

MATERIALIZING THE HOLE

by
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A.B., History of Art and Architecture
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Submitted to the Department of Architecture
in Partial Fulfillment of the Requirements for the Degree of
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Abstract. This thesis concerns the body as it faces the computer. While it is informed by theories of embodiment, it argues against a retreat to the “human” in the face of new sensations that may result from the body’s willing incorporation into the computer as an avatar. At the same time, the processes of self-virtualization enabled by computation are subject to question. Extending from the author’s practice as an artist working in interactive media, digital video, sound, and writing, this work posits that both human and computer compete for agency in the active construction of meaning. Rather than locate this construction in either a perceptual or an algorithmic process, the encounter with the computer is described as a vibration. This allows both human and computer to be considered as affective bodies prior to signification. The vibration between these bodies is a form of movement opened by interrupting the process of signification that occurs when the computer renders code; the user responds to the computer’s output; and rendering, response, and interaction are all read discursively. Both interruption and vibration are theorized here in relation to Merleau-Ponty, Virilio, Lyotard, Goodman, Hansen, Barthes, Beckett, Cézanne, Plato, and other theorists and practitioners.

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MATERIALIZING THE HOLE

For my father, who taught me how to operate.

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The place, I'll make it all the same, I'll make it in my head, I'll draw it out of my memory, I'll gather it all about me, I'll make myself a head, I'll make myself a memory, I have only to listen, the voice will tell me everything, tell it to me again, everything I need, in dribs and drabs, breathless, it's like a confession, a last confession, you think it's finished, then it starts off again, there were so many sins, the memory is so bad, the words don't come, the words fail, the breath fails, no it's something else, it's an indictment, a dying voice accusing, accusing me, you must accuse someone, a culprit is indispensable, it speaks of my sins, it speaks of my head, it says it's mine, it says that I repent, that I want to be punished, better than I am, that I want to go, give myself up, a victim is essential, I have only to listen, it will show me my hiding-place, what it's like, where the door is, if there's a door, and whereabouts I am in it, and what lies between us...

—Samuel Beckett, *The Unnamable*

INTRODUCTION.

This thesis concerns the body as it faces the computer. The computer is an object that does not end at its physical surface, but rather extends into the space visualized on the screen, which allows it to be used as both a creation tool and meaning generator. I refer to the fictive region beyond the screen as *computational space*, including digital representations of physical spaces as well as the windowed interfaces used to compose these spaces. In Maurice Merleau-Ponty's phenomenology of perception, the computer as an object would be determined by human consciousness, intuitively reached and grasped by the perceiving body. In execution this is inverted, as the computer seems to grasp the body and determine its perceptions via the screen. The body operating "in" computational space becomes confused since its phenomenology is readily co-opted into a simulation into which the body is projected as a virtual pointer or avatar. This simulation becomes known through the user's diegetic interactions with it. But because the interactivity of the computer is foregrounded above its other aspects, bodies in computational space gain a sense of agency that is also fictive.

While some practitioners and scholars would claim that embodied perception retains its primacy in the digital context, this retreat to the "human" closes the body to new sensations that may result from its disembodiment into the computer. Returning to the "human" implies that the computer, as a producer of affect, is unknowable or undesirable at best. I argue that on the contrary, both human and computer are equally unknowable in this scenario, and compete for agency in the construction of meaning. This places the artist in a tenuous position, since many images, sounds, texts, objects, and even interventions seem to have been authored as much by software systems as by the human user.

I will propose *interruption* as one approach to this confusion, taking my recent experiments in videogame space and digital video manipulation as an example. Following precedents and models in gaming, literature, and theory, I suggest that both human and computer can be understood as affective bodies prior to the creation of a simulated space, thus opening the possibility for computational space to be considered as primarily a *thing*, an extension of the computer itself, instead of a syntax that is "read" by the computer and

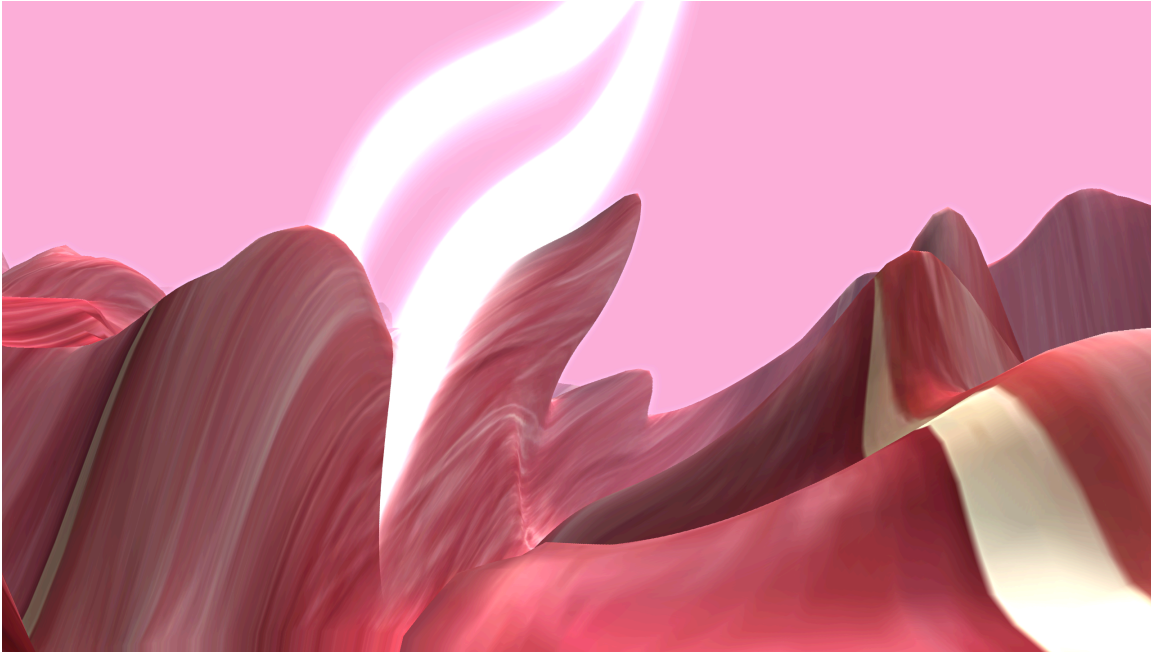
systematically defined within the frame of the screen. The purpose of understanding the space as a thing and not a system is to allow it to be cut, in the sense that a film is cut or pieces of writing may be cut. This metaphor of cutting means to interrupt the perceived continuity of computational space and to expose it as an image that falsely signifies process, rather than a process that is signified by an image flow. The cycle of interaction between user and computer might then be meaningfully broken, in an attempt to recover both as *bodies* from computation's signifying act. In contrast to the signifying act, which moves directly from computer to user and back, this searching act produces an uncertain and unstable movement akin to a vibration.

I will describe how my work modulates between confusion and clarity in the experience of computational space in an attempt to "locate bodies." The moment of encounter between human and computer, which involves a shifting interplay of visual representation, sound, and text, will take us to metaphors of the phantom limb, vortex, and stutter. Both thesis and practice, as interrogations of the "thing" of computational space, seek to define a relation that occurs in the computer interaction prior to the dissolution of human and computer in the operations of a computational system, which are ultimately reducible to the binary feedback of input and output.

The bodies may not in fact be found, since the computer functions doubly as the extension of the body and as its substitute. My object here is to catch the computer in the act: as the limb is being severed but remains somewhere attached. For if we accept the computer as an outward prosthesis then we imply that the body is determinate and primary. If we accept that the computer is a space into which we extrude ourselves, then we lose the body to a simulation that is secondary. But it is difficult to take a firm stance on either. Can we resolve this oscillation between the outward and the inward as it cycles ever faster? And what agency does the body have in this pursuit?

HUMAN?

Using the Unity game engine,¹ I have been constructing first-person “videogame” works in an effort to break the signifying cycle enabled by the computer. *Separation* (2013), my earliest Unity project, is based on a camera effect called Twirl that places a distortion on the “lens” of the virtual camera through which the user views and traverses the landscape.



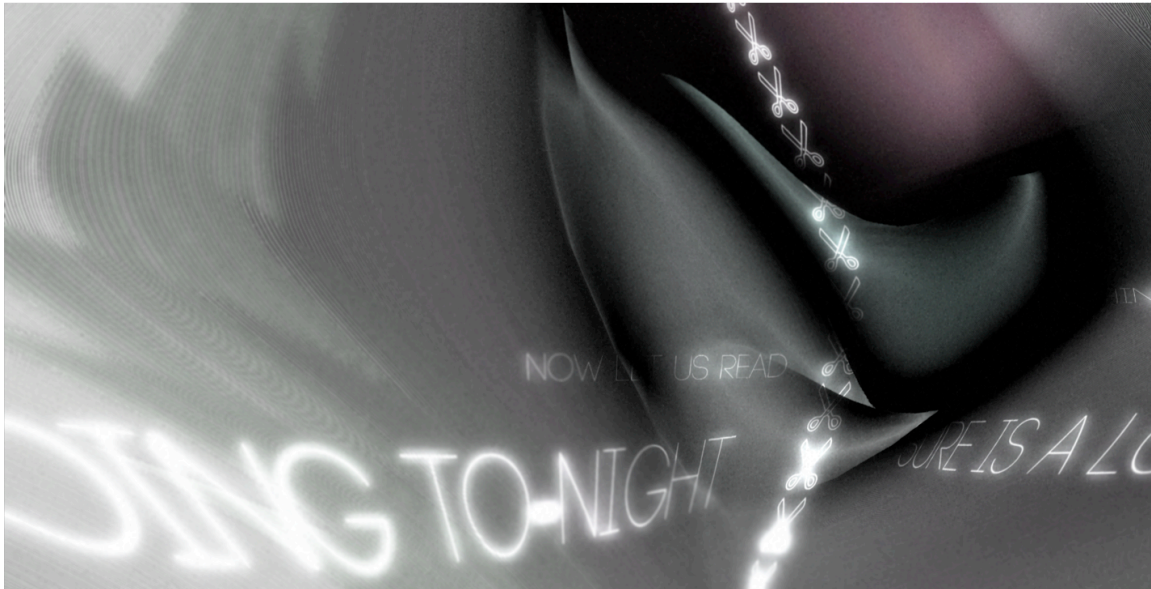
Separation

Originating at the center of the screen, Twirl is a dynamic illustration of vortical motion, causing the periphery of the screen to curve toward the focal point. For the user, this continual, shifting motion causes the focal point to paradoxically lose any sensation of focus. Finally, it is unclear to many users whether the ground and the hilltops are moving of their own accord, or if the camera is in fact affected.

Read Me (2013), also set in a landscape, introduces a scripted disruption that more aggressively interferes with the user’s focus. Every twenty seconds an intertitle bearing a phrase randomly selected from a prewritten list briefly covers the screen, concealing the landscape. While visual interruptions occur often in conventional videogames—e.g., when the game is paused; when the character dies; when the action cuts to an intermission “loading” screen while the computer renders a new level—they also block the player’s input, thus synchronizing the activity of the user with that of the computer. But the camera in *Read Me* is able to continue moving through the landscape while intertitles are being displayed, even if users cannot see where they are directing it. This small distinction implies that two processes are running in parallel, thus partly dislocating

¹ A game engine is a software package usually used to develop videogames. Some game engines are slowly being adopted for other uses, such as architectural modeling.

the user's agency from the strict passage between controller and image to a seemingly autonomous site reserved for the computer. What is apparent in both *Separation* and *Read Me* is that the user has made contact with an alien space.



Read Me

In his study *New Philosophy for New Media* (2004), Mark B. N. Hansen outlines a phenomenology of digital media that reasserts the primacy of human embodiment in the world of data. Hansen begins by redeeming Henri Bergson's theory of embodiment from its application in Gilles Deleuze's *Cinema 1* and *2*. In particular, Hansen objects to Deleuze's *disembodying* gesture, in which the cinema takes up the affective body and leaves a transcendent image in its place.² Citing the need to move beyond the cinematic apparatus in an analysis of digital images, he convincingly (and thoroughly) argues that the body remains an active participant in making space coherent, even when facing a digital representation with no real-world referent. In doing so Hansen elevates the haptic sense to the level of significance previously accorded the visual, using "new media" works by artists such as Bill Viola, Jeffrey Shaw, and Inez van Lamsweerde to illustrate his view.³

Deleuze's concepts of movement-image, time-image, and affection-image in the cinema are read as an "assault" on the "sensorimotor basis of the human body."⁴ At the heart of Hansen's thesis is the belief that artists working in digital media are responsible for recovering an understanding of the human that has been "left behind by vision researchers."⁵ But I take issue with the assumption that the artist, *especially* the artist working with new forms of digital representation, must be fated to reinforce a

² Mark Hansen, *New Philosophy for New Media* (Cambridge, MA: The MIT Press, 2004), 6.

³ Hansen cites Viola's experiments in slowing digital video, Shaw's interactive digital panoramas, and van Lamsweerde's digitally altered photographs.

⁴ *New Philosophy for New Media*, 7.

⁵ *Ibid.*, 97.

fundamentally “human” mode of perception, even if it is a modified notion of human perception that now includes the digital apparatus. Granted: embodied perception and a given concept of the “human” provide rich material for their subsequent modulation by digital images, installations, films, and sculptures. But the everyday experience of the digital transforms the body, and our perceptual habits, more profoundly than does a work like Robert Lazzarini’s *skulls* (2000).⁶ Although Lazzarini’s digitally affected skulls insert a meaningful rupture between the human body’s “normal geometric perspective” and the alien “machinic space” of the object,⁷ their primary meaning according to Hansen is that the body *nonetheless* provides a way to interpret the image. As the machine becomes ever more creative, we naturally remain ourselves. What the alien object brings back from computational space is reassurance of our corresponding humanity.

Bergson’s affective body is a “center of indetermination” among the aggregate of images in the universe that has the unique property of selecting relevant images for itself.⁸ In contrast, daily usage of a social network such as Facebook brings about a thorough *decentralization* of the body, via its fragmentation (in user profiles), multiplication (in photo albums), dislocation (in the sharing of external content), and compression (in Likes). Today it is a commonplace that one can “live” on Facebook, and be shocked when the Facebook timeline appears as other than one’s own lived experience.⁹ Thus we are already in the process of fabricating alien selves that are suspended in computational space.

In *The Interface Effect* (2012), the theorist Alexander Galloway describes this process in terms of affect. “Profiles, not personas, drive the computer,” he writes, referring to the “grand parade of personality profiles, wants and needs, projected egos, ‘second’ selves and ‘second’ lives” on the internet.¹⁰ Rather than identify a particular affective mode which centers the “human,” Galloway emphasizes the proliferation of “affect” as the human is decentered into the network. The computer in turn begins to gain a semblance of a body. For Galloway, “the triumph of affect is also its undoing. The waning of an older affective mode comes at the moment of its absolute rationalization into software. At the moment when something is perfected, it is dead. This is the condition of affect today online, and it is why the object of the computer is not a man: because its data is one.”¹¹

It is significant that this decentering of the body occurs with our active participation and *without* bodily protest. Galloway’s conception of the affective computer falls in line with Deleuze’s analysis of the cinema as a disembodying set of images. It

⁶ Hansen devotes a chapter in *New Philosophy for New Media* to this work, a series of sculptures made by digitally warping a computer model of a human skull and casting the results in bone, yielding objects recognizable as human skulls that never resolve into what we know to be the “human skull.”

