lenses and computers in human praxis. Instead the tool-analysis is an *ontological* argument, and so it holds for all types of objects, despite Heidegger’s preference for archaic worlds, and sincere distaste for anything technological. We can clearly understand that light, molecular structure, pens and Macbook chargers, flip between *Zu* and *Vorhanden*. It refuses any distinction we can apply; Immaterial vs. Material, Natural vs. Artificial, any object can withdraw and refuse to be present, but it can also enter our awareness at any time. To make the invisible things visible, we even have to rely on the *Zuhanden* of instruments. There is nothing concrete other than this play of light and shadow.

If I observe a table and try to describe its appearance, I silently rely on a vast armada of invisible things that recede into a tacit background. The table that hovers visibly before my mind is outnumbered by all the invisible items that sustain my current reality: floor, oxygen, air conditioning, bodily organs. This is the meaning of Heidegger’s tool-analysis. (Harman 2009, p.2)

Tools are objects which we silently rely on in some indirect way. Harman argues that Heidegger likens the structure of *Zuhanden* as a deep ‘subterranean’ realm of tools, of which *Dasein*, can only experience inauthentically ‘as’ specific things in *Vorhanden*. (Harman 2002, p.18) He continues, ‘Equipment is forever *in action*, constructing in each moment, the sustaining habitat where our explicit awareness is on the move’ (Harman 2002, p.18, original emphasis). Harman’s focus on the executed effect of tools themselves rather than any application of a supposed unconscious, pragmatic human use, is used to counter what he understands as ‘a nearly universal error regarding the concept of readiness-to-hand.’ (Harman 2002, p.18) It is equally applicable for our interest in the executed effect of algorithms in artworks, disregarding any notion that the algorithms which artists author or expropriate can be regarded as inherently “useful” in any sense. Harman continues;

Equipment is not effective “because people use it”; on the contrary, it can only be used because it is *capable of an effect*, of

inflicting some kind of blow on reality. In short, the tool isn't "used" – it *is*. In each instant, entities form a determinate landscape that offers a specific range of possibilities and obstacles. Beings in themselves are ready-to-hand, not in the derivative sense of "manipulable," but in the primary sense of "in action." (Harman, 2002, p. 20, original emphasis)

I quote this passage in full, to render obvious the parallel between the full deployment of the executant algorithm (*Zuhanden*) and the reception of the beholder (*Vorhanden*). Conversely, it is now clear why Heidegger consistently laments the realm of present-at-hand throughout his entire career, Harman renders the argument trivial if we interpret the Tool-Analysis as a method for criticising "independent objects" in favour of the subjective bubble of consciousness or linguistic signs. *Vorhanden* exists *as the result* of human awareness, and is never independent of humans. Broken hammers and missing contact lenses are obtrusive *for us*, they attain *presence in phenomena*, and we impose mathematical formalisations onto natural physical objects ourselves. When analysed in this way, it is easy to understand Heidegger's contempt for technology, it reduces the depth-ness of tool-being to caricatured calculation.

Although Heidegger himself encourages this human centric view of tools (and never seems to escape this duality), Harman asks us to not follow Heidegger at his wishes by looking into the deeper layers of Dasein, thrown into the World of temporality; instead we should consider tools in themselves and their actual deployment. The nature of *Every Icon* has taken a bizarre turn in this conjunction. Combining this reading, it seems that whichever part of the enumerable algorithm we happily choose to make present, whether the generated icons, the mathematical formalisations, the HTML or the Java syntax of C++ of which it is constituted, there is always something inaccessible about the algorithm which hides away from us when in action, as with anything else. To simplify the essence of the work even more, *the algorithm cannot be located "as" presence but in action as an event*. Indeed, perhaps its strength lies in the knowledge that the trillion years or so worth of icon-images will also never be present to the current beholder.

