Material-Digital Resistance:

Toward a Tactics of Visibility

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Abstract   Material Digital Resistance: Toward a Tactics of Visibility

This research considers the ways in which digital, networked technologies influence contemporary everyday life and creative practice. Through studio practice and writing, I ask how a contemporary condition of everyday life, characterised by the suppression of distance in speed of communication and the ubiquitous presence of surveillant apparatuses, affects the way we understand and use the image. I also consider the role of the digital image in both destabilizing and reinforcing human agency.

In the past, tactical creativity was protected by a level of invisibility from the vision of authority, as described by Michel de Certeau. With the the spread of networked technologies, that invisibility is no longer possible. I take Vilem Flusser's methodology of 'playing against the camera'—a recipe for overcoming of the functionalist relationship between human and image technology—as a possible model for establishing my own and identifying other artists' practices as tactics of visibility.

I seek to develop a material consciousness of the digital image based on ontologies that assert the materiality of its processes and effects. In studio work, I blend manual and digital techniques for image-making in order to expose the structure of the digital image. I attempt the work of the apparatus outside the apparatus, by performing digital processes by hand, creating a model of difference and refining a physical sense of the disparity between human and computer scales through the reassertion of the body in a process of making. Using Kendall Walton's notio of photographic transparency, I make an argument for the affective potency of the 'poor image', evidenced in artwork and mass media, as inseparable from its materiality. I fictionalize aspects of this transparency, depicting an impossible reality and allowing me to model present anxieties stemming from the rise of digital image production.

I find that transparency and the instantaneity of the digital network are responsible in part for the obfuscation of digital materiality, as well as a confused sense of spatial relationships and personal interconnection. Image quality is politicized by connotations of credibility or agenda as it bends to the need for ever-faster communications. Though certain characteristics of the digital image encourage or sustain an ignorance with regard to its materiality, these characteristics can also be exploited to foreground materiality in art practice that aligns itself with the spirit and purpose, if not the invisibility, of de Certeau's tactics, and the critical methods of resistance to a programme of technology suggested by Flusser.

Contents

Author's Declaration

During the period of registered study in which this thesis was prepared the author has not been registered for any other academic award or qualification.

The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.

Signature_____ Date_____

Acknowledgements

Fig. i-1 An image of a former home as it appears in Google Street View

Introduction

 The first time I used Google Earth I was amazed, naturally, that my own home was visible in such detail. The places I worked and shopped and visited were there for me to see as if from a low flying aircraft. The suburban streets splayed neatly in an expanse of well watered green, their edges rhythmically dotted with houses I knew but did not recognize. I couldn't help asking, 'What is it actually *for*?' Daydreaming may not have been the answer to my question, but it was certainly what distracted me from that line of wondering, as I played with the application, puzzling over new visions of places where I had lived.

Looking back, that naïve question so immediate to my encounter with Google Earth is quite telling. Why would I not accept that such a thing should exist for the sheer enjoyment of its use? Possibly because I had an inkling that a lot of money and time had to have gone into the kind of technological infrastructure that would allow such a thing to exist. Google's own mission statement frames it in a benign enough manner: 'Google's mission is to organize the world's information and make it universally accessible and useful'.[1] A brief statement, but a mammoth task. If Google Earth is a part of this, does that make my daydreams a side effect of the scramble for information?

Like many novel forms that came before it, the form of image that constitutes Google Earth incites the imagination and through fear or wonder must influence the worldview of its users. The view from above conveys the aesthetically idealized continuity of a world bathed in sunshine. It also suggests a perspective of privilege, confirming suspicions of an increasingly surveilled world. From this point of view, the image of home conveys not the familiarity of hearth and garden, but the omniscience of an other who is not God.

While this default viewing perspective suggests otherworldly omniscience, the street level view is abruptly familiar. The viewer arrives at this equally sunny street level from the default overhead view by zooming-in beyond the point of clear resolution. The blurred projection suddenly pivots and shifts to reveal the horizon and an illusionistic three-dimensional space constructed from fifteen photographic images taken from cameras mounted on top of a passing car[2]. What is remarkable to me in viewing the result is the domestication of the surveillance, the proximity of that camera to what is near and dear implied not by the crispness of the image, but in the closeness of its content. Impersonal enough scenery to the driver of the

1   "Company – Google," accessed September 16, 2012, http://www.google.com/about/company/
2   "Street View – Google Maps," accessed September 16, 2012, http://www.google.com/help/maps/streetview/index.html

Street View car, pictured details are compellingly narrative to me as a viewer of an image of a former home (Fig. i-1). Details that suggest the closeness of the voyeur act as *punctum*—in the sense of Barthes's usage of the term[3]—for example, the patch of rust on the neighbour's roof she always meant to have repaired.