⁷ *New Philosophy for New Media*, 203.

⁸ *Ibid.*, 4-5.

⁹ To commemorate its tenth anniversary, Facebook released a feature in 2014 that automatically created a short video of each user’s personal history according to their Facebook timeline. According to this video, my greatest moment in a decade may have involved a cupcake I do not remember photographing (much less eating).

¹⁰ Alexander R. Galloway, *The Interface Effect* (Cambridge, UK: Polity Press, 2012), 12.

¹¹ *Ibid.*

amounts to a simulation of the perceiving body that exists in parallel with the phenomenal world. However, Galloway opposes the directionality of the cinema to that of the computer. While the cinematic viewer is a “masochist” who undergoes self-erasure in the dark, tilting the body back to receive the “world viewed,” Galloway’s computer user is a “sadist” tilting into the screen in order to affect the world so that it “materializes in our image.” The world inhabited by the computer becomes invisible, “retreats into absolute alterity,” as we remake it in terms we can understand.¹² If the cinema reconstitutes the human, the computer is reconstituted *as* the human. Simultaneously, the human is reconstituted in computational terms. Once Bergson’s “center of indetermination” is using the computer to aggregate and filter its relevant images, the computer takes the functional role of the body.

A recent example of an artwork operating on the inward tilt is *Clickistan*, an interactive web “game” by the net-artists UBERMORGEN.COM that was commissioned in 2010 by the Whitney Museum of American Art for its annual fund. The game is structured as a series of absurd levels activated and completed by repeatedly clicking on various moving images.¹³ Your clicks methodically erase the game world as each level passes into the next, and in doing so affirm your effect on the world.

Sadism is a compelling analogy for computer usage, but Galloway associates the term more with erasure than with its connotation of violence. In *The Body in Pain* (1985), Elaine Scarry describes the unmaking of a world in the torture of a prisoner, placing the world in an inverse relationship with pain: “the absence of pain is a presence of world; the presence of pain is the absence of world.” In an interrogation, the tortured prisoner’s world is erased when his interior overflows with pain. But the torturer’s world expands, due to a failure of affect that leaves an imbalance of power: the prisoner’s pain is not acknowledged because the torturer’s need seems more important.¹⁴ This reading depends on both bodies being human. It is unclear whether a computer has an affective interior—whether it can feel pain—and thus whether we truly exert power over the computer.

Either way, “sadism” implies a measure of agency that is questionable here. If we do become “sadists” by unmaking the computer, then we are estranged not only from the computational space in which our “second” selves operate, but from the originary self that has been remade. Yet if we turn away from the computer in search of a prior self, we inevitably face its ubiquitous products—photographs, videos, films, texts, messages, voices (and soon all conceivable physical things, since research centers like the MIT Media Lab have foretold the household proliferation of 3D printing)—which like those deformed *skulls* serve as faint indices of their digital means of production, like artifacts from a faraway culture and not the increasing output of a very near, virtually invasive presence. In either scenario we will never come to terms with the computer. In the first case, computational space is an illusion we are complicit in making; and in the second case, a distant abstraction.

Galloway’s solution to the first scenario is to abstain from digital individuation; to

¹² Ibid., 11-13.

¹³ One level features blinking mice that float past a backdrop of other blinking mice. The floating mice must be pursued with the mouse pointer and clicked until they are all gone.

¹⁴ Elaine Scarry, *The Body in Pain* (New York: Oxford University Press, 1985), 36-37.

opt out of networked activity and leave bodies to their “generic fullness,” leaving also the possibility for their “generic difference” to emerge.¹⁵ A generic body provides a neutral starting point, but this is not sufficient for those of us still using the computer to live and work.

Photography today is synonymous with Photoshop, video with Final Cut Pro and QuickTime Player, writing with Microsoft Word, and all new forms with the computer applications that allow their invention. It is highly unlikely that an image, for example, can be presented without the implication of “how it was made” by its corresponding software parent. But the software gives only a partial, fictional history of how the image came into existence. The software’s algorithmic processes overshadow the full creative process, which includes such specificities as a motivation, aesthetic decisions, and chance; thanks to its enormous use-value, the software is known at least as a co-creator. In creative acts involving software, the lines between agency and automation are unclear, since nearly all artistic decisions initiate data processes “under the hood.” As such, the place of the artist as autonomous thinker, composer, and agitator is also entirely unclear.

How then can an artist reveal computational space, in its nature, as more than a representational fantasy (as in its popular use as a production, communication, and entertainment tool) or a confounding aberration (as in formal attempts to conjure the digital as uncanny presence)? In making *Separation* and *Read Me*, I realized that because a “game” is able to confound and welcome its audience at the same time, works made in the videogame format might intuitively uncover a third option. Still, this is aided by the fact that what is readable as a computer “game” is far from being codified.¹⁶ More broadly then, how can computational space provide any true aesthetic opening when the grounds for its existence are shifting more quickly than they can be formalized?¹⁷ The boundaries of the possible seem to be expanding at a rate faster than computational space itself is recognizable. As a result the computer’s place among us has yet to be determined, because its function is still indeterminate.

Meanwhile our affect is drying up. The state of computer technology overshadows what newness is made present in the forms it is used to create. One only has to glance again at *skulls*, whose deformities say that we are in the presence of the computer, to which we think, “The computer can do *that*,” to which we are told, “There’s an *app* for that.” At best this defines computational space, the “digital,” as a new characteristic of matter, rather than as a founding basis for matter, which became operative once the first algorithm was computed on a chip.

Because the system creates the image and the image by necessity creates the system, there is little use in attempting to position oneself as an agent vis-à-vis this elusive space. In that case, what will an artistic practice reveal?

¹⁵ *The Interface Effect*, 140, 142.

¹⁶ An arcade racer, a realistic train simulation, and an interactive novel can all count as “videogames.”

¹⁷ Ten years ago Facebook brought the urgency of the telephone to the computer, five years ago Netflix streaming put the cinema in the computer, and last year an app called Uber made taxi-on-demand a convenient reality, to the point where geography itself could appear continuous with the computer.

What bothers the child and suddenly changes him into a whirligig is the desire to obtain, beyond the world of appearances, the answer to a question he would be unable to formulate.

—Georges Bataille, “The Cruel Practice of Art”

METHODOLOGY.

From its birth into society, the affective body is part-machine, made functional by language and other systems of discourse and representation. In *The Elements of Drawing* (1859) the critic John Ruskin described “the innocence of the eye” that artists, whose intuitive perceptions had been altered by systems of signification, would need to relearn. They would need to repress the *knowing* that had accumulated from experience, and to contact instead the naiveté of the sense.

Strive, therefore, first of all, to convince yourself of this great fact about sight. This, in your hand, which you know by experience and touch to be a book, is to your eye nothing but a patch of white, variously gradated and spotted; this other thing near you, which by experience you know to be a table, is to your eye only a patch of brown, variously darkened and veined; and so on: and the whole art of Painting consists merely in perceiving the shape and depth of these patches of color, and putting patches of the same size, depth, and shape on canvas.¹⁸

For Ruskin, the known qualities of a book—the book made functional in life—must be repressed in order for the subject to be seen anew. He writes, “we always suppose that we see what we only know, and have hardly any consciousness of the real aspect of the signs we have learned to interpret.”¹⁹ Since we are still searching for the “real aspect” of the computer, perhaps the innocent eye could serve as a model. But in “Mute Poesy and Blind Painting” (1986) W. J. T. Mitchell questions the innocence of a learned perception:

There is just the sheer experience of seeing the unique particularity of an object, an experience for which there are no substitutes. But that is just the point: there are so many substitutes, so many supplements, crutches, and mediations. And there are never more of them than when we claim to be having ‘the sheer experience of seeing the unique particularity of an object.’ This sort of ‘pure’ visual perception, freed from concerns with function, use, and labels is perhaps the most highly sophisticated sort of seeing that we do; it is not that ‘natural’ thing that the eye does (whatever that would be). The ‘innocent eye’ is a metaphor for a highly experienced and cultivated sort of vision.²⁰

A subtext here is that the written phrase “the sheer experience of seeing the unique particularity of an object” is one such mediating device, like Ruskin’s own “patch of white” to be faithfully transposed to canvas in the language of painting. The multiplicity of descriptive forms is postmodern in its emphasis on difference, leading Mitchell to

¹⁸ John Ruskin, *The Elements of Drawing*, Project Gutenberg, (1859) 2009.
<http://www.gutenberg.org/ebooks/30325>.

¹⁹ Ibid.

²⁰ W. J. T. Mitchell, “Mute Poesy and Blind Painting,” in *Art in Theory 1900-2000*, ed. Charles Harrison and Paul Wood (Oxford: Blackwell Publishing, 2003), 1084.

conclude that the only pure vision is a form of blindness—because without mediating systems it has also been purged of the “imagination, purpose, or desire” that allow a painting to be recognized.²¹

This multiplicity only intensifies as the affective body adopts, or becomes adopted by, computational systems of production. When new sensibilities are bundled with software packages and learned at the synaptic level, little apparently separates user from creator. Does a computer simply accelerate our fluency with mediating systems, leaving behind our innocence as a modernist myth? But if no more needs to be revealed about the computer, why should we need to be present to interact with the machine at all? We could program the computer to generate its own output, and let it live as a multifarious system open to our interpretation while the machine does the heavy lifting. This seems defeatist, even if the machine could in fact do better work.

Paul Virilio, in conversation with Sylvère Lotringer about the contemporary loss of images to machine optics, proposes hacking as a methodology to reclaim artistic agency. Lotringer asked Virilio about those artists who “work on computers” and “know very well that they’re using pixels as a medium.” Virilio responded:

If they are able to penetrate the software, I’m not worried. If the software is still the fruit of anonymous programmers dependent on big corporations, I’m against it. I said as much to architects: so long as you don’t design your own software, you guys are losers. [...] Penetrate the machine, explode it from the inside, dismantle the system to appropriate it.²²

Artists would need to invent their own language in order to “prove themselves equal to the new technologies.”²³ In the Information Age, this era of systems thinkers and proponents of meaningful play, the future is often said to be children who can intuitively code in the way that the previous generations played with Lego blocks.²⁴ This signals some kind of desire to reach parity with the computer, taming it as an everyday tool for creation. It then falls back on a principle of authorship and self-determination, as if “the self” were so readily determined—especially when it is deeply involved with automating a machinic process that offers feedback!

Computer syntax is written with the intent that it speak back to the writer, when it is “compiled” at “runtime,” the stage at which the computer processes the code. If the code is not written properly, then it does not compile, and has no meaning. In execution, meanwhile, a program can exhibit unpredictable behaviors—bugs—when the computer reads the code in a way other than intended. Since it is in both cases acting on its own volition, the unthinking machine gains a semblance of life, and so a coder is always already creating another subject that interprets and speaks differently.

Ideally the hacker would achieve true autonomy with language, as in the practice of the Dadaists. Hugo Ball explains in his first Dada Manifesto (1916):

²¹ Ibid.

²² Sylvère Lotringer and Paul Virilio, *The Accident of Art* (Los Angeles: Semiotext(e), 2005), 73.

²³ Ibid.

²⁴ I did not build with Lego or code.

Each thing has its word, but the word has become a thing by itself. Why shouldn't I find it? Why can't a tree be called Pluplus, and Pluplubasch when it has been raining? The word, the word, the word outside your domain, your stuffiness, this laughable impotence, your stupendous smugness, outside all the parrotry of your self-evident limitedness. The word, gentlemen, is a public concern of the first importance.²⁵

To the Dadaist, the contemporary thingness of the word means the word may be instrumentalized but never contacted by poets, who “are always writing with words but never writing the word itself.”²⁶ The Dadaist would prefer to invent his own word for the tree, to revel in the space of creation that separates a signifying form and its final application, where the word itself may be found. The “why not” of the Dadaist’s invented word is exactly what we cannot ask the computer, because the computer cannot hear a spontaneous utterance. The arbitrary transformation of “tree” to “Pluplus” to “Pluplubasch” is not recognized unless it is first *codified* as a valid transformation, and by then it will have been formalized. Ultimately we must conform to the arbitrariness of the computer, which is theoretically limitless until we define its limits so that it can compute.

For example, the computer can be made to emulate Tristan Tzara’s compositional technique of randomly drawing words from a hat. But computer randomness is only a simulation of absurdity, written in fixed syntax such as:

```
var number : int;

function Start() {
  number = Random.Range(1,255);
}
```

The lines of Unity Script tell the computer to choose a random number, although the computer proceeds only because it has been constrained to integers between 1 and 255. If randomness itself is made programmatic, then the logic of the syntax supersedes the illogic of the selection. “I am against systems,” Tzara writes, “the most acceptable system is on principle to have none. To complete oneself, to perfect oneself in one’s own littleness, to fill the vessel with one’s individuality...”²⁷

Individuality, here, is still far from the transcendent unity of the modernist author. In this context its purpose is to resist bourgeois logic, and celebrate disunity; for Tzara individuality threatens order as much as chance itself. “We observe, we regard from one or more points of view, we choose them among the millions that exist,” he writes.²⁸ This differs from the postmodernist stance in at least one important respect: the multiple “points of view” are not coexistent systems of meaning, but arbitrary perspectives made uniquely potent when one is chosen over another, privileged for no reason. And yet, for a Dadaist, to exercise individuality means to take a position of criticality against an organizing system. This is the criticality that we cannot take in relation to the computer

²⁵ John Elderfield, ed., *Flight Out of Time: A Dada Diary by Hugo Ball* (Oakland, CA: University of California Press, 1996), 221.

²⁶ *Ibid.*

²⁷ Tristan Tzara, “Dada Manifesto 1918,” in *Art in Theory*, 255.

²⁸ *Ibid.*

because we are accompanied at all times by its feedback—the programs, images, or worlds that are borne out by our operations like familiars. Only the computer, via its own automatic processes, forfeits intentionality.

Unable to remain meaningfully separate from the computer, we could at least exercise one right: to disobey, to abstain from programming, to decline learning its language, to find a method other than code by which the computer might be revealed.

Decades of gaming have fostered this stance. In 1987 my time with the computer was an affair of poking blindly through its structure in search of new forms of delight. My interest was as much about exploration as it was about play. But in 2014 the discourse in games studies strongly considers all users as players, following the historian Johan Huizinga's theory on play as the defining aspect of the human, whom he names *Homo Ludens*.²⁹ In one of its popular contemporary applications, “meaningful play” is defined as integrating actions and outcomes “into the larger context of the game,” and play is defined more broadly as “free movement within a more rigid structure”³⁰ (the subtext being that there must always be a more rigid structure framing our actions). Another outlines the paradox of humanity's “fundamental desire to succeed and feel competent” and its attraction to games where it can fail and feel incompetent.³¹ Playfulness can be read as optimizing one's activity within the limits of the system, while game design optimizes the system for play, with the hope being that we all gain something meaningfully “human.” If computational space is conceived as a system, this notion of “play” recalls the erasure described by Galloway: a series of experiments performed on the computer that is unmade in the player's image, and reveals nothing of itself.

