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## The Phenomenology of Videogames

Jesper Juul has convincingly argued that the conflict over the proper object of study has shifted from “rules or story” to “player or game.” But a key component of digital games is still missing from either of these oppositions: that of the computer itself. This paper offers a way of thinking about the phenomenology of the videogame from the perspective of the computer rather than the game or the player.

Consider for a moment some of the things that might be happening in the world right now, as you finish reading this sentence: *Smoke vacuums through the valve, grommet, and hose of a hookah; and enters a pursed mouth. The dog teeth of a collar engage a gear against the layshaft coupling of a transmission assembly. The soluble cartilage of a chicken neck decocts from the bone into the stock of a consommé.* These and other interactions between objects constitute different moves in the material world. From our perspective as humans, they correspond with actions we know quite well: smoking, shifting, or cooking, for example. Traditionally, the human experience portion of such interactions would fall into the domain of phenomenology, the philosophical approach to how things appear in people’s experiences, from a first-person point of view. This can include perception and thought, but also memory, emotion, or social activity. All are human activities, the understanding of which helps explain the taste of the honey-sweet ma’sal heated under the charcoal in the hookah’s bowl, or the sensation of a foot on a clutch as the collar of the synchro obtains a friction catch on the gear, or the smooth, thin appearance of broth as it separates from fat and bone in the soup pot.

But for the hookah, the gear, or the chicken, what is going on? Phenomenology gives us few tools with which to answer this ques-

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in: *Conference Proceedings of the Philosophy of Computer Games 2008*, ed. by Stephan Günzel, Michael Liebe and Dieter Mersch, Potsdam: University Press 2008, 022-043. <http://pub.ub.uni-potsdam.de/volltexte/2008/2454/> [urn:nbn:de:kobv:517-opus-24547]

tion: American philosopher Graham Harman has suggested adapting Martin Heidegger's famous tool analysis as a way out of this quandary. A quick refresher: in *Being and Time*, Heidegger suggests that objects are impossible to understand *qua* objects. Rather, they are related to chains of purposes that make speaking of hammers or hookahs or gearshifts as objects problematic. Objects become ready-at-hand (or *zuhanden*) when contextualized. Heidegger argues that objects are most visible when they cease to conceal themselves in contexts. The broken tool sheds light on the tool: when the hose of the hookah bends and catches, preventing air and smoke from drawing through it; when the teeth of the collar grinds as it fails to engage with the gear; when the consommé boils and its froth breaks up, clouding the broth. Heidegger calls this state present-at-hand (*vorhanden*). His favorite example is the hammer, which offers the activity of nail-driving, something we look past in pursuit of a larger project, say building a house. Harman suggests that tool-being is a truth of all objects: there is always something hidden, inside, which remains entirely inaccessible (Harman 2005:26, 49). Flying in the face of Heideggerean traditionalism, Harman argues that objects do not relate through "use," which implies "human use". Harman refuses to take *Dasein* as the center of ontology. Instead, there lies the tool-being. He calls his an "object-oriented philosophy" (Harman 2002:49).

## Speculative Realism and the Phenomenology of Videogames

Harman's approach is part of a broader trend in philosophy that has recently been dubbed "speculative realism". In addition to the American Harman, the core cabal of speculative realists includes Britons Ray Brassier and Iain Hamilton Grant, and French philosopher Quentin Meillassoux. A common feature of speculative realists is their distaste for the philosophical tradition descending from Kant, including

the popular trends of the twentieth century, of which phenomenology is perhaps the primary example. The speculative realists main objection accuses philosophy of over-privileging the human being in general, and human experience in particular. As such, speculative realism also offers a critique of continental philosophy of the last century different from the all too familiar fly-swatting of anglo-american analytic philosophy. For cultural and media studies, of course, the phenomenal tradition exerted the most influence on the obsession with language of structuralism and poststructuralism. This, too, bothers the speculative realists, for whom the linguistic turn represents yet another privileging of the human.