Independent Things and Objects

Only by way of a rendezvous into the Tool-analysis, do we see what Heidegger means by the term "Thing." A "Thing" is essentially a more developed method for Heidegger to express the hidden realm of tool-being, separate from the as-structure of *Vorhanden*. Although Heidegger no longer uses the terms *Zu* and *Vorhanden* at this point, the similar two-fold of

terminology: withdrawn/present, clearing/sheltering, tool/broken tool, nearness/distance-less, Being/beings, is there for all to see. There are two elements of Heidegger's "Things" that I want to emphasize in the role of algorithmic aesthetics; firstly at this point for the denazified Heidegger, the hidden realm of *Zuhanden* has subtly shifted into a more independent terrain. Heidegger's early analysis on equipment was that, for reality to exist at all, Dasein must be on the scene, already engaged in the World. With the "Thing" however, Heidegger emphasizes that the withdrawn, executing nature of the jug does not rely on humans whatsoever. 'The jug remains a vessel whether we represent it in our minds or not. As a vessel the jug stands on its own as self-supporting.' (Heidegger 2001, p.165) "Things" are individual units of execution for Heidegger, in which they execute themselves whether humans pay attention to them or not. By the "Thing" executing its 'thinglyness', or by letting the 'thing thing', (Heidegger 2001, p.178) can we understand how such obscure statements such as 'If we let the thing be present in its thinging from out of the worlding world, then we are thinking of the thing as thing' (Heidegger 2001, p.178) can be understood. Secondly, Heidegger argues that the thing cannot be reduced to human production; there is something altogether other-worldly in a jug's execution;

The jug is a thing as a vessel—it can hold something. To be sure, this container has to be made. But its being made by the potter in no way constitutes what is peculiar and proper to the jug insofar as it is *qua* jug. The jug is not a vessel because it was made; rather, the jug had to be made because it is this holding vessel. (Heidegger 2001, p.166)

We can now understand why the argument has focused on the disinterest of the artist as producer. The execution of the enumerable algorithm cannot be reduced to artistic authorship alone. For Heidegger, it is the jug which executes the giving and the pouring, not the creator or the one enacting the pouring. As mentioned before, the algorithm is the one producing the work when coded, executed and set into motion, the "execute-ability" of the algorithm cannot be reduced to the maker. When the work is executed, the algorithm itself becomes an irreducible "thing". Once Tool-analysis and Things are viewed in this way, Harman then precedes to push this two-fold to its logical conclusion, which leads to a radical outcome. He contends that the Tool-analysis does not have any special relevance with human beings whatsoever. Instead the "Things" of which we know little, must have some degree of autonomy;

Whereas tool-being is permanently trapped inside of itself, locked in the performance of its reality, the as-structure is supposed to step beyond this underground of tools... Dasein is to be defined by

way of its “freedom”...freed in part from the concealment of being, we humans should be the negating animals. But it is important that we oppose this view of reality. *Ontologically* speaking, there is no difference between the activity of a trained human eye and the crash of two colliding boulders. (Harman 2002, p.225)

The realm of present-at-hand is applicable not just for humans, but for any entity whatsoever. Harman holds that brute causation, the interactions between substances, can only be viewed “as” mindless when there is a supposed consciousness, mistakenly perceiving its own inner struggle. When put through the mill of the Tool-analysis, the role of execution and perception in all entities becomes an unavoidable mode of a existing in a realist ontology, where rocks, dogs, shoeboxes, billiard balls, atoms, websites, canvas, watches, Communist Russia, Batman, HTML elements, hammers, contact lenses and algorithms all exist as sheer execution, only to be perceived ‘as’ something in its local vicinity by other objects of equal independence. But this connection is always one-sided; we can view the enumerable algorithm in *Every Icon* as a collection of counted images, only by the logics we possess, not as a negating dialectical being. The same is true of another beholder viewing the website, or the HTTP protocol which affords the downloading of the applet, or the depth of black in the pixels the algorithm uses, or the bafflingly complex Terms and Conditions John F. Simon Jr uses to copyright the piece. Equally, we can imagine the almost infinite amount of objects which simply ignore this withdrawn execution, dogs, computer desks, heartbeats, my partner’s migraine. Consider two billiard balls;

When one billiard ball strikes another, it treats its victim as a simple mobile mass, and remains unattuned to its other concealed treasures – the richness of its imperfect plastic texture, its suddenly irrelevant color or its vague synthetic fragrance. No object ever unlocks the entirety of a second object, ever translates it completely literally into its own native tongue. (Harman 2002, p.223)

It is the doctrine of an Object Oriented Ontology¹⁰ (Harman 2002, p.217), the realist study of objects as vigorous units, executing themselves by themselves