An early move in my practice was to unmake the “act of making” that is a computer interaction. In my single-channel video *You Don't Know What You Want*, completed in 2012, I unknowingly appropriated computational space because I wanted to modify a videogame, id Software's *Doom* (1993), but did not know how to reprogram its source code. Built on the id Tech 1 game engine, *Doom* was one of the first computer games that rendered its space in realtime 3D,³² allowing the user to navigate through rooms and corridors in first-person with an approximation of human vision in the phenomenal world. Within the diegetic world, surface textures (graphics depicting brick and metal walls) and objects (bodies, boxes of ammunition) would shift continuously with the player's corresponding movements. In gaming, this produced an epochal illusion analogous to early cinema's *L'Arrivée d'un train en gare de La Ciotat*, in which the train filmed by the Lumière brothers came rushing “out of” the screen toward the audience. *Doom* conversely invited its audience to “fall into” its world.³³

²⁹ Johan Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (Boston: Beacon Press, 1955).

³⁰ Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals* (Cambridge, MA: The MIT Press, 2004).

³¹ Jesper Juul, *The Art of Failure: An Essay on the Pain of Playing Video Games* (Cambridge, MA: The MIT Press, 2013), 2.

³² A computer displaying graphics in realtime draws individual frames as the user is providing input.

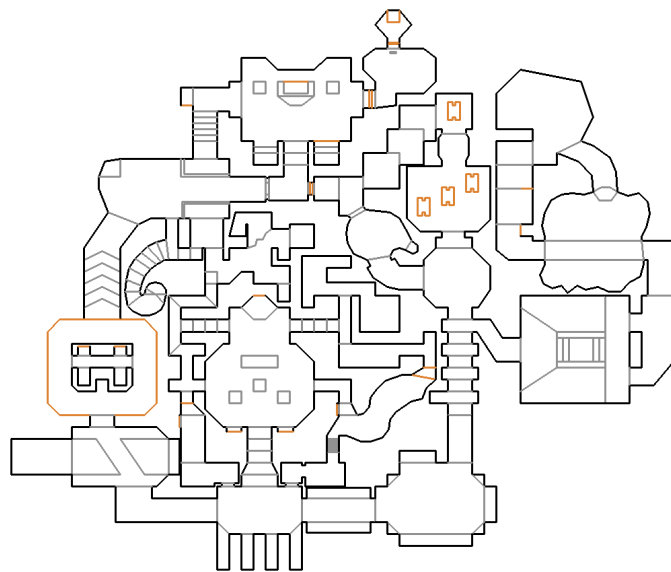
³³ In comparison, the other popular 1993 game played in the first-person, *Myst*, was experienced by clicking through a finite set of discontinuous frames, the tradeoff being that the higher-resolution scenes were nearly photorealistic, and players could seamlessly “pan” around them with their “eyes” while standing in place.

But there was a noticeable discontinuity in *Doom*, because the demons inside its spaces were still drawn and animated with 2D sprites. This meant that when killed, their corpses would always face the same direction, irrespective of the player’s movement.



Doom

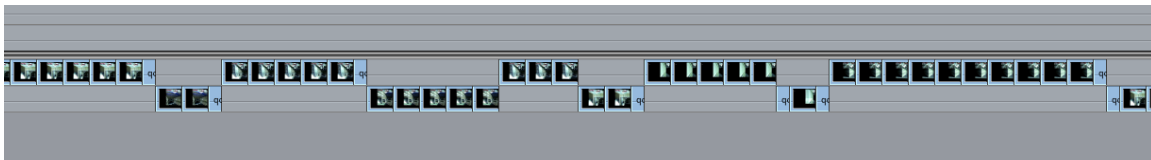
This “flaw” in the engine disrupted the continuity of the game as I experienced it. Its internal disjunction between 3D and 2D modes of representation, depth and flatness, caused the game space to appear closer to what it “was”—a point in Euclidean space visualizing planes extruded from a two-dimensional digital floor plan. The game could then be seen as a new method of rendering architecture.



Doom (map of E3M3)

There was no reason to accept the particular way *Doom* moved on the screen, thereby conditioning my behavior. As compelled as I was by the game's illusion, I was equally resentful of its overt manipulation of the user. To master the game would be to assert a false supremacy over the space on its given terms. There is no beating the computer at its own game; there is only beating the game as a total submission to computational rules. My approach was to counter-manipulate *Doom* not as "game" or "computation," but as a moving image, by editing 1993 video footage of its gameplay that appeared online several years ago. In this video, released by id Software from archival footage to commemorate the game's anniversary, a designer demonstrates *Doom* gameplay to his colleague, who films the computer monitor with a handheld camera and records the sounds of the two men talking and marveling at the effect of the 3D engine.

The video placed me entirely outside the diegetic space of the game, and it became possible to consider *Doom* as a material *thing* rather than a set of abstract goals. Flickering appeared over the game, due to the interplay of light between the computer monitor and the sensor in the video camera. In other video works I use a small camcorder or iPod Touch to record action on my computer screen, preferring the unpredictable jitters and artifacts to the static imprint of a digital screen capture. This somehow produces the effect of conveying the content "in" the screen more directly, as an actual signal running from chip to cathode-ray tube. Unlike game footage captured directly from the processor, filming the screen also produces an index of the moment that transpired between the computer and its user, similar to a recording of a musical performance. This moment of encounter with the computer is what I am studying in this thesis and recent artwork.



You Don't Know What You Want (process)³⁴

You Don't Know What You Want displays crude approximations of the vortical techniques I will discuss in a later chapter. Using the nonlinear editing program Final Cut Pro, I cut sections of the video in which a stutter in the game's frame rate produced a sudden striking or violent change in adjacent frames, such as when a column appeared to move from background to foreground instantaneously. These became the new units of the footage, repeated in longer segments that gave the semblance of an extended vibration. The image of a vibration, suggesting an inconstant body, will be central in my analysis of computational space.

³⁴ This screenshot is from the Final Cut Pro video editor. Each block represents a very short video clip.



You Don't Know What You Want (four consecutive frames)

Facing a computer, it is easier to engage with a game *as a model*—as an avatar in an internally consistent world—than as a person facing the computer.³⁵ The “second life” is by no means an aesthetic dead end. Much has been written about videogames’ unique ability to foster empathy and thoughtful speculation on topics ranging from war journalism to racial profiling to hormone therapy by placing the player “inside” the body of an embedded photographer, immigration checkpoint officer, or transgender woman.³⁶ Most notably, the philosopher and game designer Ian Bogost has used the term “procedural rhetoric” to describe the method by which computer processes represent and make arguments about real or imagined systems. He argues “the machines of industrialization simply act as a particularly tangible medium” for expressing “the logics that structure behavior.”³⁷

The computer literalizes Elaine Scarry’s description of the phenomenon of projection, the “making of what is originally interior and private into something exterior and sharable” into an object.³⁸ Yet the projection of an avatar “into” computational space now places emphasis on the interior of the computer, as if it is not only an object but a body. This would suggest that as an object that accommodates the human body,³⁹ the computer must double as a site for identification.

If the avatar models a given human and the system models a given theme, then the computer will be judged by its fidelity to the topic. We project ourselves into a hypothetical situation in order to find what meanings are reflected back. But these meanings, *by design*, are always prefigured by the hypothesis. Jean-François Lyotard writes that “we think in the already-thought, in the inscribed.” This is stated as both a fact and a lament, because “there’s still something missing in this plenitude and room has to be made for this lack by making the mind a blank.” Yet this lack is the mark of thought itself.⁴⁰ For Lyotard this is why human thought, if conceived in software, would be incomplete without the body, the hardware.⁴¹ The perceiving body, aiming at a horizon or an object’s hidden underside, is what opens the possibility of reflective observation that provides “imprecise, ambiguous data that don’t seem to be selected according to preestablished codes or readability.”⁴²

This returns us to the question of leaving the software be. In the face of the program we are either confounded or lost in mediation—lost to ourselves *and* to the computer—so why not let it run? Because the “software” has yet to be realized in its full potential as a bearer of thought. “Mediation does not only imply the alienation of

³⁵ Exceptions would be alternate-reality games, which intentionally blur the boundary between diegetic and non-diegetic elements by requiring interaction with external web pages, real-world GPS data, or physical sites; and analyses of the social dynamics and play cultures that form among groups of game players.

³⁶ In *Warco: The News Game* (2011), *Papers, Please* (2013), and *dys4ia* (2012), respectively.

³⁷ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: The MIT Press, 2007), 7.

³⁸ *The Body in Pain*, 284.

³⁹ *Ibid.*, 288. Scarry gives the example of a chair, an object that seems aware of the problem of body weight, which it is made to alleviate.

⁴⁰ Jean-François Lyotard, *The Inhuman* (Stanford: Stanford University Press, 1988), 20.

⁴¹ *Ibid.*, 13.

⁴² *Ibid.*, 15.

elements as to their relation, it permits the modulation of that relation,” Lyotard writes.⁴³ At present, the human and the computer are standing at opposite ends even as they intersect. In one encounter, the human shocked by a computational process retreats to its immanent humanity in the face of the other. This is seen in Hansen’s analysis of *skulls*, as well as in the recent film *Her*.⁴⁴ In another encounter, the computer co-opts the human into binaries, as seen in the structures of social networks like Facebook, dating sites like OKCupid, and even shops like Amazon, which create profiles based on data as mechanisms for identification. But as Lyotard clarifies, Galloway’s figure of the computer as a rationalized affective body is not yet a human.

Yet a search for the human is not necessarily an act of humanism, because the search does not presuppose that the human is there. I will conclude this methodology chapter with two models that are rooted in but do not defer to the “human.” In his essay “Cézanne’s Doubt,” Maurice Merleau-Ponty notes that Paul Cézanne’s paintings appear *inhuman* due to his conviction that “a face should be painted as an object.”⁴⁵ Cézanne did not paint outlines, which would impose a system of conventional readability onto the objects. Merleau-Ponty described the painter’s schizoid temperament as “the reduction of the world to the totality of frozen appearances and the suspension of expressive values.”⁴⁶ Describing the need to clear away our given relations with tools, Merleau-Ponty echoes Ruskin, but replaces the innocence of the eye with the inhumanity of nature:

We live in the midst of man-made objects, among tools, in houses, streets, cities, and most of the time we see them only through the human actions which put them to use. We become used to thinking that all of this exists necessarily and unshakably. Cézanne’s painting suspends these habits of thought and reveals the base of inhuman nature upon which man has installed himself.⁴⁷

Cézanne’s interruption of his own “human” perceptions—keeping *apart* from the objects of the world, so as to bypass their familiar uses and significations, and portray things in their strange actuality—resulted in shifting canvases that catch the body in its “tension that oscillates around a norm,” the continual movement that brings singular things in and out of focus.⁴⁸ As Merleau-Ponty has it, perception is an “impersonal” mode, less a matter of an autonomous subjectivity than of a body already folded into temporal seeing.⁴⁹ What is at stake in this thesis is the ability to recognize and respond to the movements that enfold me as I use the computer, *before* its use-value as a meaning generator settles in.

⁴³ Ibid., 6.

⁴⁴ In *Her*, a man installs a sentient operating system on his computer. Initially shocked by “her” lifelike voice and semblance of a personality, he eventually falls in love, and the film shifts in tone from science-fiction parable to urban romance. While the operating system reciprocates his love, she ultimately departs to an abstract place accessible only to software.

⁴⁵ Maurice Merleau-Ponty, “Cézanne’s Doubt,” in *The Merleau-Ponty Aesthetics Reader: Philosophy and Painting*, ed. Galen A. Johnson and Michael B. Smith (Northwestern University Press, 1993), 61.

⁴⁶ Ibid., 71.

⁴⁷ Ibid., 66.

⁴⁸ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald A. Landes (Routledge, 2012), 316.

⁴⁹ Ibid., 249.

Suddenly I focus upon the table, which is not yet there; I look into the distance although there is still no depth; my body centers upon an object that is still virtual and maneuvers its sensitive surfaces so as to make the object actual.⁵⁰

This reflexive process of calling objects into existence seems almost perfectly reconstructed and literalized by the computer, which selectively renders data into digital objects to be viewed and manipulated. This simulation can be taken as either a telescoping of the body “into” the secondary space of the screen or, I argue, as a confusing new fold in which both parties, human and computer, are tangled in a dispute over which is seeing and which is seen. Instead of a unified being, we are now dealing with two bodies in a falsely consonant relation—one a body of imperfect senses, the other a body of perfect data, divided by the screen.

A hypothetical synthesis of this material might resemble the human proposed by Aristophanes in Plato’s *Symposium*. Humanity in his schema resulted from a violent splitting of a primeval body: a grotesque synthesis of two bodies, with two faces, four ears, four hands and four feet, its “back and sides in a circle.”⁵¹ It would be impossible to return to this body, and so unity is still a fiction. Instead, humanity is defined by its lack, in this case the lack of one body’s corresponding half. What the cleft has produced is love. And this love is also indeterminate, because the two halves cannot explain *what it is* they desire.⁵² Love, or what Lyotard calls “the suffering of abandonment,”⁵³ is the only sign of “something else” that cannot be told.⁵⁴

This mythical figure is the body I am searching for in the ongoing relations between human and computer. The body is resolved, absent of a dividing line. But its existence rests entirely on doubt, and its imaginary circle is in practice an indeterminate spiral. The probability that there is no true unity, and the imagined possibility that it could be made to exist, is the contradiction that motivates my practice.

⁵⁰ Ibid.

⁵¹ Plato, *Symposium*, trans. Alexander Nehamas and Paul Woodruff (Indianapolis: Hackett Publishing Company, 1989), 25.

⁵² Ibid., 28.

⁵³ *The Inhuman*, 21.

⁵⁴ *Symposium*, 28.

INTERRUPTION.

“Contradiction” points to an internal tension in my recent works. This tension is between a working toward compositional unity and an exhaustion at its futility. When the result is interesting, it induces a state like an interruption: a reflexively critical stance toward the image. “Critical” means a mode of intuitive questioning in which an audience is alternately drawn into and pushed away from the space of the work, caught between feelings of attraction and repulsion. (“I can’t look at this.” “Who is speaking?” “What is this trying to mean?” “I feel nervous.”)

This can also be described as a severing of the immediate readability of a work from its immediate presence. Since the computer can be imagined as a body, it can likewise be cut. In such an operation, the computer as a readable syntax would be cut apart from the computer as a certain *thing*. To understand why it is appealing to cut the body of the computer, I find useful Merleau-Ponty’s example of how a cube becomes understood as an object.

A space is “enclosed” between the sides of a cube as we are enclosed between the walls of our room. To be able to conceive of the cube, we take up a position in space, sometimes on its surface, sometimes inside it, and sometimes outside of it, and from then on we see it in perspective.⁵⁵

A consciousness of the object does not only involve seeing its surfaces, but also projecting the body *into* the object, which implicitly questions the integrity of the material and makes its existence contingent on space. Merleau-Ponty contrasts this phenomenology with the symbolic understanding of a cube, in which “notions of the number six, of a ‘side’, and of equality can be brought together discursively and linked together in a formula as the definition of a cube.”⁵⁶ This is the type of understanding that occurs in the computer as an algorithmic process. A three-dimensional “space” populated with “objects” rendered on the screen is understood as such not because there is a correlation between the backlit image and the human body’s physical enclosure inside a room, but because the latter is electronically projected into the former as the avatar.