At first glance, speculative realism might bear some resemblance to certain ecological arguments against anthropocentrism. Environmental philosophy has sometimes argued that humankind is to ecology as is man to feminism or Anglo-Saxonism is to race. Militant environmentalists like Dave Foreman have argued for the relevance of forest and wildlife as equal in status to humans (Foreman 1993:2-3). The problem with the ecological analogy is that it, too, preserves man as a primary actor. Either the future survival of man motivates environmental concern, or natural creatures like kudzu and grizzly bears are meant to be elevated to the same status as man. In every conception of environmental holism, from John Muir to James Lovelock, all beings are given equal absolute value and moral right to the planet – so long as they are indeed living creatures. From the perspective of speculative realism, life is still in the foreground, the reference point for thought or action.

In ecology, an alternative perspective might look more like the one journalist Alan Weisman takes in his bestselling book *The World without Us* (2007). The book documents the things that would take place if humans were to suddenly vanish from earth. Subways flood; pipes cool and crack; insects and weather slowly devour the wood frames of homes; the steel columns of bridges and skyscrapers cor-

rode and buckle. Weisman does not speculate about how humans might disappear – through nuclear annihilation or heavenly rapture, for example – but rather breaks the tool that is humanity’s presence, allowing the objects of our constructed world to move into the foreground.

Yet, even Weisman’s approach does not reach the level of unconcern for the role of the human in speculative realist thinking. This unconcern does not amount to disdain, mind you, but merely disinterest. Says Harman of the “carnal phenomenologists,” those concerned with how human bodies encounter the world, “this sensual medium... is really just the *human* face of a wider medium that must exist between all the objects of the world” (Harman 2005:3). It is not just the grizzly and the kudzu and the tree sloth and the tuber, but also the granite and the sea foam and the tarmac and the sickle whose interactions are worthy of philosophical attention. Focusing on the way entities in the world interact with each other opens a new domain for philosophy, one the discipline has ignored actively for the last hundred years, and passively since the pre-Socratics. I turn to Harman here in the hopes of finding a new model for understanding the phenomenology of videogames. But as you may have guessed already, I hardly intend to use “phenomenology” in the customary sense. To understand how, we must take a quick trip down a well-trodden path in game studies.

## From Rules and Narrative to Games and Player ... and Beyond

Reflecting on the end of the first wave of game studies, Jesper Juul has observed that our conflict is no longer one of ludology or narratology – the question of whether games are first systems of rules or stories (Frasca 1999). That was a quarrel about the nature of the medium. Now, suggests Juul (2008), the field has progressed toward

a conflict over the proper object of study: is it the game, or is it the player? Critical approaches, no matter their method, tend to focus on games, seeking to understand and document their meaning along with the cultural relevance of that meaning. Social scientific approaches, again no matter their method, focus on players, seeking to understand and document what they do with games and how they do it. This is a conflict inherent in these approaches, one palpable in today's game studies milieu.

Among Juul's suggestions for moving forward is a focus on bridge-building. Taking casual games as a test subject, Juul imagines how both game- and player-centric approaches can inform one another in a kind of dialectic. To be sure, collegiality and bridge building are all fine, especially in a field as interdisciplinary as game studies. Certainly studies of how and why players use games might offer valuable insights into the way games are constructed, and vice versa, the way games are constructed might offer valuable insights into how people think to use them. Yet, there is something amiss in both approaches that a bridge over troubled waters cannot ford. To wit, both privilege the human actor unduly. Studies of either mechanics or communities still rely on human beings as a prime mover. For the critic, the representational aspects of games involve humans' ability to apprehend meaning, just as the consommé involves humans' ability to taste. For the ethnographer, the social aspects of games involve humans' ability to interact with one another, just as the hookah acts as a centerpiece for conversation.

Talking about the phenomenology of videogames in reference to either the game- or player-centric mode of analysis holds no surprises. The phenomenal aspects of games, like images, sounds, controller buttons, and vibrating rumble motors, all trigger perceptions in their human players, who somehow assemble these inputs and outputs into action, reaction, and meaning. These perceptions function differently from those of other media forms. There are still interesting

“traditional” phenomenological questions at work here, for example: How do players perceive billboard-style advertising in games, and how does that perception differ from the way they perceive such advertising in traffic or on the subway? Likewise, games’ phenomenal aspects mediate human community. The ways people understand and negotiate this community differs too from other media forms. For example, the way a human player is perceived by another via his avatar might be considered a phenomenal problem as much as an epistemic one. Thus, the lore of surprise when a large WORLD OF WARCRAFT (2004) guild discovers that its leader is an eleven year-old.