¹⁰ Although Harman is credited with coining the term, a number of other academics have independently reached similar conclusions through their own research. Contemporary philosophers such as Levi Bryant and Steven Shaviro have expressed similar agreements on the independency of objects through their readings of different sources. Videogame scholar, Ian Bogost, has also written extensively on the connections between computational expression and unitary objects (see Bogost 2006)

autonomously, because ‘Real objects exist, whether we like it or not’ (Harman 2009, p.195). No matter what size, or what relation, objects fill the cosmos. What separates Object Oriented Ontology from other realist ontologies¹¹ are the withdrawn, non-present modalities of objects; Harman promotes a philosophy of causation where objects withdraw from us and from each other, objects are completely sealed off by their firewalls. Harman’s term for this is ‘vicarious causation’; (Harman 2005, p.147) an object’s essence can be located within its interior, altogether separate from its relations. Whilst this recent shift into realist philosophical thinking is certainly welcome as an alternative to singular ‘materialism’, I leave the interior of objects momentarily, in order to concentrate on the other side of enumerable execution; the beholder experiencing the work “as” an aesthetic piece of work. The beholder (an equally participating object), must somehow experience the artwork “as” artwork, otherwise if it becomes impossible to distinguish artwork from non-artwork, then we risk an unhelpful subjective proposition which gets us nowhere. The role of aesthetics cannot begin with objects that refuse to be present. But how can this be, when we have just spent the last couple of pages, not only identifying that tools, objects and algorithms are always deeper than anything we make of them, but also that *any object qualifies as a tool-being?*

Aesthetic Essence.

What is at stake in this conflict is whether the paintings or objects in question are experienced as paintings or as objects: and what decides their identity as painting is their confronting of the demand that they hold as shapes. Otherwise they are experienced as nothing more than objects. (Fried, 2002, p. 824)

To the Modernist art critic or art historian, the idea of returning to the philosophical autonomy of artworks immediately provokes a euphoric feeling of “We’ve been here before!” And to the post-formalist art critic or historian, we might also hear a more lamentable cry of “We’ve been here before!” It is worth contextualising here, the American art critic Jack Burnham and his exploration between information technology and post formalist arts practice, which occurred in the late 60s, early 70s. Several recent essays have pointed to the historical occlusion and contemporary relevance of his writings (Burnham 1968) within the wider interrelationships of technology, art history and art criticism. (see Skrebowski (2006), Shanken (1998; 2002) and Holmes

¹¹ Such as Actor Network Theory, (Latour 2007), (Law and Hassard 1999), or a Deleuzian inspired, non-essentialist, topological ‘degrees of freedom’ virtual philosophy of assemblages, (DeLanda 2005; 2006).

(2009)) Edward A. Shanken (1998; 2002) has written on the missed encounters between “art-and-technology” and Conceptual Art, arguing that Burnham had drawn equal theoretical parallels with his appropriation of Bertalanffy and Weiner’s “Systems Theory”. Artists such as: Roy Ascott, Les Levine, Joseph Kosuth and Hans Haacke, worked with early computer software and networked systems of information as allegorical tools for creating artworks which interrelated with the linguistically charged, process oriented practice of conceptual art;

For many artists working at the intersection of conceptual art and art-and-technology, the particular visual manifestation of the artwork as an object was secondary to *the expression of an idea that becomes reality by simulating it...* But whereas computer software has an instrumental relationship with hardware, coordinating its operation, the artists propositions function as meta-analyses of the phenomenological and linguistic components of meaning. In other words, they demand that the viewer examine the process of processing information, *while in the process of doing so.* (Shanken 2002, pp.436-437, original emphasis)

The art ‘object’ and the technological object were not of primary concern, only the conceptual methodology of ideas which objects served. Burnham is defended by Luke Skrebowski in anticipating the paradigmatic transition from an ‘*object oriented to a system oriented culture*’ (Skrebowski 2006, original emphasis) or as Burnham emphasised, ‘The traditional notion of consecrated art objects and settings will gradually give way to the conclusion that art is conceptual focus.’ (Burnham, 1970) Software acts as a post-structural metaphor for a decentred and non-hierarchical type of conceptual focus. The idealistic beholder is no longer the one holding an independent object, but the one implicated into a relational system of biology, capital or signs. One could argue that this logic of the “relation of relations” (Skrebowski 2006) becomes overwhelmingly prevalent within Nicolas Bourriaud’s *Relational Aesthetics*, and critically prevalent in software art or net.art. To another *Artforum* critic, Michael Fried, all of this logic can be traced back to one term; ‘Theatricality’, where the artwork is conceived from its initial construction as *already* implicating the viewer in a system;