These images from above and below are not so new in their generalized appearance—satellite imagery is more than half a century old, while aerial photography actually predates the airplane—but in their exhaustion of the mundane suggested by the closeness described above, and their pervasive availability to the public on any number of networked platforms. The context in which these images are viewed is as defining of our relation to them as their objective subject matter. The baroque church ceiling fresco was not just a painting of the heavens opening before the eyes of the faithful, but a portal that existed only within the architectural confines of the church itself. Could it be less important today that the context of this variously manipulable and extensive view of the earth in its waxing entirety is available in the public domain via a vast and powerful private commercial infrastructure?

In a general sense, my research is concerned with the cost of progress: what do we give in exchange for the speed and convenience of contemporary communication and information technology? It is certainly more than simply monetary. The sneaking suspicions referred to above lead me to wonder how this exchange might affect human agency, despite the palliative reassurances of a contemporary rhetoric of transparency.[4]

This line of questioning relates to anxieties over the acceleration of the speed of travel and communication incited in the 19th and early 20th centuries by the advent of railway, telegraph, airplane and telephone—not to mention the heavily entangled military implications of all of these and more. What is different, or novel to our time, is a disorienting change that is not only dromoscopic, a term coined by Paul Virilio in relation to the shortening of distances by speed[5], but effects a creeping erasure of the value of the body[6] in the suppression of distances by the seeming instantaneity of the networked condition, the pseudo haptic nature of the devices through which individuals are networked, and the pervasive continuity with which that network persists.

In the context of fine art research, I narrow the question to certain effects of these technological changes. Specifically, how do the suppression of physical distance and the ubiquity of surveillance, perpetuated and framed by changes in everyday, networked technologies, work together to influence our ways of looking at, using, and understanding the image? What is the role of the image in destabilizing and reinforcing human agency? In order to respond to these questions, this practice-led research enacts speculation, reflection, and creative production in the forms of artwork and writing. In this introductory chapter, I present the theoretical context of this research, the methodologies and methods that context helped to shape, and a guide for the chapters that follow.

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3   Roland Barthes, Camera Lucida (London: Vintage, 1980), 26-27. Roland Barthes uses punctum to describe a punctuating visual element in a photograph, often a detail that occurs unintentionally, and 'which pricks me (but also bruises me, is poignant to me)'.
4   Kathy Marmor, "Bird Watching: An Introduction to Amateur Satellite Spotting," *Leonardo* 41 (4) (2008): 317. "the old equation of technology equals power and control has been supplanted by a rhetoric that extols the democratization of technology and global transparency."
5   Paul Virilio, "Dromoscopy, or the Ecstasy of Enormities," *Wide Angle* 20(3) (1998): 11-22. Virilio describes dromoscopy as the cinematic vision through the windshield of a speeding car. It is a disorienting vision, as it reflects the compression of space and time in accelerated forms of travel: 'The irresistible attraction of the route dissolves with the fixity of objects, the time of travel, the distance-time. The cognitive distance of space certainly subsists somewhere, but it tends to become a memory, the commemoration of ancient paths of faintly recalled journeys. The other end of the countryside is closer and closer but the consistency of places has disappeared in the aesthetic of rapidity, an optical phenomena.'
6   Vilem Flusser, *Into the Universe of Technical Images* (Minneapolis: University of Minnesota Press, 1985), 131. In achieving the universe of technical images, Flusser sees our bodies will be no more than 'spoilsports' that must be 'pushed to the margin of view, behind the back of the player staring at the screen, because they cannot be completely eliminated'.