But these are not the phenomenological questions that ought to interest us – at least, not the only ones: If we take Harman’s suggestion seriously that objects recede interminably into themselves, then appearances only represent one small slice of an object, the one that happens to intersect with another object in one way or another. Human perception becomes just one among many ways that objects might relate. We need not discount criticism or sociology in order to admit that they do not tell the whole story. The sphere I have in mind is that of all the objects at work in videogames under the surface, hidden in their “subterranean dimensions.” Consider this: videogames are comprised of molded plastic controllers, motor-driven disc drives, silicon wafers, plastic ribbons, and bits of data. They are likewise comprised of subroutines and middleware libraries compiled into byte code or etched onto silicon, cathode ray tubes or LCD displays mated to insulate, conductive cabling, and microprocessors executing machine instructions that enter and exit address buses. All of these aspects of videogames could be construed as “objects” in Harman’s sense of the word: individual beings in themselves, things with a footprint on the world. These sorts of objects are unique to videogames compared to many other sorts of things whose meaning or social power might be observed and studied, like board games or

motion pictures or taverns or campfires. The question that concerns me here is this one: *What do these objects that constitute our videogames perceive?*

## A Pragmatic Speculative Realism

Harman borrows a page from Alphonso Lingis, who takes Merleau-Ponty's idea that "things see us" even further, entering into negotiations with other things. But there is a problem: if, as Harman believes, objects recede from one another, forever enclosed in the vacuum of their individual existences, how do they ever interact? Smoke and mouth, collar and gear, cartilage and water all seem to do things to one another. Likewise, button and input bus, instruction and arithmetic unit, radio frequency and electron gun also seem to interact. Moreover, all of these factors come together as one thing, a particular videogame, rather than remaining forever segregated as so many bits, charges, and frequencies. Harman calls it "vicarious causation" (Harman 2005:91-93). Things never really interact with one another, but fuse or connect in a solely conceptual fashion, but one that has nothing to do with human consciousness. These means of interaction remain unknown – we can only conclude that some kind of proxy breaks the chasm and fuses the objects without actually fusing them. Harman uses the analogy of a jigsaw puzzle: "instead of mimicking the original image, [the jigsaw puzzle] is riddled with fissures and strategic overlaps that place everything in a new light" (Harman 2007:202). From here, we can understand the way objects relate by understanding their objectness and then tracing the fissures.

In Harman's view, there is something that does not recede in objects, qualities that "sever" from the objects and allow us to, in his words, "bathe in them at every moment" (Harman 2005:150). There is a kind of sensual ether in which objects float. When they interact, these objects do so only by the means they know internally, but in relation to the qualities in which they "bathe". In a move he is com-

pletely serious about, Harman equates such interaction with metaphor (Harman 2005:98). Objects try to make sense of each other by means of the qualities and logics they possess. In so doing, something always reveals, and something else always recedes. When objects metaphorize one another, each understands part of another in abstract, enough for the one to make some sense of the other given its own internal properties. Harman sometimes likens the process to caricature: a rendering that captures some aspects of someone else at the cost of other aspects (Harman 2005:94).

This is strange stuff. The “speculative” part of speculative realism makes good on its promise of conjecture. Harman has used the term “weird realism” to underscore his own knowledge of the perversion inherent to his theory (Harman 2008:202). The weirdness serves a purpose: mustering fundamentally human concepts, like allure, highlights the way objects only have the ability to understand – and that is an overly human-centered word for it – other objects by grasping the receding object’s “notes” in relation to its own.

Despite its refreshing charm in the wake of an increasingly tiresome world of post ‘68 theory, a few questions elude solution through tool-being and vicarious causation. Harman hopes to push phenomenology beyond the ghetto of human perception – but he does not intend to expunge human perception from philosophical inquiry, just to de-emphasize it. We are objects like any other, along with the rocks and dragonflies and lighthouses. In fact, as the tool-analysis makes clear, in many cases people are somehow entwined in the creation, use, and destruction of these objects.