Literalist sensibility is theatrical because, to begin with, it is concerned with the actual circumstances in which the beholder encounters literalist work...Whereas in previous art ‘what is to be had from the work is located strictly within [it],’ the experience of literalist art is of an object in a situation – one that, virtually by definition, includes the beholder. (Fried 2002, p.825)

For Fried, the magical “X” which defines an autonomous essence of art from an object (or object-hood), can be found in the artwork alone and not through the situation of beholder and artwork implicated through one another. Fried’s notion of “Absorption” is widely known as this term for depicting the sealed-off ontological space within artworks, in which figures, shapes and forms are thoroughly “absorbed” in their everyday practice. In *Absorption and Theatricality* (Fried 1988), Fried analysed the Chardin painting *The House Of Cards*¹² as indicative of Absorption through the juxtaposition of the two foregrounded playing cards (Fried 1988, pp.48-49); ‘...the face card... emblemizes the fact that the picture surface itself faces the beholder (is entirely open to our gaze) whereas the dazzlingly blank back of the second card evokes the sealed-off consciousness of the young man absorbed in his apparently trivial pastime.’ (Fried 2007) It is in the object which absorption and the unawareness of the everyday (Fried 2007) must reside, as if ‘by binding those figures together in a single, unified composition—to deny the presence before them of the beholder or, to put this more affirmatively, to establish the ontological fiction that the beholder does not exist.’ (Fried 2007, p.500) For the beholder too, Absorption occurs in genuine artworks, as the beholder is genuinely absorbed in the artist’s “World”.

One can follow a similar argument within Heidegger’s famous remarks on the essence of “art” (Heidegger 2002), but rather than engage with Heidegger’s artworks directly (which would be a paper all by itself), instead we should read the essay as an intermediary piece between the uniquely human reliance of tools in “Being and Time” and the later independence of execution in “The Thing.” When discussing artworks, the invisible withdrawn effect of tools and equipment is suddenly irrelevant for Heidegger, as the essence of art is altogether different. ‘The work, then, is not concerned with the reproduction of a particular being that has at some time been actually present. Rather, it is concerned to reproduce the general essence of things.’ (Heidegger 2002, p.16), Heidegger side steps the issue of representation and argues that the essence of art “sets up” a “World”; note that the term World is now used in understanding how artworks explicitly show the invisibility of equipment within its World. The essence of art in artworks is to actually make the art “work”; it is the place where ‘the truth of beings has set itself to the work.’ (Heidegger 2002, p.19) For Heidegger, genuine artworks are different because they show tool-beings for what they are, executing tools in a World. Furthermore the space in which the artwork shows off a World is integral to the expressiveness of the artwork; this expressiveness comes from the artworks “as” strife between World and Earth. Heidegger now employs

¹²Jean-Baptiste-Sime´on Chardin, *The House of Cards*, ca. 1737, oil on canvas. Andrew W. Mellon Collection, National Gallery of Art, Washington, D.C. _ 2006 Board of Trustees, National Gallery of Art.

the term “Earth” to express the hidden ontological depths of things. Heidegger uses an example of a Greek Temple as a non-representational work, which can only exist “as” art when it belongs to a World, and allows us to see the independency of things for what they are.

In Fried’s recent essays and his publication on contemporary photography, he argues that Absorption is again a recurrent issue for contemporary photographers; it is significant in Jeff Wall’s photographs such as, *Adrian Walker* and *Morning Cleaning* where Fried celebrates Wall’s mission, to build a clear window onto the everyday. He even uses Heidegger’s Tool-analysis, to show how equipment is ontologically ‘ready to hand’ in the work, as caught in its everyday use. Artistic absorption is this very opening up of human “World” within objects. In both cases we find two different traits, which are both understandably human centered; Heidegger and Fried’s *aesthetic oriented idealism* of Absorption and Jack Burnham’s *system oriented materialism* of networked conceptual systems. By invoking Graham Harman’s *realism*, I now hope to conclude with a brief outline of an aesthetics which does not dispense with objects in favour of relations, but also does not privilege some artistic objects “as” more artistic as others.