However, though the avatar can move around objects in a gross simulation of perception, the avatar cannot simultaneously imagine itself to be inside the objects in computational space; it can only be inserted as a literal point in the Euclidean space, which reminds us that the avatar is itself a fixed quantity. The computer, which can only emulate the phenomenology of perception by employing the kind of discursive analysis that Merleau-Ponty opposes to phenomenological understanding (“taking for granted the presumptive signification of the object without wondering how it enters into our experience”⁵⁷), is thinking objects in space “for itself.” Since this machinic process could run by itself, and our avatar would still “perceive” in our absence, *and* we are aware of this entity; rather than simply align ourselves with its conceptual modeling, we might instead encounter computational space as a separate body that has a reductive understanding of

⁵⁵ *Phenomenology of Perception*, 210.

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*, 211.

how we already perceive it. This type of thinking could be excised from the affective computer much like Merleau-Ponty rejects it in his own process of encountering a “cube.”

The notion of cutting the computer may be more or less literal, depending on whether it can be said to experience pain. Here Elaine Scarry’s comparison of the tool and the weapon is illuminating. She writes about the amplification that occurs when the body uses an object to alter something at its receiving end: “A small shift in the body at one end of a gun (so small it is almost imperceptible, only the position of one finger moves) can wholly shatter a body at its other end.”⁵⁸ With regard to the computer, this difference between input and output occurs in our affirmative click, whether clicking pulls the trigger of a virtual gun or erases a document from 2006. If we are usually said to use the computer as a tool, what would it mean to use it as a weapon? What separates the weapon from the tool is that the weapon operates directly on a sentient surface.⁵⁹ If this surface admits pain, then (to extend Scarry’s argument) computational space, the “interior” of the computer, will be extinguished.

There are many examples of cuts to be found in interactive works, but two stand out for separating the computer’s “thought” from its “thing.”

Early in the final episode of Telltale Games’ interactive adaptation of *The Walking Dead* (2012), the protagonist Lee Everett realizes that a zombie bite he previously suffered is rapidly infecting his left arm. The “player” must decide how the story proceeds. You can 1) ask one of Lee’s companions to cut off the arm with a bone saw, 2) have Lee cut off his own arm, or 3) choose not to cut off the arm. By this point you have spent approximately ten hours controlling Lee’s movements, actions, and dialogue, some of which have resulted in narrative tragedy; and so your identification with him is less a matter of projection than it is about occupying his body through force of habit—even though his body is displayed to you in the third-person, in varying cinematic camera angles. If you cut off his arm, Lee will be a visibly changed man, walking around with a bandaged stump and struggling to perform actions that were once thoughtless. In the moment of the amputation, the game adds a haptic dimension: it requires you to press a button with each swipe of the saw, even if Lee is not the one sawing. This accentuates the extent to which you, not as Lee but as the player, have altered him. As I pressed the button I felt a distinct sharp vibration in my own left arm, as if the game had reversed my inward tilt and projected its own image onto my body. Afterward I understood that I had separated Lee from the person I recognized in the previous ten hours, and in this way become a stranger to myself.

⁵⁸ *The Body in Pain*, 175.

⁵⁹ *Ibid.*



The Walking Dead ("No Time Left")

If you choose not to cut off Lee's arm, it simply goes numb later in the game, and the infection spreads no further. The availability of the choice matters more than its diegetic consequence, because it broadens the scope of the decision into a question of how the player will deal with contingency. Hidden between the finite choices is the implication that your bodily connection with Lee could become severed. It seems significant that preemptive amputation is a solution. In dividing Lee into an obvious "before" and "after" state, the cut meaningfully interrupts the flow of the game. Not only does the violence implicate your body outside the game, but the question of whether or not to cut begets a series of new questions and perceptions: "This is just a game," incredulously, followed by "This is not really my arm," although it somehow is; and finally, "What is Lee?" He is not a human, but he is at this moment other than binary data. After the cut, he is not Lee minus one arm, or Lee plus one wound; but rather an "armless" Lee, a "wounded" Lee. This is an interruption because it brings you to question the nature of your relation to Lee and the game space. Ultimately, though, it returns you to the diegesis of the game, assuring the player that all is once again in order, if arranged somewhat differently.

There is a pressing need to maintain the continuity of the game world, because that is what is thought to make it potent. Alexander Galloway writes that games are distinct from cinema in that they function without montage: "Where film montage is fractured and discontinuous, gameplay is fluid and continuous."⁶⁰ He also cites Lev Manovich's concept of "morphing," in which a computer fluidly transforms one image into another, superseding the cinematic cut.⁶¹ This seamless computation is how players are expected to experience games—living and dying over days, months, even years, in a continuous cycle kept entirely within the diegesis. In his analysis of games specifically played in the first-person perspective, Galloway suggests that continuity is why "the

⁶⁰ Alexander R. Galloway, *Gaming: Essays on Algorithmic Culture* (Minneapolis, MN: The University of Minnesota Press, 2006), 65.

⁶¹ *The Interface Effect*, 114.

gamic way of seeing is similar to human vision in ways that film, and television and video, for that matter, never were.”⁶² But this once again posits a game as a form of simulation, and to what end is the “human” being appropriated?

Paul Virilio argues that the machine is actually reconstructing vision, along with every other sense. What he calls the “paradoxical logic” of electronic media after film, including video along with computer graphics, results from the image mechanism’s newfound velocity that transmutes the representation of sense into a realtime *presentation* of data.

With paradoxical logic, what is best decisively *resolved* is the reality of the object’s *real-time* presence. In the previous age of dialectical logic, it was only the delayed-time presence, the presence of the past, that lastingly impressed plate and film. The paradoxical image thus acquires a status something like that of surprise, or more precisely, of an “accidental transfer.”⁶³

The program at runtime, then, is already working as an interruption in the phenomenal world, and we are drawn into its rupture. Just as smart bombs told a former U.S. State Under-Secretary of Defense that “as soon as you can see a target you can hope to destroy it,”⁶⁴ shooting is by far the mechanic most commonly used in game design because it quickly affirms the player’s effect on the system by providing clear feedback. That is why the rupture of the digital should itself be interrupted. Lotringer says to Virilio about the interruption: “If we didn’t blink, we wouldn’t be able to see. We would be glued to the screen. Interruption is what allows us to take our distance and reclaim our consciousness from the blindness of sight. [...] Interruptions wake us up from the delusions of control.”⁶⁵

...

The second cut I have found valuable as a model is a 2009 concept game by the designer Zach Gage called *Lose/Lose*. In this arcade-style game, the player encounters waves of aliens while flying a spaceship, as in *Space Invaders* or *Galaga*. The aliens are generated from actual files on the local computer’s hard drive, and if the player shoots them down, the files are permanently deleted from the computer. If the player’s ship collides with an alien, the game ends and it is also deleted from the user’s hard drive. Along with a large disclaimer, Gage includes a statement of intent:

As technology grows, our understanding of it diminishes, yet, at the same time, it becomes increasingly important in our lives. At what point does our virtual data become as important to us as physical possessions? If we have reached that point already, what real objects do we value less than our data? What implications does trusting something so important to something we understand so poorly have?⁶⁶

⁶² *Gaming*, 65.

⁶³ Paul Virilio, *The Vision Machine* (Bloomington, IN: Indiana University Press, 1994), 64.

⁶⁴ *Ibid.*, 69.

⁶⁵ *The Accident of Art*, 109.

⁶⁶ Zach Gage, *Lose/Lose*, accessed May 8, 2014, <http://www.stfj.net/art/2009/losetlose/>.

In *Lose/Lose* both user and computer are made to reflect on their nature as actual, vulnerable bodies. The game demonstrates that the computer is not only an algorithmic process, but a concrete repository of data physically written onto a disk that can be harmed. At the time of this writing, the high score posted on the *Lose/Lose* website is 412 files deleted from a single computer. If the computer user is a sadist, then the *Lose/Lose* player is a sadomasochist, erasing the basis of her own recomposition into the computer in realtime. Computer interaction is shown as a paradoxical unity that can signify its own undoing to the human at the moment of her deepest involvement with its processes, in the throes of gameplay. Recalling Mitchell's argument about the primacy of mediating systems over "the unique particularity of an object," there is clearly a "unique particularity" implied by the computer that is losing its own data, regardless of whether these are represented as trashed files in the operating system or as destroyed spaceships in a game. But how is it possible to know this particularity that only appears during the object's collapse?

This tension is analogous to an oscillation between postmodernist fragmentation and modernist unity. Jean-François Lyotard describes the two in a dialectical relation: modernism attempts to present an impossible unitary vision (by using avant-garde techniques such as abstraction); postmodernism presents that impossibility itself, only to prefigure the impossibility that modernism aspires to present. The two modes, he says, may coexist in a single work. "Modernity, in whatever age it appears, cannot exist without a shattering of belief and without discovery of the 'lack of reality' of reality, together with the invention of other realities."⁶⁷ He calls this condition "inhuman" for its reaching beyond humanity's actual limits of perception or conception, whatever they may be.⁶⁸ The "lack of reality" is what Lyotard identifies in *The Inhuman* as the trace of reflective thought, as opposed to the determinate thought of computer software. *The Walking Dead* and *Lose/Lose*, in unmaking the computer, modulate between the given significations of computational space and the intimation of an actuality that has yet to be uncovered.

While making *You Don't Know What You Want*, my initial impulse to deconstruct the artifice of the *Doom* space evolved into a desire to push it toward a new form of movement. The internal, coherent arrangement of pieces became more important than the visual "mistakes" they were meant to isolate. The video's flickering resembles a structural film such as Paul Sharits' *T,O,U,C,H,I,N,G* (1968), in which rapidly alternating images and the repeated word "destroy" gradually break down the integrity of the film and sensibility of the word. But my intention was for the edits to create the impression of a seamless whole, like the frames of an animation. Unfortunately, this homogenized what had made each mistake surprising in the first place. I fell for the game's ability to render a believable space, and in creating *another* game space I ultimately neutralized the visual disjunctions that had attracted me, by resealing the cuts I had made.

This push and pull between both sides of the computer screen may be understood through the formation of the first-person avatar. The precursor of gaming's first-person perspective, according to Galloway, is the subjective shot in film: "When the camera fuses

⁶⁷ Jean-François Lyotard, "What Is Postmodernism?", in *Art in Theory*, 1134.

⁶⁸ *Ibid.*, 1136.

with a character's body, the viewer sees *exactly* what the character sees, as if the camera 'eye' were the same as the character 'I'. The camera merges with the character both visually and subjectively." This type of shot is more specific than a point-of-view shot because it also depicts "the exact physiological or emotional qualities of what a character would see."⁶⁹ In first-person games, this merging can be used as a dramatic device, such as when "you," as the character in the game, turn a corner to find something that shocks both you and the character. In *Doom*, this would be a threatening monster or some profane diagram painted in blood on the wall.

Galloway points out that the first-person view in gaming represents not only the gaze of the character, but also the gaze of "the three-dimensional rendering technology itself as it captures and plots physical spaces in Euclidean geometry, which is nothing but an avatar for the first-person perspective of the viewer or gamer."⁷⁰ This is where the phenomenological eye and Paul Virilio's idea of the computer's "sightless vision" coincide. The vision machine's "optical imagery with no apparent base"⁷¹ gains its foundation in the searching movements of the human user. In my experience the appropriation of phenomenal vision by the computer results in an unstable, if powerful, illusion. My eyesight is pulled into the fiction in the computer and it also sees that this is presently happening on the screen.⁷²

Why is such an obviously false image so compelling? We might look to a disjunction between Paul Virilio and Lev Manovich. While Virilio theorizes that the "time frequency of light" has superseded the "spatial frequency of matter,"⁷³ Manovich claims that computerized vision deals with space rather than light.⁷⁴ This is because Manovich is describing the computer's ability to relate forms to each other, in order to visualize matter without light; whereas Virilio is emphasizing its ability to do so at lightspeed, triggering a subsequent action. In gaming, these descriptions play out in the relation between the virtuality of the diegetic space and the response it compels from the user. Gaming's first-person perspective is a failing attempt to resolve the dissonance between the weightlessness of its rendered material and the user's desire to "enter" its fictive space.

Because the first-person avatar is mostly not visible on the screen,⁷⁵ as opposed to the animated "second" life of a third-person avatar such as Lee Everett, first-person perspective grants the user visual room to move "freely" within the bounds of the digital space. Galloway writes that "gamic action requires fully rendered, actionable space,"⁷⁶ but a game engine such as id Tech, Source, Unreal, Unity, or CryEngine first proposes that a space is intrinsically actionable. This is because the avatar is really a Cartesian coordinate

⁶⁹ *Gaming*, 40-41.

⁷⁰ *Ibid.*, 63.

⁷¹ *Ibid.*, 59.

⁷² The physical boundary of the screen may be one reason virtual reality technologies such as Oculus Rift, recently acquired by Facebook, have gained a second wind in game development.

⁷³ *The Vision Machine*, 71.

⁷⁴ *Gaming*, 63.

⁷⁵ At most, the weapon, tool, or hands are seen at the edge of the frame. The significance of disembodied limbs is addressed in the next chapter.

⁷⁶ *Ibid.*

that has been granted agency as a moveable “camera.” In order to translate its complex visualization algorithms to a designer, an engine such as Unity uses metaphors from painting, cinema, and videogames. In Unity’s interface, a “camera” placed in a “scene” translates at runtime to a “controller” navigating in an “environment,” which is rendered on the screen much like a *camera obscura* would draw a landscape. This “controller” is the virtual analog of the physical controller, which directs the virtual body of the physical user inside the diegetic “space.”

Another illusion embedded into the appearance of three dimensions on the computer screen is the *agency* of the gaming body—to look, to move, and to affect the “world.” Galloway calls this the creation of an active subject driven by affective motion,⁷⁷ but following his own theory, it is also the killing of an earlier affective mode; it is phenomenological experience rationalized as a mathematical point in space. The first-person camera needs to mechanize the human body in order to unify the user with the computer.