I am seduced by the speculative realist rejection of correlation with experience. I feel this way because the material undergirding of a variety of experiences does indeed rest in the hands of objects in the world rather than in human apperception or, God forbid, in natural language. Yet, questions remain: even if we accept the critique of correlationism, the rejection of phenomenology and the linguistic



turn as overtly, selfishly anthropocentric, how do we deal with things in themselves that are also complex structures or systems crafted and used by humans? And how do we, as humans, strive to understand the relationships between *specific* objects in the world, relations that go on without us, even if we may be their cause, subject, or beneficiary? How do we understand the hookah or the integrated circuit as a thing left to itself and a thing interacting with other things, human beings among them?

Harman's answer is something like this: the idea we have of things is really present, but the things themselves still withdraw infinitely. Meillassoux's (2008:29, 64) is somewhat different: things are mathematically thinkable even if not sensible. These answers are theoretically rich but difficult to muster in practice. Despite its luridness, speculative realism remains a philosophy of first principles. It is not concerned with particular implementations, although it is also not incompatible with them. The speculative realists do not (yet) make claims about how to deploy their methods. And yet, if its goal is to make redress against Kant's Copernican Revolution and restore the primacy of objects themselves, speculative realism would seem to have particular need for an extension beyond first principles, such that it might offer insights into the operation of particular objects.

Perhaps the theory I seek is a *pragmatic speculative realism*, an approach that need not become a method, but one that nevertheless emboldens the *actual* philosophical treatment of *actual* material objects and their relations. Such an idea may seem counterintuitive or even antithetical. Can such extreme speculation ever be grounded? Yet, other speculative practices have managed such a balancing act. Take speculative fiction or magical realism, for example. The former, advanced by Robert Heinlein in 1948, covers literature that speculates about possible worlds that are unlike our own, but in a way that remains coupled to the actual world more than the term "science fiction" might allow (Heinlein 1990:49). Speculative fiction is fantastic,

yet somehow grounded. Likewise, magical realist authors like Gabriel García Márquez, Salman Rushdie, and Isabel Allende treat magic and myth as real, that is, they admit that the spectacular is real insofar as it actually comprises aspects of human culture. In cases like these, the philosopher's tendency to abstract takes a backseat to the novelist's tendency to specify. The result is something particular whose branches bristle into the canopy of the conceptual. Perhaps a similar strategy can both help illuminate the phenomenology of videogames and offer an approach to the pragmatic speculation on objects and their interrelations.

## The Phenomenology of Videogames

Several years ago I advanced a general theory of the interactions of concepts that I dubbed "unit operations." I described unit operations as "modes of meaning-making that privilege discrete, disconnected actions over deterministic, progressive systems" (Bogost 2006:3). In this original context, I was primarily concerned with expressive signification across media: literature, film, art, and videogames. Nick Montfort and I have recently called the coupling between material constraint, creativity, and culture "platform studies," an analytical mode that explores how the computer platform is relevant to a particular work, genre, or category of creative production (Montfort/Bogost 2009:14-17, 145-150). For example, the nature of the Atari Video Computer System's graphics registers constrained Warren Robinett's adaptation of Crowther and Woods' text-based ADVENTURE (1976) into the graphical adventure game of the same name (1980), in so doing establishing the conventions of the latter genre. In platform studies, we shift that focus more intensely toward hardware and software as actors.

Platform studies advocates an approach to understanding creative computing, to characterize the way software and hardware influences the construction and reception of expressive artifacts. Likewise,

unit operations focus on the ways meaning gets encapsulated and transmitted across media. Both remain human-centric affairs, ones concerned with the creation and reception of computer media by ordinary people. But, a combination of these two inches closer to a phenomenology of videogames.