Algorithmic Allure

In *Tool-being*, Harman identified a bizarre realism, whereby objects and tools are cordoned off from each other, retreating into inner depths, from themselves and each other. In this case, how do objects interact with each other at all? How can *Every Icon*’s enumerable algorithm actually have an aesthetic impact on a beholder, and yet be a different experience from our ordinary perception of objects; and finally if this is the case, how can the algorithm resist being present to an almost infinite number of other objects in the same vicinity?

In February 2008 (Harman 2008), Harman performed an “object oriented” reading on Heidegger’s seminal essay and in turn criticised the strife between World and Earth as already evident in the ontological execution of tools and their visible presence in Tool-analysis. As we have already seen, Heidegger’s “strife” is evident with any object whatsoever, not just privileged artworks. However in the Bournemouth talk, Harman states quite specifically on why we should not give up on aesthetics, because as we will conclude, we should look within the interiors of objects for a much more general aesthetic effect. How can ice cream ooze and melt in the dense summer heat? How can an unmodified, re-positioned urinal change the way we understand artistic integrity? And more importantly how can an enumerable algorithm devastate our mortality by making good on mathematical procedure? In a follow up

publication (Harman 2005), Harman effectively deals with how objects attain relationships with one another. It occurs through the notion of special type of event called “*allure*”, which appears most prominently in *Guerrilla Metaphysics*, the essay *On Vicarious Causation* and it is also briefly mentioned as a result of the criticism of Heidegger’s artwork essay in Bournemouth. The word “*allure*” is a helpful one for Harman as it;

...pinpoints the bewitching emotional effect that often accompanies this event for humans, and also suggests the related term ‘allusion,’ since allure merely alludes to the object without making its inner life present. (Harman 2007, p.215)

Right from the start, allure is not an experience in which humans, animals or inanimate objects directly interact with the objects or things in themselves, as for Harman (and for Heidegger) this is fundamentally impossible. By combining Harman’s allure with enumerable algorithms, we will soon understand that even in this special circumstance the executant algorithm still cannot be made explicitly present; as allure, ‘plays out entirely in the realm of relations, not that of things themselves’ (Harman 2005, p.143) The only hope we and other objects have, is to have access to a set of present-at-hand aesthetic tools which allude to the inner depths of things and in turn expose new worlds. In Fried’s terms, the inner execution of the algorithm is its very object-hood, its actuality of being. The absorption element occurs in allure, and rather than mistakenly situate this golden phenomenon between transcending human beholders on one side and simple canvas, marbles, projection screens and algorithms on the other, it occurs between all levels and with all objects. A realist study of aesthetics must take several more steps than Fried would ever envisage, and not just understand the hidden absorption between painting and beholder, or even between artwork to artwork in an executing exhibition, but also to the infinite depths of simple things executing themselves.

Relations between all real objects, including mindless chunks of dirt, occur only by means of some form of allusion. But insofar as we have identified allure with an aesthetic effect, this means that aesthetics becomes first philosophy. (Harman 2007, p.221)

In *Guerrilla Metaphysics* Harman reconfigures the realm of appearance in phenomena itself alongside readings of Husserl, Levinas, Merleau-Ponty and Lingis, to suggest that once more, objects play the starring role in phenomena as well as in the withdrawn realm, not just abstract sense-data. These intentional objects may be different kinds of objects from the withdrawn ‘real’ ones they attempt to copy as caricature, but for Harman they are objects nonetheless, even in hallucination. He argues that these ‘Sensual Objects’

(Harman 2007, p.192) exist as unitary objects in perception, which are, by definition dependent on real objects and do not withdraw whatsoever;

For here is a zebra before me. Admittedly, I can view it from an infinite variety of angles and distances, in sadness and exultation, at sunset or amidst driving rain, and none of these moments exhaust all possible perceptions of it. (Harman 2007, p.194)