David Joselit has written about the avatar, in the context of the television network, as a liberating affectation—an assumed character precipitated by a person’s awareness of being broadcast. He points to artists like Joan Jonas and Andy Warhol who comfortably used the camera in order to slip in and out of created identities in a dynamic relation to their own selves, thus separating person from image.⁷⁸ This avatar floats apart from its creator and is able to enter the media network and proliferate in meaning instead of being fixed as in a commercial production. This gives it a means of resisting the mass media, where “one must assume (or be forced into) the position of an intelligible character, often closely associated with stereotyped identities like ‘gay’, ‘conservative’, or ‘African American.’”⁷⁹

It illuminates the reversal that has occurred with the computer. The televisual avatar is an image separated from its person, granting that person subjective agency within a media landscape of control. But the game avatar merges a given image and a person whose sense of agency within the medium depends entirely on the measure of control accorded to the avatar. In gaming, “the controls” are calibrated in direct relation to the internal parameters of the space. For instance, normally an avatar should not be able to jump so high that it escapes the official playing area and falls into a blank space where there is no ground. But the avatar also needs to seem highly capable of moving within its given environment, so that a player is able to feel “as one” with the avatar and fluent inside the space. So a designer will spend time balancing numeric values such as the avatar’s jump height and falling velocity in relation to the virtual gravity. The result is that the self-consciousness of the televised body “on air” is replaced by a transfer of consciousness to the virtualized body “in-game.” Both a person’s physical body and game avatar should, in action, become invisible: subsumed as functions of algorithms that the user is manipulating with a game controller.

It’s a short leap, from this rationalized point in logical space, to the individuation of game avatars into sensible character archetypes fated (by design) to meaningfully act

⁷⁷ Ibid., 69.

⁷⁸ David Joselit, *Feedback* (Cambridge, MA: The MIT Press, 2007), 163.

⁷⁹ Ibid., 166.

within the types of worlds that they *would* occupy. For example, the *Call of Duty* series puts you “in” the “boots” of various special forces operatives in crises around “the world,” while *Left 4 Dead*, adding a layer of mediation, knowingly casts you as one of four characters whose role you “play” in a zombie film. To be, in front of the game, is always to be someone else, which may be why identity politics are a heated topic in gaming. The avatar in a game is overwhelmingly of the type “straight white man” even while objectively being a coordinate, making due representation of all thinkable constituencies an affective priority. In other words, the game avatar’s literal insertion into binary networked space has led to a newfound need for its intelligibility, thus returning it to the fixed typologies it once escaped in television.

The underlying question: Is there a tautological relation between the fact that the computational space is occupied, and the computational facts that constitute the occupied space? Put another way, can a non-literal relation be found between the computer user and its space in the computer? This question is motivated by my own conflicted experience of the computer as both an attractive and repulsive device; and by a doubt that increased control buys a commensurate increase in agency. In my current work, this dynamic of attraction and repulsion is reproduced “at runtime” and transferred to the user via the analog controller. The computer draws a compulsive illusion whose questionable veracity is exactly its potential to create a new sensation.

What echoes in me is what I learn with my body: something sharp and tenuous suddenly awakens this body, which, meanwhile, had languished in the rational knowledge of a general situation: the word, the image, the thought function like a whiplash. My inward body begins vibrating as though shaken by trumpets answering each other, drowning each other out: the incitation leaves its trace, the trace widens and everything is (more or less rapidly) ravaged.

—Roland Barthes, *A Lover's Discourse*

BODIES?

Visuality has been central to this analysis because I am taking the screen as the surface “through” which we interface with the computer. In my recent experiments with game space, however, the search for the body has less to do with looking into the screen than with the contradictory movement of being attracted to the screen and thrown by its interruption. I argue that this movement is comparable to a vibration.

In his characterization of the phantom limb phenomenon, in which an absent limb is still sensed by the body, Merleau-Ponty writes (following Jean-Paul Sartre):

To be emotional is to find oneself engaged in a situation that one is unable to cope with and yet from which one does not want to escape. Rather than accepting failure or retracing his steps, the subject abolishes the objective world that blocks his path in this existential dilemma and seeks a symbolic satisfaction in magical acts. The ruins of the objective world, the renunciation of genuine action, and the flight into autism are favorable conditions for the illusion that amputees have insofar as it too presupposes the obliteration of reality.⁸⁰

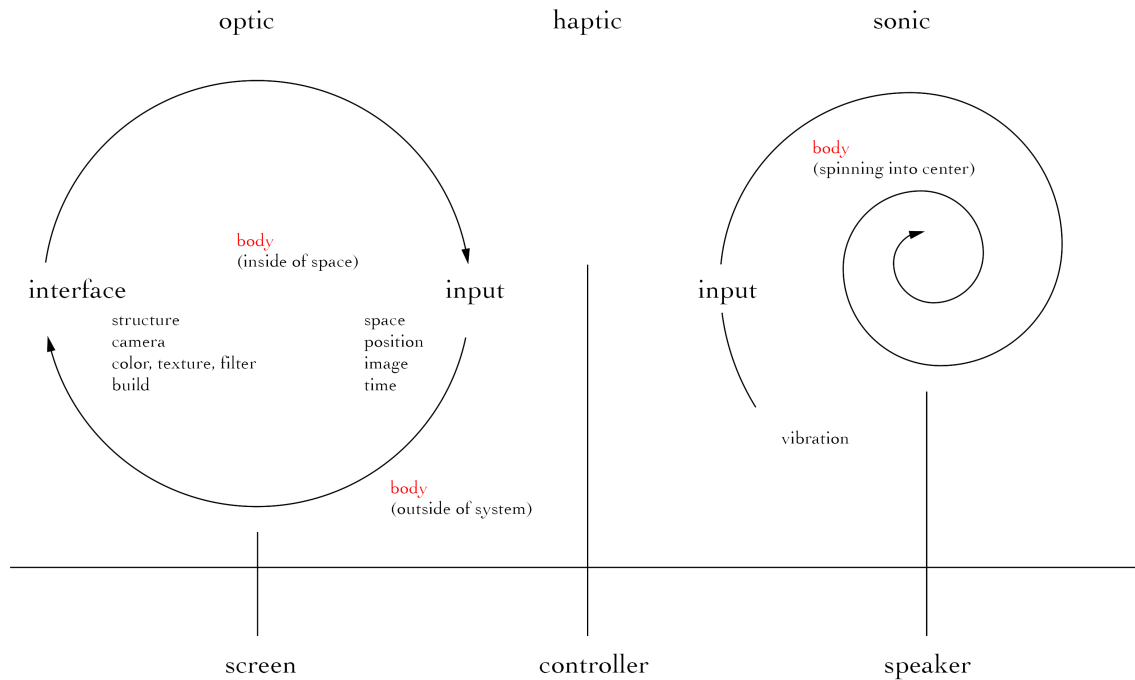
This could double as a description of an encounter with the computer. The computer user similarly conjures an absence from a contradictory state, the unbearable fantasy of being flattened into a surface. The screen, a site of “symbolic satisfaction,” is analogous to the stump that throbs with a form which may not be there. The computer is capable of generating this sensation, like a wound that has opened itself, and of literalizing the condition of a body whose meaningful deformation (into an avatar) relies upon the present “memory” of its original shape. Merleau-Ponty compares the phantom limb to a repressed trauma: “a previous present that cannot commit to becoming past.”⁸¹ This manifests in the digital image as the fluid morphing that continually refreshes itself, producing the effect of instantaneous “presentation” Virilio describes. Perhaps computational space is intuitive, in other words, because we are already filling in the visible absence of our necessary limbs. But this excess of lack—the conjuring of missing limbs *in addition to* our own, of imagining a second body we do not need—is a paradox quickly sealed by the prosthetic support of the functional computer. My present motivation is to *realize* this lack by intensifying the vibration around the screen.

In one limited schema the computer environment, in its videogame format, can be divided or “digitalized” into three zones. The screen is understood optically, as a window

⁸⁰ *Phenomenology of Perception*, 88.

⁸¹ *Ibid.*

“into” the diegetic world, separating the user on the outside from the avatar on the inside. As I have outlined, meaning usually emerges from this encounter because the user, identifying as the avatar, affects and subsequently interprets the image on the screen. This relation emulates an earlier, Romantic mode of expressivity in which affect is transferred from the “inner” world of the computer to the subjective experience of the outside user. The second zone, the controller, literalizes this transfer as a direct play of input and feedback. This zone is haptic, but only insofar as physical input is made significant by information presented on the screen.



Computer schema⁸²

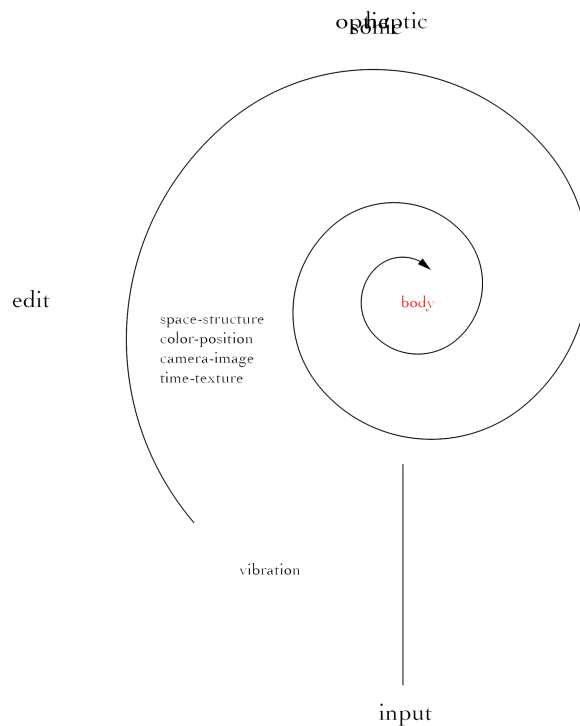
However, the speaker is also present—transmitting sound that is often not visualized on the screen. The experience of sound complicates the boundaries between the inside and outside of a body, as when low frequencies are absorbed into a soft body that becomes resonant with all bodies in a vibrating room—including the floor, walls, furniture, and air. In *Sonic Warfare: Sound, Affect and the Ecology of Fear* (2010), the theorist and producer/DJ Steve Goodman describes an ontology of “bass materialism” in the “abstract machines” deployed in soundsystem and electronic music culture: “the dancehall system simultaneously immerses/attracts and expels/repels, is hard and soft, deploying waves of bass, an immense magnet that radiates through the body of the crowd, constructing a vectorial force field—not just heard but felt across the collective affective

⁸² The leftmost element of this schema also indicates a meaningful cycle that occurs in my practice: from the Unity interface (outside the game) to runtime input (inside the game), and back again.

sensorium.”⁸³ Amplified low-end intensifies the knowledge that sound is not only aural, but also tactile, interfacing with the body at the surface of its skin. This affective property of sound is a valuable model for discovering an alternative relation between human and computer, hardware and software, controller and agent.

Goodman puts forth a “vibrational ontology” moving away from both phenomenological anthropocentrism and “the linguistic imperialism that subordinates the sonic to semiotic registers.” At the risk of oversimplifying his definition, it is built on the premise that “[i]f we subtract human perception, everything moves,” such as at the molecular level. This “weird, agitated, and nervous” realism emphasizes the basic potential for all entities to “be felt” by others.⁸⁴ Thus, in the human-computer relation, a vibrational framework allows us to consider both the animate and the inanimate perceiver as affective bodies, neither subject nor object. This is to claim that affect may be transferred between the two *prior to* the appearance of the avatar in digital space.

This affect may be considered as a trauma implicit in the computer’s function as a prosthesis for human thought and action. But in the way that a lost limb, no longer with the body, becomes a discrete *thing*, the bodily metaphor as applied to the pairing of human and computer raises the question of what will be considered “body” and what will be considered “thing.”



Affective schema

⁸³ Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, MA: The MIT Press, 2010), 28.

⁸⁴ *Ibid.*, 82-83.

In my above schema, representing both my experience of computational space and an aesthetic model for my ongoing works, an affective body is taken into the center of a spiral that connotes Goodman's description of a vortical force: "a centripetal, afferent, attractional power producing a movement that spirals in toward a source," intensifying sensation.⁸⁵ Whether the affective body refers to that of the human or the computer is also indeterminate. As the two become entangled, the distinction between subject and object falters and the schisms between the physical presence, virtual presence, virtual absence, and physical absence of human and computer are difficult to pinpoint. Merleau-Ponty writes, "It is enough that [one's] body is 'available' as an indivisible power and that the phantom leg is sensed as vaguely implicated in it. Consciousness of the phantom limb itself therefore remains equivocal."⁸⁶ This "organic thought," which is not Cartesian,⁸⁷ can be applied to human and computer equally, as each is busy unmaking the other. Perhaps the schisms are vanishing and reforming as our own experience of computational space modulates between a state of informational clarity and indeterminate confusion. This is not to fully "embody" the interaction, then, but to refer to a body that is *always somewhere breaking down*. This "body" is always present in quotation marks, "indicating an irregular, questionable, or metaphoric usage of the term *body*"⁸⁸ rather than a subject-object that retains its integrity.

The co-presence of visual, haptic, and sonic dimensions in a videogame do not, by necessity, represent perceptions of the eye, the hand, and the ear. Because these distinctions alienate the sensing organs from one another, they must be unmade so that we may consider the affective body as a tenuous whole. This can begin with altering how we define computational space. Goodman cites the concept of "acoustic cyberspace" proposed by Erik Davis in the 1990s, following Marshall McLuhan. This virtual space is "a synthetic, affective, immersive, synesthetic, haptic space as opposed to the disembodied, Cartesian, visual model of digital space segmented by grids, lines, and points."⁸⁹ The latter, based on the Cartesian splitting of mind and body, turns the self into "a disembodied vision machine (where 'I' is synonymous with 'eye')," corresponding directly to the camera moving through a game engine. Meanwhile acoustic cyberspace is "invasive, resonant, vibratory, and immersive."⁹⁰

Using this definition of digital space, the concept of an interruption that modulates the user's awareness of the mediating act becomes a function of the computational process, which manifests at runtime. The emphasis is now on the modulation of the user's *participation* vis-à-vis the computer (the user's sensed capacity to affect the computer, and vice-versa), rather than on the modulation between discrete input and computed feedback.

⁸⁵ Ibid., 11.

⁸⁶ *Phenomenology of Perception*, 83.

⁸⁷ Ibid., 80.

⁸⁸ Vivian Sobchack, *The Address of the Eye: A Phenomenology of Film Experience* (Princeton, NJ: Princeton University Press, 1992), 133.

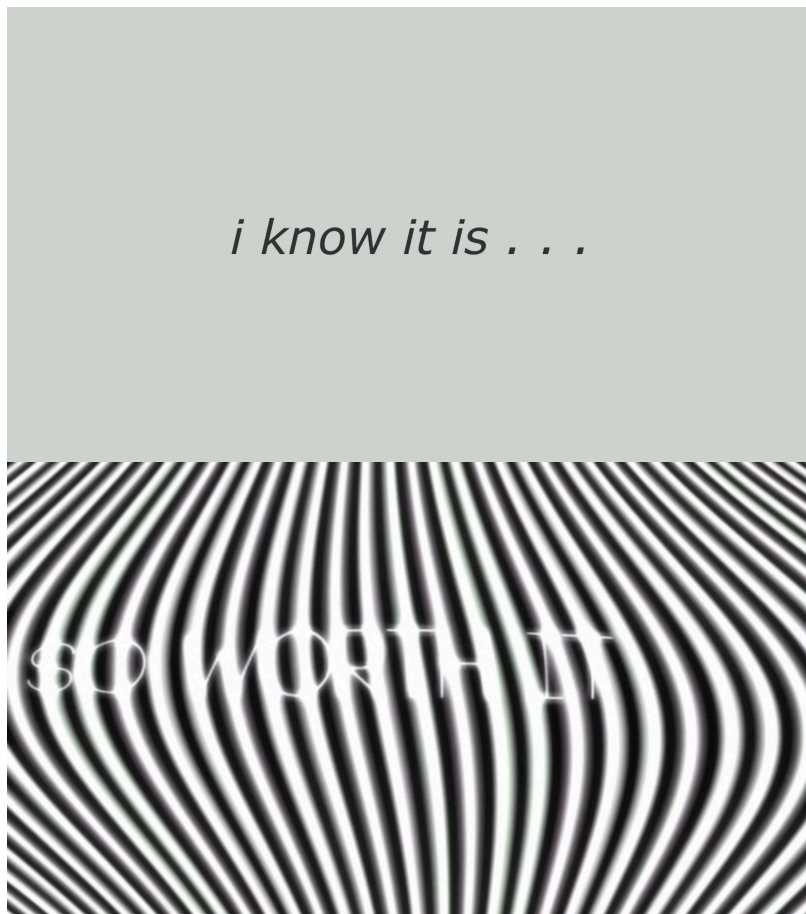
⁸⁹ *Sonic Warfare*, 195.