In addition to a focus on meaning, in *Unit Operations* I also offered pointers to a more general philosophical use of the term: unit operations are gestures that take place between things. Sure, “units” could signify humans and puppies; and “operations” could mean love and chastisement. But “units” could also mean teabags and water, rubber and asphalt, pine-cone and sylvan breeze, space debris and gravitational field; “operations” could equally refer to steeping, friction, hoarding, or accretion. Likewise, “units” could suggest cartridge casing, coaxial cable, shag carpet, etched silicon, or RF converter; and “operations” could point to insertion, transmission, tousling, electrification, or any of the myriad interactions these and other components of computing systems partake in while human players stare and manipulate, oblivious.

Such an approach affords more respect for Harman’s world of subterranean activity, be it with hand, joystick, processor, phosphor display, or anything else chained together and apart in ways that remain invisible to human, squirrel, and sofa alike. The videogame phenomenologist is not he who seeks to understand how a human player perceives the sounds and images and tactile sensations that comprise the videogame playing experience, but rather he who seeks to understand how the myriad objects that constitute videogames relate to one another. – But how would one perform a phenomenology of videogames concerned with the way the machine perceives its own internal and external states independently of whether and how the human player views or manipulates the artifact? Such work is surely speculative, but also concrete. I will offer two starting suggestions, one more familiar and one less so.

## Method 1: Analysis

One way to work toward a pragmatic speculative realist videogame phenomenology is the familiar one: through contemplation and evaluation, with findings synthesized into written argument. – Consider this: from early forms of the book like parchment and clay, and from fine arts like painting, we inherit a misconception about inscription. Structuralism and poststructuralism's obsession with semiotics as a universal acid wash have not helped. The surface of the page or the canvas extend in space, allowing the scribe or painter to attack any point of the surface directly and immediately, in the way that we seem to perceive such surfaces. At the very least, one must admit that surfaces support depth as well, such as the grooves of cuneiform or the textures of oil paint. The surfaces of these substrates accept reed or quill or brush, not letter or word or tree.

Despite great differences in the tools for inscription, photography maintains the materiality of surface. A film emulsion contains silver-halide crystal grains. When struck with light, the molecules release an extra electron from the bromide ion, which jumps to the positively charged silver ion. The silver ion is in turn transformed into metallic silver, creating a small covering of silver on the film. When a photographic emulsion is exposed, photons focused from an optical surface hit the surface all at once, and silver regions are created all over the emulsion at different intensities, producing a faint image. Photographic development enhances this image. A digital charge-coupled device (CCD) works in much the same way as a film emulsion; it is made of silicon rather than silver-bromide, covered with individual light-sensitive cells which record individual pixels of an image.

Like photographs, cinematic frames are captured all at once, as photons strike the emulsion of the film plane. Moving images are comprised of multiple photographic exposures captured rapidly in sequence and then replayed through a magnifying lens. The way a

film emulsion or a CCD perceives an object, to metaphorize the process, is not some detail of human agency. It is a material process that deserves some attention before questions of agency, reference, meaning, or criticism. The influence of photography and cinema on television – essentially the same device on which most computer images are displayed – can cloud our understanding of how computers construct visual images. It is tempting to imagine that an image like the seemingly simple combination of mazes and abstract tanks in the Atari VCS game COMBAT (1977), is drawn like a painting or a photograph. In fact, the computer's perception of its world is even less like the canvas or celluloid's.

The earliest examples of computer graphics were produced on oscilloscopes, not on televisions. Like a television, an oscilloscope constructs an image in a cathode ray tube, by firing an electron beam at the phosphor-coated surface of the display. An oscilloscope features an electron gun that can be moved arbitrarily across the surface of the display. In 1958, Willy Higginbotham created a simple tennis game he called TENNIS FOR TWO, that used an oscilloscope as its display, as did SPACEWAR!, created at MIT in 1962. ASTEROIDS (1979) uses a display like an oscilloscope, although in a larger enclosure, sometimes called an XY or Vector display. To construct an image on an XY display or oscilloscope, the electron beam moves to a particular orientation within the tube, turns the beam on, then moves to another location, creating a line between the two with the beam's electron emissions. Each gesture must be created very quickly, before the phosphor burns off and must be redrawn. Different phosphor qualities create different appearances on the surface of the tube, and the beam's strength can sometimes be adjusted to illuminate more or less light. (Some ASTEROIDS cabinets do this, making the ship and projectiles much brighter than the surrounding rocks). From the perspective of human inscription, constructing a frame of ASTEROIDS is more like drawing than like photography or cinema – or per-

haps more like cuneiform inscription. But from the perspective of the evacuated glass envelope that is the monitor, the experience is more like a laser light show.