The intentional zebra exists as a unitary thing, distinct from all the other perceived sensual objects in the viewed vicinity. Harman's rule of thumb: Real objects withdraw in execution and are always more than we can make of them, sensual objects are forever present and are always less than what we can make of them; when algorithms are present to me "as" something or present to anything as something, they exist as *sensual-images* and are always loaded with accidental features and profiles, of which I, a real object cannot control. Harman uses an inspired reference in a preface written on metaphor by Jose Ortega y Gasset (1975 [1914]), which slots in perfectly for the discussion of algorithms and artworks. Ortega argues that there exists only two well-trodden modes, *execution* and *image*, (Harman 2005, p.103) the human beholder's consciousness is nothing but an executant actor, much like the algorithm we are striving to present. It holds good for all things, '...Everything, from a point of view within itself, is an 'I''. (Ortega 1975, p.134) Harman holds true Ortega's quote 'This is the task of language, but language merely *alludes* to inwardness – it never shows it' (Ortega 1975, p.138, original emphasis) and later states, 'the fate of language, as of perception is to forever translate the dark and inward into the tangible and outward, a task at which it always comes up short given the infinite depth of things.' (Harman 2005, p.105) For Ortega metaphor reveals itself as tension between two or more sensual images. In Harman's terminology;

When the poet writes 'my heart is a furnace,' the sensual object known as a heart captures vaguely defined furnace-qualities and draws them haltingly into its orbit. The inability of the heart to fuse easily with furnace-traits (in contrast with literal statements, such as 'my heart is the strongest muscle in my body' achieves allusion to a ghostly heart-object lying beneath the overly familiar sensual heart of everyday acquaintance. (Harman 2007, pp.215-216)

New sensual parts emerge from this heart-furnace encounter, as they mysteriously fuse their elements together at the expense of others, to create a new sensual object-metaphor, which alludes to a real object not present. Harman argues that the same result emerges from the pulling apart of sensual objects to reveal new sensual objects, as in the cases of human tragedy,

humour, courage or perhaps, more familiarly when hammers contingently break; they release a brand new object of sensual disappointment, as well as direct our attention to ‘a concealed hammer-object...from the darkness, at a distance from its previously familiar traits.’ (Harman 2007, p.216) Redirecting our concern towards *Every Icon*, our relation with the piece could potentially unveil brand new sensual objects which intimately change the beholding real object enough to warrant a new real object between the two, and allude the execution of its interior. For things to communicate in this post-Heideggerian ontology of sealed off objects, allure is the only method for objects to converse with each other’s caricatured hidden depths.

one object translates another in a more or less adequate way, and does so precisely by allowing the object to manifest itself as something more than all of its current effects in the world. Perception, intelligence, and language all serve as ways of translating objects into a sphere where objects come to be at an issue for us. (Harman 2005, p.245)

Furthermore, our encounter with the algorithm in the form of endless sensual images can only be viewed as a one way process from the beholder; ‘A real object meets only the shadow of another, thereby allowing effects to proceed *asymmetrically* in one direction alone.’ (Harman 2009, p. 147) Because of Heidegger’s re-evaluated tool-analysis, we can see why object oriented causation *can only be* vicarious; we endlessly speculate on the appearance of the enumerable algorithm, whilst the object in question is undisturbed by our turmoil. Allure works by building a new relation between me and the executant algorithm, through a contingent practice. The alluring sensual images we witness allude to the hidden algorithmic-object in action.

In this sense, Heidegger and Fried are especially helpful in articulating artworks as completely sealed spaces of consciousness, which do not need a theatrical grounding of the beholder in order to function. But as we have seen from Harman, Heidegger’s tool analysis *already does this with simple objects*. Objects are *always-already* absorbed in their surroundings, inflicting forces on each other without prior care or resentment. Human consciousness is no better off than tectonic plates, billiard balls or digested chocolate. Also, one cannot fall into the trap of placing enumerable algorithms in the post-formalist tendency of system based networks or process; relations do not come first, real objects do.

My intention here is to embellish enumerable algorithms as an overlooked illustration of *realist aesthetics*; a term which by now should distance itself from the history of pulling back “Trompe l’oeil” curtains to fool Parrhasius, or to reveal the narrow psychoanalytic uncanny. Instead realist aesthetics

should track the hidden depths within an objects communicative passageway, and algorithmic artworks are well placed as an introductory case study; they offer a more literal example of a tool's execution rather than canvas and oil paint. I have focused on enumerable algorithms for two reasons; firstly, to engage with the limits of appearance when beholders approach these types of work, and secondly to highlight their apparent non-participatory structure. By focusing on this lack of user-engagement (its usability so often associated with artworks and new-media), I wish to provide an example of Harman's vicarious causation at work. To deny our engagement with the piece, or to strike back at the enumerable algorithm and halt its functioning would be perfectly feasible; but if one were to do so, we could suggest that the result of such a cause would provide a different type of allure for the algorithm in question.

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