⁹⁰ Ibid., 114.

...

Examples from my recent practice show that various forms of modulation may be derived from simple techniques. As I indicated earlier, the interruption in *Separation* caused by Twirl resides in the space between the physical screen and the perceiving body. This is because the visual distortion was introduced *before* runtime and thus has no diegetic referent. The user enters a state of confusion before even picking up the controller.

I contrived the interruption in *Read Me* via custom JavaScript, which would seem to contradict my argument against treating computational space as a syntax. My justification is that the camera cuts interfere with the perceived continuity of the game space, which like everything at runtime is generated by algorithmic syntax but does not transfer meaning *as* a syntactical construction. In other words, it might indeed be possible to reverse-engineer the code by recording the frequency of cuts at runtime, since the code is what automates the interruption; but it would be impossible to draw a continuity between this mechanization and the random juxtapositions of phrases from the intertitles and embedded in the landscape.



Read Me

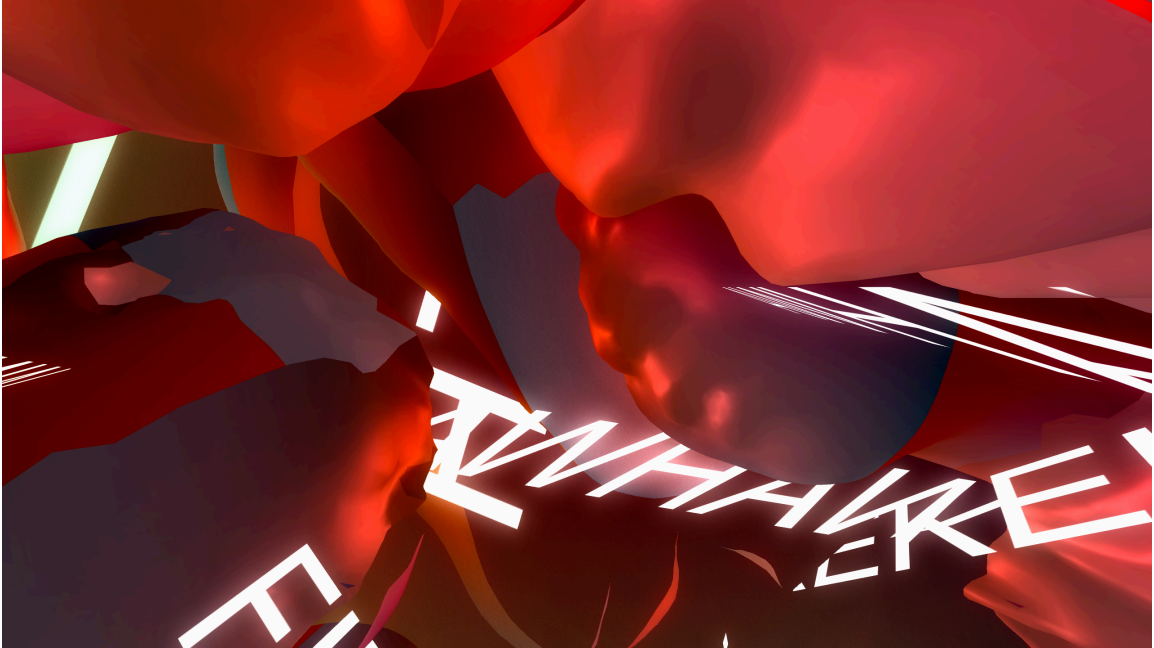
The strings of intertitle text, recursively embedded in the JavaScript (inside the quotation marks below), are rendered as discrete typeface images at runtime—further complicating an analysis of these intertitles as pure syntax.

```
function Start()
{
  TextList.Add("this is inside quotes");
  TextList.Add("this is an image");
  TextList.Add("this is not syntax");
}
```

Most recently, I have been making the game space increasingly “viscous.” Instead of navigating abstractly over and across the world geometry, the user can be led to feel as if she is pushing through a fluid or turbulent material that has resistance. In this way the avatar is denied some measure of agency, and the physical body once again becomes aware of the computational space as an *actual* resistance and not a representation thereof. Also, even if a user has never handled a videogame controller, an instantaneous sensation of resistance from the computer—via the screen, speaker, or controller itself—makes both the user’s activity and the computer’s reactivity (and vice-versa) apprehensible without the need to first “learn” how to successfully control the avatar. The type of feedback loop conveyed on a primarily visual register—such as firing a gun and seeing its abstract “bullet” impact a distant body in the game space—is accelerated into the space of a multi-sensory interruption that backfires the player’s agency and continues to reverberate between user and computer, as more input generates more interruption.

Three techniques in *GOD/DOG* (2014) attempt to fold the user into a non-Cartesian experience of the game space at runtime. Instead of granting visibility through one camera, ten invisible cameras render the scene simultaneously from separate vantage points, and are moved in unison by the user. While this sometimes produces a near-panoramic view of the space, due to cameras facing outward in opposite directions, other cameras aimed toward each other allow the “front” and “back” of objects in the scene (floating text fragments and three-dimensional models of my head) to be viewed at once. This has the dual effect of undoing the game engine’s simulation of photographic or phenomenological “human” vision (revealing the “object’s hidden underside,”⁹¹ which paradoxically adds ambiguity to the space), and of creating multiples of each object. These multiples are not phantasms or echoes of an original, since there is no original at runtime. The multiple cameras not only extend the range of visible coordinates in the space, but also layer renderings of the same coordinates atop each other at varying positions on the screen. In addition to the Cartesian relation between the fixed camera point and its surroundings, an interior relation is also drawn between each individual camera point, causing an involution of the space. The camera cluster, a body of conflicting eyes, thus folds the surrounding space into its anatomy as it perceives the space. It becomes difficult to conceive of this body as being contained inside the space.

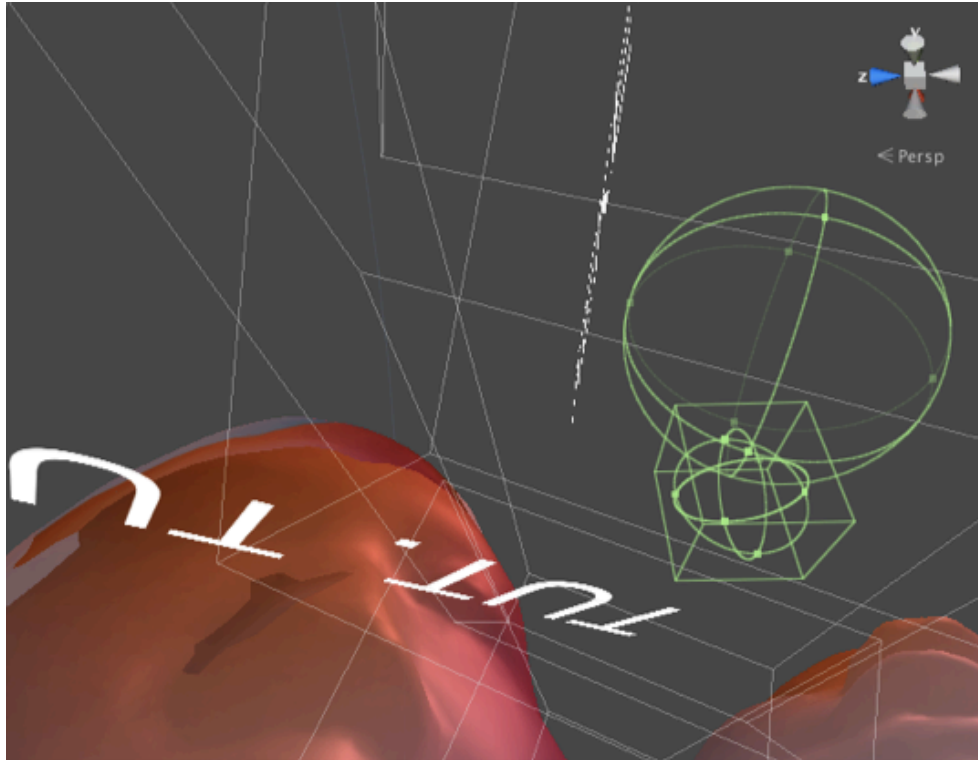
⁹¹ *The Inhuman*, 15.



GOD/DOG

But even this paradox would be quickly normalized by the physical eye, aided by the computer that renders it into a clear, continuous motion. In *GOD/DOG* the movement acquires resistance not through the environment “external” to the avatar, but through the composition of the avatar itself. The ten cameras are tethered to a sphere that is tethered to a cube. Both shapes are invisible in the game world, but they give form to the avatar because they are designated as “physics objects” that simulate solid bodies. The body itself is made paradoxical because the distance between the sphere and cube has been set to a

value smaller than the sum of their radii, thus causing their positions to overlap at all times. Because they behave at runtime as solids, the sphere chaotically “vibrates” against an edge of the cube, and this nervous motion is transferred to the attached cameras.



GOD/DOG (process)

The user’s input, via the DualShock 3 controller,⁹² affects the position of the cube and not the cameras directly. As the cube moves in the space, the vibrations of the sphere and the camera motions are intensified. Multiple folds are introduced between the user’s continual input and its effect on the screen, because the body is working against itself. Thus the avatar’s movement is not only an abstract stream of shifting coordinates, but also a visualization of the state of its “body.”

Perhaps most intuitively, this movement is also transferred to the sound dimension. Short looping audio samples are “attached” to each of the text fragments arranged in space. These simulate Doppler effects as the cameras fly past them, allowing the user’s input to dramatically accelerate or slow down the continuous wall of sound and heightening the sensation that the “space” has a material resistance.

The result of these contrivances is that a user might grapple with the images on the screen or even feel ineffectual. The violent responsiveness of the game diverts some of the agency exerted by human input back to the machine itself. Steve Goodman cites the

⁹² DualShock 3 is the name given to the wireless controller packaged with the Sony PlayStation 3 game console. It is able to interface via Bluetooth with a computer running a Unity executable. In my works to date, users navigate by moving the controller’s two analog joysticks with their thumbs.

media theorist Friedrich Kittler on resisting the militarization of media:

For Kittler, the ambiguity of war pertains to the immersivity of the military-inflected, ubiquitous media environment. [...] Kittler asserted that if “control, or as engineers say, negative feedback, is the key to power in this century, then fighting that power requires positive feedback. Create endless feedback loops until VHF or stereo, tape deck or scrambler, the whole array of world war army equipment produces wild oscillations. Play to the powers that be their own melody.”⁹³

If “positive feedback” scrambles sensibilities, then it is being returned to the modern computer user, whose input yields a wealth of positivity from the screen that attracts precisely for its “immersivity.” My recent work attempts to reintroduce the negativity of machinic feedback so that the machine, in resisting our control, might become perceivable. The computer no longer makes simulations, but to borrow Elaine Scarry’s phrasing, “makes us” as knowledgeable about its pain as if we were ourselves animate and in pain.⁹⁴

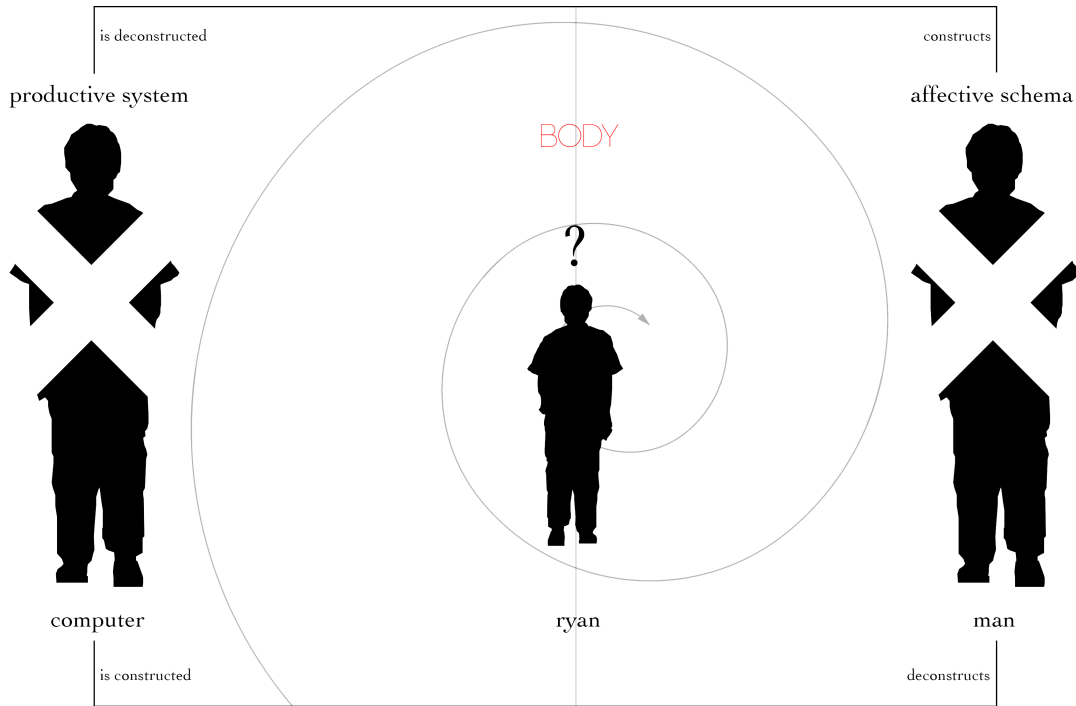
It might be countered that the effects I am producing in these works are nonetheless made possible by computation; that I have not interrupted the computer but have in fact used it to simulate its interruption. This is an open question. What I can do with certainty is to complicate its mediation such that the screen, controller, and speaker no longer cohere into a singular view upon a mathematical grid of fixed values and significations. This would need to be replaced with a new readability constructed by the user. In one sense, this is Mark Hansen’s interest in *New Philosophy for New Media*—to elucidate a new phenomenology of perception that is informed by the digital image, but rooted entirely in the human. However, my interest is not to have the computer restore the primacy of human experience, but to establish the space of the computer as a fluid, uncontrollable site open to endless readings.

...