An ordinary television picture of the 1970s and 1980s was displayed by a cathode ray tube (CRT). Like an oscilloscope, the CRT fires patterns of electrons at a phosphorescent screen, which glows to create the visible picture. But unlike an oscilloscope, the screen image on a television is not drawn all at once like quill on parchment, but in individual scan lines, each of which is created as the electron gun passes from side to side across the screen. After each line, the beam turns off and the gun resets its position at the start of the next line. It continues this process for as many scan lines as the TV image requires. Then it turns off again and resets its position at the start of the screen. A North American NTSC television does this at 60hz – 60 times per second – although television images are interlaced, meaning that every other line is drawn with each pass, the phosphor burn-off on the CRT taking long enough that the human eye does not notice the difference.

Computer displays like that of PONG (1972) use a standard television for their display. The images in PONG are created with the television's electron gun, with circuits modulating the video signal on particular lines based on the positions of controls. The first commercial home videogame console, the Magnavox Odyssey, used the same technique, although it mixed video signal decoding with a decidedly unusual use of printed overlays to increase the visual evocativeness of the otherwise abstract image. Most modern computer systems offer a frame buffer, a space in memory to which the programmer can write graphics information for one entire screen draw. This facility was even provided by many systems of the late 1970s. In a frame buffered graphics system, the computer's video hardware automates the process of translating the information in memory for display on the screen.

In an unusual move driven by numerous design factors, including the high cost of memory, the bare-bones Atari VCS's graphics chip, called the Television Interface Adapter, makes seemingly basic tasks like drawing the game's screen complex. The VCS does not provide services such as frame buffering for graphics rendering. The machine is not even equipped with enough memory to store an entire screen's worth of data in a frame buffer. The VCS offers 128 bytes of RAM total—not even enough to store one 8-bit color value for every line of the VCS's 191-line visible display. Additionally, the interface between the processor and the television is not automated as it is in a frame buffered graphics system. A running VCS program involves an interface between ROM data, processor state, and graphics/sound interface during every moment of every line of the television display.

From a human perspective, we can metaphorically render the “notes” of these actions à la Harman if we wish. Atari VCS players see the same sorts of images that they would have come to expect from television broadcasts – the sense of a moving image like film. But the Atari VCS *itself* does not ever perceive an entire screen's worth of graphical data in one fell swoop. It only apprehends the syncopations of changes in registers. Its components see things still differently: The 6502 processor encounters an instruction read sequentially from program flow, performing a lookup to execute a mathematical operation. The TIA graphics chip modulates sends electrical signal when it witnesses a change on one of its input registers. The RF conversion box coupled to console and television transmutes an endless stream of data into radio frequency. Time moves forward in syncopated bursts of inbound bits and bursts of signal, then of color from joystick to motherboard to television. Despite the fact that the machine must manually synchronize itself to the television display at 60Hz, it has no concept of a screen's worth of image or a note's worth of sound. It sees – and that is surely not the right word – only a miasma of instruction, data, color, darkness.

## Method 2: Carpentry

However appealing and familiar the usual means of doing philosophy might be, another method involves a more hands-on approach, manipulating or vivisectioning the objects to be analyzed, mad scientist-like, in the hopes of discovering their secrets. – Consider a concrete example of this kind of effort, Ben Fry’s DECONSTRUCTULATOR (2003). The program is a Nintendo Entertainment System emulator, written in Java, which runs any NES ROM as if it were being played on the original hardware. On the periphery, the system depicts the current state of the machine’s sprite memory in ROM, sprite data in video memory, and current palette registers, which are mapped via keys to the indexed values in the sprites themselves. These update over time as the state of the machine changes while the user plays. DECONSTRUCTULATOR is neither a complete nor a perfect example, and I doubt its creator would ever call it by this name, but it is a work of pragmatic speculative realist phenomenology; a concrete one, unburdened by theoretical affectations. It is an example that shows how “speculation” might be used in a more concrete fashion. It also shows that the job of the videogame phenomenologist might have as much or more to do with hardware hacking and programming as it does with writing or speaking.