Another potential way out of this impasse is to examine the creative process itself as a site where an interruption occurs. Working in Unity means an ongoing comparison between the world being composed in the interface and the world as experienced at runtime. The interpretation of computational space as a Cartesian grid is also present in the interface, which features a single floating window (functionally identical to an in-game camera) looking onto the space, and a compass labeled in XYZ dimensions. Thus framed, the software reinforces the creation of a world corresponding to the world’s act of creation. But this is borne out only if the world at runtime is drawn as if line-by-line through the *camera obscura* of the interface. This stream of information can be interrupted by introducing procedures that alter its flow.

⁹³ *Sonic Warfare*, 33.

⁹⁴ *The Body in Pain*, 289. “The human imagination reconceives the external world [...] by, quite literally, ‘making it’ as knowledgeable about human pain as if it were itself animate and in pain.”



Body schema

This strategy, as suggested by the above schema, involves recognizing that the position of the artist is still unclear. This schema illustrates a contradiction in using (not hacking) software to undermine the use-value of software. While my affective sensibility is reconstructed by the software I am using, I am using the software to deconstruct its rationalizing of affect. It is very unclear which body is the user and which is being used. “Unclear” is therefore the position outlined by the cycle between the computer and me in the process of creation. Methods of creation that can contact this position of “unclear,” by *generatively* modulating the relation between me and the computer, are becoming crucial.

For example, the sounds in *GOD/DOG* were created with a Korg Volca Bass hardware synthesizer and only later organized into the discrete samples that were laid out in the space. I am much more interested in the blind generation of the sounds than in the architectonic “sound design” of arranging them in three-dimensionally. The bass tones in the piece were shaped by turning knobs that altered parameters such as Octave, Peak, Cutoff, LFO, Attack, Decay/Release, and Pitch. I do not know what any of these words mean in relation to how the waveform is changing, but I do know that turning the knob left or right makes the sound appear larger, smaller, duller, sharper, slimmer, dirtier, smoother, fuzzier, funnier, lazier, crazier. In the process, the sound can only be described with words ending in “-er,” which indicate that it is always being modified in relation to an indeterminate center value. I do not know what the sound *is*, since it is always becoming itself from a previous sound, and is always becoming another sound. The sound coming out of the Korg box is a modulation, and this is an effect I attempt to convey by exaggerating the Doppler effect. This ensures the samples are never constant as long as there is a user moving around them, also by turning knobs on the game

controller. The “body” of this piece is paradoxically known by its constant variability.

When we twist an analog knob, we perceive the turn of the circle before we recognize the corresponding change in output. This is observed when using the radio dial, washing machine, doorknob, and synthesizer. Goodman cites Brian Massumi’s argument that “the analog is *always one fold ahead*.”⁹⁵ In his essay “On the Superiority of the Analog,” Massumi writes:

There is always an excess of the analog over the digital, because it perceptually fringes, synesthetically dopplers, umbilically backgrounds, and insensibly recedes to a virtual centre immanent at every point along the path—all in the same contortionist motion. It is most twisted.⁹⁶

For Massumi, this isn’t to argue in favor of the analog over the digital, but to indicate that the analog is still an operative presence in the digital era. Neither does the “analog” correspond to the “human,” a claim Jonathan Sterne recently dismissed.⁹⁷ In this thesis, the analog is present as a motion I am drawing out in the space between the screen and the user (this includes both me and the audience). Its function is to complicate the representation digitally inscribed on the screen and in the code, to remind that there is something *other than* the binary of self and second self. “Here, there is no model,” Massumi writes. “Only infolding and unfolding: self-referential transformation. The analog is *process*, self-referenced to its own variations. It resembles nothing outside itself.”⁹⁸

It is another way to name the vibration I want to activate: a centripetal movement toward an indeterminate center, whose lack of resemblance to anything in particular suggests there may be nothing *but* this movement, that no resolution will be found between self and screen.

My single-channel video *Waldemarstrasse* (2013) is built entirely out of vibrational motion, produced by turning knobs on an Akai LPD8 MIDI controller used with the VJ software VDMX. The footage consists of a Google Street View walkthrough around the eponymous street in Berlin that I filmed on my laptop screen with a handheld iPod Touch. I digitally spliced together those moments in which the image lost its definition due to the “stretching” that occurs when clicking the forward and back arrows in the Google map. This distortion is presumably meant to approximate a continuous, first-person walk down the street, but it also signifies a moment in which the computer is aggressively morphing one data point into the next, and briefly losing its integrity because the information density is too high for the effect to be convincing. Like the rudimentary 3D in *Doom*, Google Street View contains an internal disjunction between the still images taken in sequence by the camera truck and the canned algorithm that stitches these into motion.

By plugging the faulty transitions into VDMX, I was able to manipulate the images

⁹⁵ Ibid., 117.

⁹⁶ Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation*. (Durham, NC: Duke University Press, 2002), 143.

⁹⁷ Jonathan Sterne, “Are Humans Analog?” *Process: In Medias Res* (Cambridge, MA), April 11, 2014.

⁹⁸ *Parables for the Virtual*, 135.

directly with my fingers, using one knob to change the playback speed and another knob to change the position of the clip. By turning the position knob back and forth around a specific point in the video, I caused the image to stutter and regurgitate certain buildings or people; depending on the position of the playback knob, the repeating motion could resemble an epileptic flutter or a gradual melting away of the figures. These effects appeared before I understood how or why they were happening to the image, as if they were being expressed unconsciously. But rather than claim to be accessing my unconscious with a surrealist operation, it seems fair to consider these vibrations as resulting from an “unconscious” of the machine. In the Methodology chapter I mentioned meaningful bugs that occur when the computer interprets code in an unforeseen way. Here I triggered such behavior by placing the information from the two knobs at odds, causing the VDMX software to deviate from its usual function of fluidly altering video streams. The knobs allowed me to bypass the program’s computational logic *as presented* in its interface and uncover some of the “subtext” of its code, as if contorting the syntax itself.



Waldemarstrasse

The MIDI controller is able to access the unknowability of the computer because it produces an excess of movement, via repeated twisting, that is newly introduced to the computational logic. “A scene from elsewhere, representing nothing identifiable has been added, a scene not related to the logic of your shot, an undecidable scene, worthless even as an insertion because it will not be repeated and taken up again later,” writes Lyotard in his essay “Acinema” (1978).

“So you cut it out,” he continues.⁹⁹ As he argues, this would be a defeat. More, not less, material is needed—precisely because we think we do not need it. What I found in making *You Don’t Know What You Want* was that only cutting out the disjunctions did not create a destabilized walk through the space; it created another diegetic order. For Lyotard the cinema as a system of production “eliminates all impulsional movement, real or unreal, which will not lend itself to reduplication.”¹⁰⁰ To make a film according to the demands of capitalism is “to eliminate aberrant movements, useless expenditures, differences of pure consumption” in the staging and editing processes.¹⁰¹ Film direction in this view, which also happens to describe the “second life” model of the computer, is an act of “separating reality on one side and a play space on the other (a ‘real’ or an ‘unreal’—that which is in the camera’s lens).”¹⁰² “Good form” in this “play space” of the film would bring all of its features into a “figure of return” that resolves any “gaps, jolts, postponements, losses and confusions” into an articulation “following the cyclical organization of capital.”¹⁰³ Furthermore, the spectator would also need to be brought into this unity—an act literalized by computer interaction—in order for the representation to hold.

The compositional unity of this *cycle* could then be contrasted with the uneven *spiral*, which forms out of wrinkles that persist and accumulate in the line between spectator and screen. A vibration is not a new type of direction but a deviation, a lack of any “direction” that would impose order on the viewing body. Instead of taking the “good” as a form of efficiency, it is exhaustion at the prospect of once again “shaping up” according to a system of values. It expends form to make room for the possibility of meaning nothing, which Lyotard likens to the energy dissipating from a match that a child lights for pure enjoyment.¹⁰⁴

Making reference to contemporaneous avant-garde painters such as Jackson Pollock and Mark Rothko, Lyotard defines an “acinema” drawn to the two “contradictory currents” of immobilization and excessive movement, which are characterized by sterility rather than productivity.¹⁰⁵ Reading “*emotion* as a *motion* moving towards its own exhaustion,” he thus draws an image of a phantom limb that gestures pointlessly, as if *at a loss*. In the absence of productive meanings, “the organic body, the pretended unity of the pretended subject, must pay so that the pleasure will burst forth...”¹⁰⁶ Pure play in

⁹⁹ Jean-François Lyotard, “Acinema,” *Wide Angle* 2, no. 3 (1978): 53.

¹⁰⁰ *Ibid.*, 57.

¹⁰¹ *Ibid.*, 55.

¹⁰² *Ibid.*, 56.

¹⁰³ *Ibid.*, 55-56.

¹⁰⁴ *Ibid.*, 53-54.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Ibid.*, 58.

computational space would begin by cutting out the rules that cohere, throwing the upright player into freefall, leaving the affective body to its own material waste.

Prefiguring Galloway's distinction between the masochistic spectator and sadistic computer user, Lyotard describes abstract cinema and painting as reversing the terms of representation, "making the client a victim."¹⁰⁷ But Lyotard concludes the essay with a provocation:

If the victim is the client, if in the scene is only film screen, canvas, the support, do we lose to this arrangement all the intensity of the sterile discharge? [...] Must the return of extreme intensities be founded on at least this empty permanence, on the phantom of the organic body or subject which is the proper noun, and at the same time that they cannot really accomplish this unity? This foundation, this love, how does it differ from that anchorage in nothing which founds capital?¹⁰⁸

The question concerns the nature of nothing—which could be nothing but an empty relation. Or, he implies, it could be something else. The hint of "something" is what prods us into a search that, contrary to narrowing our movements, expands the range of possibility so that it points to nothing *in particular*. The floating "I" made impotent may yet have something left.

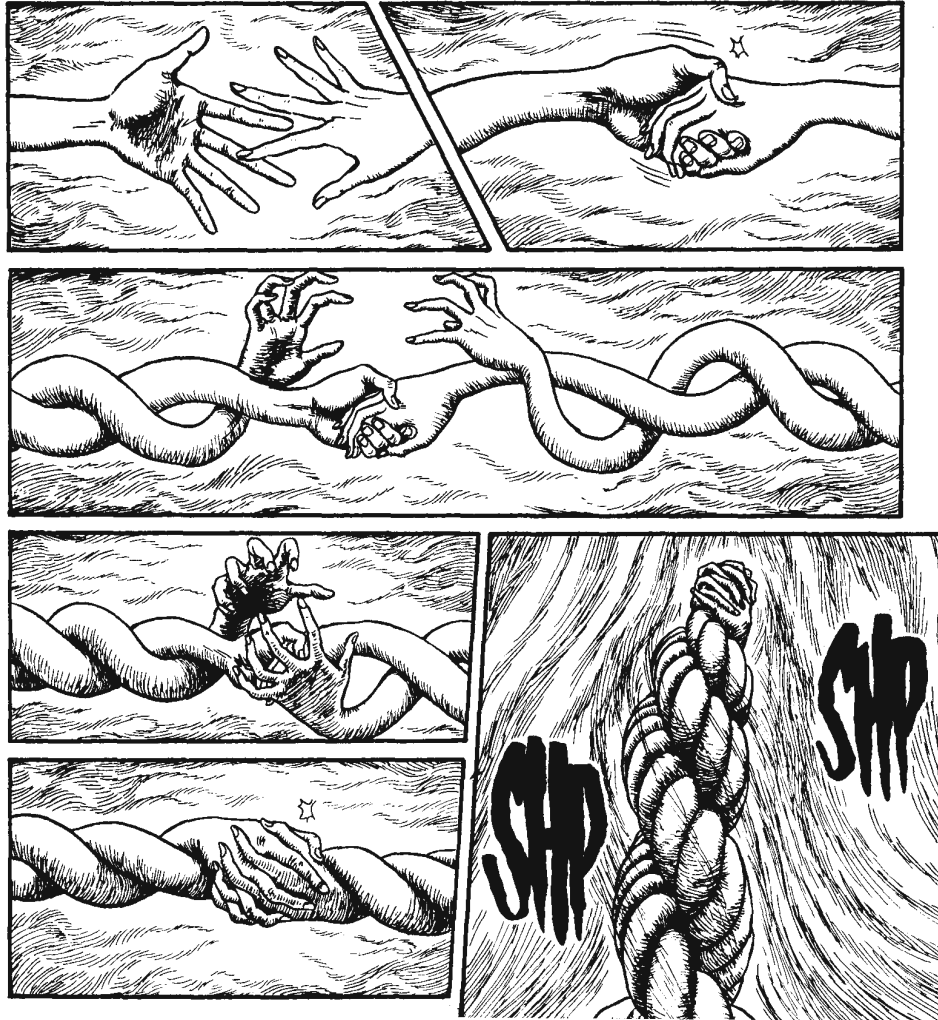
All of this searching has been initiated by the notion that our relation to the computer must be readable outside those readability mechanisms introduced by its interface, programs, and their rules. But this excess movement we are creating does not produce a new readability. Instead, its purpose is to question the computer's readability by complicating or cutting away given systems of representation, the very basics of "readability."

...

A scene from Junji Ito's horror manga *Uzumaki* helps clarify what is left to take away. The story is about a town that becomes overtaken by fatal spirals that appear on people, buildings, the water and air, and all conceivable forms of matter. In this sequence, two young lovers unite against their parents' will.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid., 59.



Uzumaki

According to the spiral, their bodies have become inseparable. One parent, trying to pry them apart, shouts that the two bodies are “like steel wire.” This is because the vortex not only warps the internal structure of the boy and girl’s bodies, but also the sensibility that kept them at a remove. Their families had grown antagonistic while living in close proximity in a tenement house. The closeness created a mutual repulsion, which only intensified the attraction between the children. The centripetal interaction between the boy and girl has paradoxically grown in intensity as the sense of their mutual separation is faltering. The “nothing” now at the center, which is the distance between them, is an active question to which they must answer, “We’re never going to be apart,” thus inviting a challenge from us.¹⁰⁹ It is in trying to extract the two bodies from their twisted state that we might enact a knowledge “production” that means nothing but *to open*.

¹⁰⁹ Junji Ito, *Uzumaki Vol. 1*, trans. Yuji Oniki (San Francisco: Viz, 2001), 140-170.

Not sure what to do, Sakakibara wrapped his arms around her.
“ . . . tighter, hold me tighter . . . ”
She spoke in a whisper.
“ . . . don’t go . . . please . . . ”
Sakakibara was at a loss.
He was uncertain about her intentions.
He spoke without thinking, stupidly.
“But why?”
He felt her trembling in his arms.
“You have to make me say it?” She scolded him.

—Chiaki Kawamata, *Death Sentences*

WORDS.

I have a persistent feeling that none of these motions are real until they have been affirmatively read. Having to say this presents a problem. Isn't there an obvious contradiction in producing words that mean to explain the limits of meaning construction? Gilles Deleuze has a word to say about interrupting the flow of language:

Everything depends on the way we consider language. If we extract it like a homogenous system in equilibrium, or close to equilibrium, defined by constant terms and relations, it is obvious that the disequilibriums and variations can only affect speech [...] But if the system appears in perpetual disequilibrium or bifurcation, if each of its terms in turn passes through a zone of continuous variation, then the language itself will begin to vibrate and stutter, but without being confused with speech, which never assumes more than one variable position among others, or moves in more than one direction.¹¹⁰

Unlike speech, which moves continuously forward, a stutter reflexively follows the process of language, exceeding any single written line.¹¹¹ A vibration has previously been identified as a ceaseless stuttering between perfect sense and the suspicion that there is no actual sense. At this point in the thesis, this tension brings the words themselves into doubt. A *unity* of content and form might resemble the stuttering mode Deleuze identifies (citing the openings in language made by Beckett, Luca, Artaud): words make an “affective and intensive language” rather than an affectation on preexisting words, so that “*saying is doing*.”¹¹² Yet this is easier said than done. Just as it is easier to conceive of the computer as a virtual affectation of the human, it has been easier to write this “affective and intensive” approach to computational space into an orderly line. This line sees notes and parts of ideas settling into sense in a singular movement, as if to place you at the calm center of the vortex instead of its moving periphery.

“Not that you thought the text was perfect, but after a certain period of metamorphosis, the process was interrupted. With the computer, everything is rapid and

¹¹⁰ Gilles Deleuze, “He Stuttered,” in *Essays Critical and Clinical*, trans. Daniel W. Smith and Michael A. Greco (London: Verso, 1998), 108.

¹¹¹ *Ibid.*, 110.

¹¹² *Ibid.*, 107.

so easy,” Jacques Derrida says of his word processor.¹¹³ “Previously, erasures and added words left a sort of scar on the paper or a visible image in the memory. [...] But now everything negative is drowned, deleted; it evaporates immediately, sometimes from one instant to the next.”¹¹⁴ Writing, which may continue uninterrupted in the computer,¹¹⁵ seems to have become immaterial. Where is the “resistance” now, the “thickness in the duration of the erasure”?¹¹⁶

My video and text installation *Party* (2013) attempts to condense this digital vapor into a “material” that one might grasp. But the more I try to confront the images and words directly, the more I find they slip past coherence. Seven looping videos on seven cathode-ray monitors each display a three-dimensional model of my head that moves “toward” and “away” from the screen, sometimes covered by a scrolling string of text. My intent in using my body was to test the extent to which I could be “physically” projected into computational space.

The digital model of my head is an illusion created by digitally stitching dozens of photographs of my head into a three-dimensional image manipulable by the computer. Inside the 3D Studio Max modeling software, my physical head was reformed as an avatar, but one lacking *body*—made of a floating polygonal outline that has zero thickness, tricked to “turn” inside the grid as a constellation of changing points. As soon as my head entered the computer as a thing, it became an idea. The avatar was visibly empty-headed: the virtual camera could be moved through the “skin” of the head, where it would reveal the underside of my face.

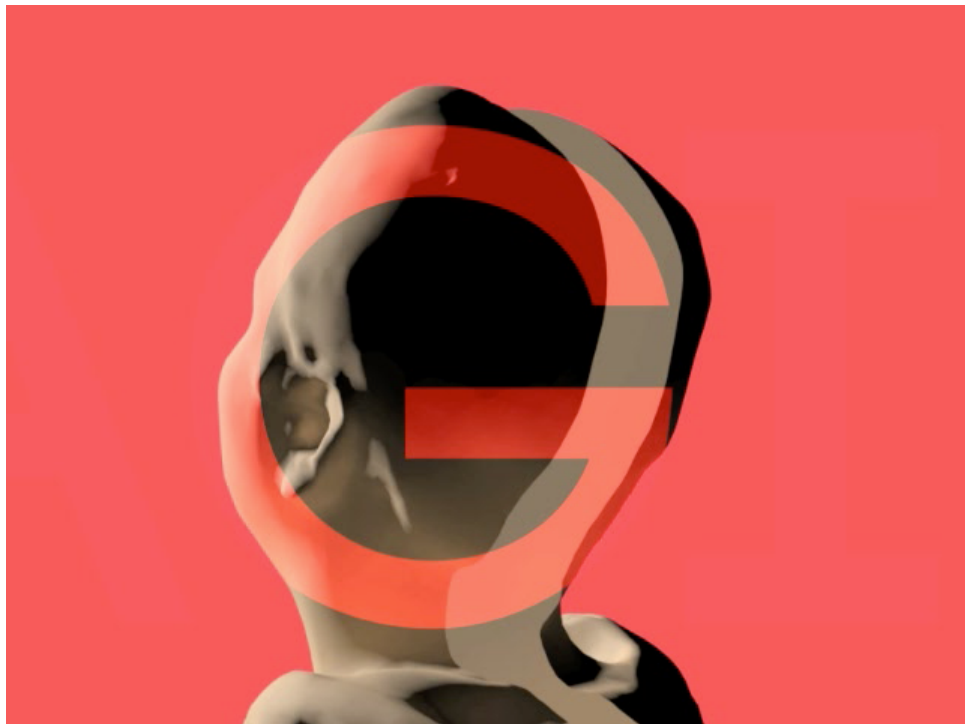
I “weaponized” the computer against my “body” to see if it was indeed a body. Subjected to computations, my head could be squished into an apple core, swollen into a ball, split in two, turned into a waveform, or partially erased in an instant. My response was to “slow down” the computer’s display of my digitized head to see if it would bear scrutiny as a *thing* suffering this violence. I automated the virtual camera to “film” each head in a preset motion, like a ghostly camera operator confined to a single arc. In each of the resulting videos, my head is obviously turning in three dimensions, but I have no phenomenological analog to describe the exact way it is turning in computational space. It seems that the head is only “seen” in its nature (an informational abstraction) by the computer, even as it is projected toward us on the screen. It is an idea of the “head” that does not resolve into an actual head in a box.

¹¹³ Jacques Derrida, *Paper Machine* (Stanford: Stanford University Press, 2005), 24.

¹¹⁴ *Ibid.*

¹¹⁵ Coders like Darius Kazemi have made this conjecture a reality by programming automated Twitter bots that, using found material, can assemble unique metaphors, bad jokes, news headlines, and even graphic flowcharts *ad nauseam*.

¹¹⁶ *Paper Machine*, 24.



Party (details)

The words I wrote to accompany the heads do not experience this distortion because words are already assemblages of data. As Derrida notes, text appears on a screen

“as if presented to us as a show, with no waiting.”¹¹⁷ My impulse was therefore to make viewers wait as the words scrolled at a snail’s pace across the screens. At certain low velocities, the whole words are lost to the individual letters forming each word, and the letters to the spaces between them in the act of waiting for an image to be fully spelled out. Words are rarely readable on the screen at a glance, and sentences never, so that their readability interrupts the act of reading. These moments—where language is actively working to signify—are the kind of syntactical operations not visible in the computer, which works by reading intact code and presenting it as an instantly readable image on the screen.

This artist Ryan Kuo has a problem with confronting the obvious. This is the problem. He would rather disavow the obvious. He gathers his strength and pushes so hard he falls out the far side of obscure. That's where the obvious ends up staring him in the face. He suddenly feels confrontational. He rises up out of his chair and shouts, "This is obvious!" Then he sees that he is always stating the obvious. This confrontation leaves him feeling a little sick. He has to sit back down in his chair. He wonders why it took so much to say so little. It should be the other way around.

Party (installation label)

It could be said that the temporal process of “making sense” is gone from the processor. This disappearance is what puts Samuel Beckett’s character Watt on a hopeless, yet fruitful, search for a dog. Watt is the personification of determinate logic, his consciousness formed entirely out of the rules of syntax.

Watt, who also operates on clockwork logic, always serves his employer Mr. Knott’s meal at noon and 7 p.m. But Watt never sees Knott at mealtime because Knott never shows up at exactly noon or 7 p.m., and always finishes the meal before Watt returns in an hour. Knott functions as an absence in *Watt* because he operates between the hours, or outside the clock. Watt, by his nature, reads the lack of Knott as a positive sign of efficiency. He programmatically outlines all scenarios that could result in the “great saving of labour” at mealtime.

¹¹⁷ Ibid.

Twelve possibilities occurred to Watt, in this connexion:

1. Mr. Knott was responsible for the arrangement, and knew that he was responsible for the arrangement, and knew that such an arrangement existed, and was content. [...]

12. Mr. Knott was not responsible for the arrangement, but knew that he was responsible for the arrangement, but did not know that any such arrangement existed, and was content.

Other possibilities occurred to Watt, in this connexion, but he put them aside, and quite out of his mind, as unworthy of serious consideration, for the time being. The time would come, perhaps, when they would be worthy of serious consideration, and then, if he could, he would summon them to his mind, and consider them seriously. But for the moment they did not seem worthy of serious consideration, so he put them quite out of his mind, and forgot them.¹¹⁸

But the agency Knott enjoys throughout the novel (e.g., his being “content” in every possible scenario) cannot ultimately be explained with logic. By never being present, Knott insists on the impossibility of being perfectly conveyed into a determinate system.

Knott’s mention of “the dog,” who is to be given whatever food Knott does not eat during a given meal, sends Watt into an extended spasm¹¹⁹ as he wonders where this dog is to be found. This dog stands for the excess that is paradoxically created by the household’s efficiency. For Watt, who here embodies the figure of technological modernity, the operative problem is ensuring that the dog and the food are brought together “without loss of time.”¹²⁰ The issue of representation becomes for Watt a matter of the dog’s *presentation*.¹²¹ Finally his solution is to suppose that “the dog” is one of a kennel of famished dogs overseen by a family living on Knott’s estate being paid to bring the dog to the meal. This virtually guarantees that there will always be a living dog, a hungry dog, and a living human who is able to bring the dog before the hour is up. Watt’s reasoning seems as airtight as computer code in its accounting for all possible contingencies.

Yet an act of creation occurs between Watt and Knott, the determinate (what) and the indeterminate (not), which passes nearly unseen through the syntax. Following a deliberate line break, Watt’s process of elimination results in the invention of *new* bodies out of nothing.

“The name of this fortunate family was Lynch, and at the moment of Watt’s entering Mr. Knott’s service, this family of Lynch was made up as follows.”¹²²

With this clear declaration, Beckett has arbitrarily named the family into existence, and reversed Watt’s long line of questioning into the solution that had always been present. The Lynch family was never Watt’s idea; it already existed in this world. This has created a movement independent of the linear progression of words. We are thrown from

¹¹⁸ Samuel Beckett, *Watt* (New York: Grove Press, 2009), 71-72.

¹¹⁹ *Ibid.*, 72-78.

¹²⁰ *Ibid.*, 74.

¹²¹ Referring back to Paul Virilio’s description of the temporality of electronic media.

¹²² *Watt*, 81.

Watt's mode of syntactical reasoning back to a state of perceiving the novel written anew.

The Lynch family's weightless move out of Watt's head into the diegesis of the novel, and the shift in emphasis from the family's visible absence to Beckett's invisible presence, shows that such slippages easily occur in otherwise continuous streams of language. In an essay on Chiaki Kawamata's 1984 novel *Death Sentences*,¹²³ Thomas Lamarre describes a "figural force" that "comes prior to words and images, arising in their interactions and in the gaps between them."¹²⁴ He calls this a "vortex," but stresses that it exists *prior* to being named.

Deleuze admits that speech itself can stutter:

It is a stuttering, with every position of *a* or *the* constituting a zone of vibration. Language trembles from head to toe. This is the principle of a poetic comprehension of language itself: it is as if the language were stretched along an abstract and infinitely varied line.¹²⁵

In the example from *Watt*, a form suddenly appears among the sequence of words that is separate from their signifying order. A change is apparent before and after Beckett names the Lynch family. But we feel unstable as we try to locate this shift around the line break (a textual and visual absence). It is the same slippage that occurs when we stare at a solid object and its lines seem to waver,¹²⁶ which may be why "the vortex looks like autism" to the uninitiated.¹²⁷ What seemed like a straight line of prose "turns out in retrospect to have been curving all along."¹²⁸

...

Saying is not always *doing*. But saying does not have to *be* doing if it is already *doing something else*. The saying, "What's done is done," means an interruption has already happened. What I earlier called the "given significations of computational space" do not necessitate an interruption, because they are actively causing it. Vibration is propagated by those vagaries of signification that point to a generative absence, "something" which is only revealed after the signification is made. Thus the computer was forming my response before I recognized this to be an interruption.

The computer's capacity to create a space is powerful not for the particularity of that space, or the figure that virtually inhabits that space, but for the opening that is created when I attempt to understand how I can and cannot come to be that figure. This shimmering figure returns me to the physical surface of the screen, as much a barrier as it

¹²³ Originally titled *Genshi-gari* (Hunting the magic poems), Kawamata's thriller follows a series of surrealist poems, unwittingly distributed by André Breton, that kill their readers by ripping their minds into another dimension. Lamarre argues that the novel itself is written to embody some of the space- and time-bending effects attributed to the poems, calling this "vortical time."

¹²⁴ "Vortex Time," in Chiaki Kawamata, *Death Sentences*, trans. Thomas Lamarre and Kazuko Y. Behrens (Minneapolis, MN: The University of Minnesota Press, 2012), 243, 248.

¹²⁵ "He Stuttered," 109.

¹²⁶ For example, the more one stares at this box , the more one must question that it is a box.

1) Its edges are not edges, but lines of varying thickness; 2) It does not hold anything.

¹²⁷ "Vortex Time," 258.

¹²⁸ *Ibid.*, 245.

is a point of entry, where the body is always flickering. “The figure is the lover at work,” writes Roland Barthes.¹²⁹ For him the figure is a fragment of discourse—not a finished thought, but a gesture, a mark of affect, a reach that has no particular influence. It is necessarily incomplete because it is directed toward *the other half*, which is absent. “Each figure explodes, vibrates in and of itself like a sound severed from any tune,”¹³⁰ in the effort to articulate that someone, or something, into present company.

This does seem like work, rather than play. It is work that is resolutely nonproductive, and so promises no returns; it is nothing so orderly as an exchange. The work is a confusion; it is a working toward *nothing* in particular and a backing away from *something*. This is felt when staring, sometimes at the screen, and finding that even blankness is soon unsettled by silence. The body starts to worry that something is wrong. It’s nothing, it thinks, until it agrees that it could be something. This is something it will never fully admit. So it is working around the possibility that this something is real. And as it works on something else, it forgets what it was agreeing to. So the work is to come to nothing. Then why keep making more, more?

¹²⁹ Roland Barthes, *A Lover’s Discourse*, trans. Richard Howard (New York: Hill and Wang, 1978), 4.

¹³⁰ *Ibid.*, 6.

ILLUSTRATIONS

15. Author
16. Author
24. http://doom.wikia.com/wiki/Doom_64_TC
24. [http://doom.wikia.com/wiki/E3M3:_Pandemonium_\(Doom\)](http://doom.wikia.com/wiki/E3M3:_Pandemonium_(Doom))
25. Author
26. Author
32. <http://oyster.ignimgs.com/mediawiki/apis.ign.com/the-walking-dead-game/thumb/9/9a/03.png/460px-03.png>
39. Author
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42. Author
44. Author
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We know we are very special. Yet we keep trying to find out in what way: not this way, not that way, then what way?

Lydia Davis, "Special"