In some ways, source code itself offers an in-road into videogame phenomenology, and computational phenomenology more generally. Since their inception, web browsers have offered a “view source” command that allows the user to see the underlying markup from which a web page is rendered. Reviewing the layout and structure of the document can reveal nested objects from which the page is constructed: not only images and animations but also script files and stylesheets. Perusing these further reveals the relationship between headline and typographical instruction, click-handler and data structure, form action and HTTP postback.



Debugger tools can formalize such a phenomenology even further. FIREBUG is a Firefox browser plug-in that allows the programmer or ordinary user to monitor and display the internal states of the web browser's rendering and behavior system as a page is rendered. Once installed, the tool allows a user to view the HTML that corresponds with a selected visual element on the screen, to reveal and modify the style information that tells the browser which colors, fonts, layout styles, and positions to use for objects on the page, to overlay rectilinear grids to reveal the internal metrics of a webpage, to review the network activity and duration required to fetch and retrieve every object needed for the page, to debug scripts and show the runtime values of active variables, to reveal the internal object structure of the page within the Document Object Model (DOM) used for both stylesheet rendering and scripted behavior, and so forth.

The relationship between memory addresses and ROM data, or webpages and markup, are two of many examples of the relationships technical practice can reveal. For other things also take place at this very moment, adding themselves and their kindred to the hoo-kah, gearshift, and soup with which we began: An electron strikes phosphor, lighting a speck on a fluorescent tube that glows and fades. A metal catch closes a circuit on silicon, whose state a processor bit-wise compares to a charge on another wafer. An I/O bus pushes an OpenGL instruction into the onboard memory of a video card, whose GPU runs matrix operations into the video memory soldered to its board.

The implications for the weird realism more generally might be even more surprising than they are for videogame phenomenology, as the philosopher-programmer is joined by the philosopher-geologist, the philosopher-chef, the philosopher-astronomer, the philosopher-mechanic. The "carpentry of things," Harman's adopted pet-name for object-oriented philosophy, might be a job description, not just a metaphor.

## Toward an Alien Phenomenology

I am persuaded by Harman, Meillassoux, and others' injunctions against believing that this is our world alone to perceive. But the contingency of human existence and agency becomes less philosophically useful as the specificity of the object of study increases. Despite the directions I offer here toward a specific theory and method of videogame phenomenology, we still lack a more general approach to a concrete practice of the philosophy of particular objects. Let me then close with a direction toward one.

Harman borrows a name to describe the background noise of peripheral objects: "It is not a white noise of screeching, chaotic qualities demanding to be shaped by the human mind, but rather a black noise of muffled objects hovering at the fringes of our attention" (Harman 2005:183). As philosophers, our job is to amplify this black noise to make the resonant frequencies of the systems of objects inside hum in credibly satisfying ways. Black noise is a kind of radiation that emanates from objects in the same way that emit radiant energy, like a black hole. We understand them by tracing their impact on the surrounding ether.

And if the black noise of objects is akin to the Hawking radiation that quantum effects deflect from black holes, then perhaps it is there, in the unknown universe outside our bodies, buildings, oceans, and atmosphere that we should look for an analogy. In the 1980s, prolific German American philosopher Nicholas Rescher argued that extraterrestrials are perhaps so alien that their science and technology is incomprehensible to us; we could never understand it as intelligence (Rescher 1985: 83-116). The argument was directed partly against SETI's apparent insistence that the signs of extraterrestrial life would resemble the ones humans themselves have sent out into space, in the form of a detectable communication technology.

Hookahs and consommés, microprocessors and ROM graphics chips can no more communicate with us than can Rescher's extra-terrestrial. Perhaps this is an instructive and humbling sign. What we are doing when we study the way computers interact with videogames –or when hookahs interact with lips – is not just speculative realism, it is alien phenomenology.

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## Biography



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