The Faith of Birds

'when we examine a nest, we place ourselves at the origin of confidence in the world'[7]

The nest is first and foremost an image of home, bringing with it all its dearness and sympathies, anxieties and fears. Connotations abounding, it is the starting point for an understanding of a certain kind of vulnerability. As I explore some parallels between aspects of human and avian conditions, I hope also to enable some meaning in what might otherwise remain a visual phenomenon, the tangled, jagged vectors of blue representing my geospatial positioning over time (Fig. i-2). The above quote from Bachelard suggests the state of mind of a bird as one of faith. It is a faith that sustains the creature in the work of living, against or for lack of any reason or knowledge. I am interested in how this faith expresses itself in human production. Bachelard shows his reader the similarities in nest and human home; however, I would like to expand this comparison to a behaviour of networked production that has evolved in everyday human life in the past decade. The images that initiated and sustain this line of pondering are drawn from my fine art research practice. I shall attempt to describe the forms they suggest to me, first a nest as the image of return, second, the nest as material expression of a kind of vulnerability. The intention behind these descriptions is first to propose what I call *the fiction of the nest* as a state of being in the contemporary networked everyday and second to open a space for investigating means of negotiating some troubling aspects of this condition.

Manifested in the form of the nest itself, the acts of returning suggest a similitude between its method of creation and its primary purpose as a place for returning to build, to feed, to sleep. There is no kit for a nest, no shopping list. Materials present themselves as suitable, are collected and tested by their inclusion in the project. A nest is necessarily built over time, impatiently, anxiously, and toward a desire that is not always understood—one that cannot be verbalized by the feathery builder, but is rendered through the process of the build, and refined in shape by the impression of the sleeping body. The nest is the accumulated effect of the desire to return and to shelter.

In places of comfort, however, there may be danger. The nest is not conceived as a fortress. The faith of the bird in the success of its architectural pursuits is matched by the boldness of its song in the face of a world of predators. Optimism, however, is no shield. The nest is constructed primarily to shelter and to nurture. Its construction does not do away with the danger, but *compromises* with danger. The nest cannot elude the potential for catastrophe; it can only negotiate with it. It can be built high in a tree, hidden behind the leaves, anchored into sturdy arbour eaves. However removed and concealed, the height that sustains it is a trade on the potential of a fall. The higher the nest, the more potentially perilous that fall. The nest is thusly situated in compromise with one sort of vulnerability or another.
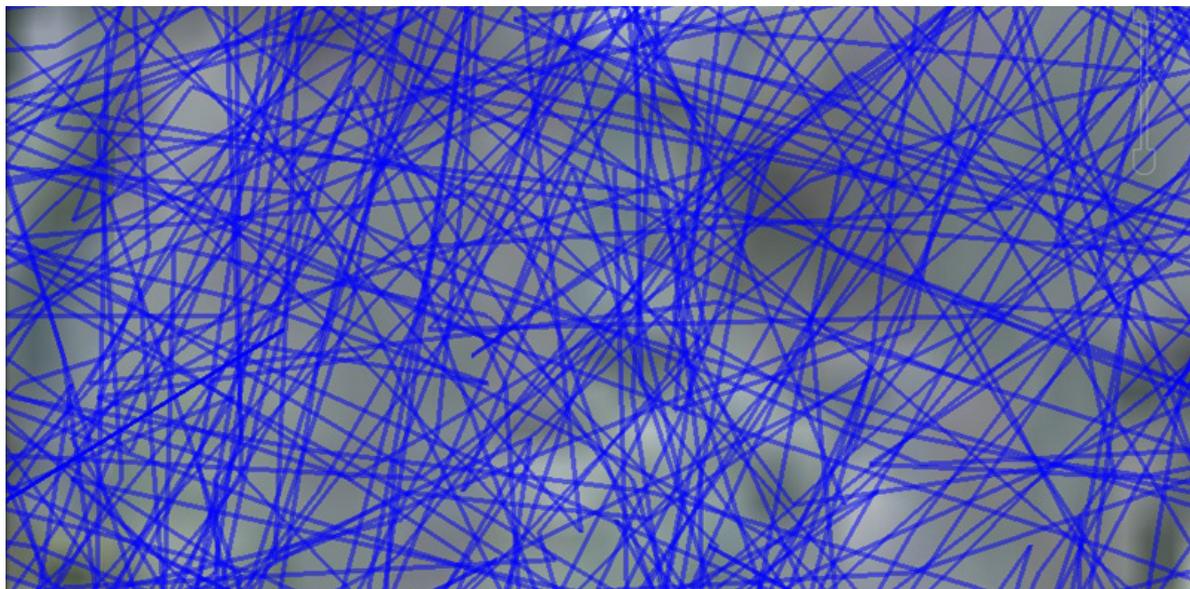

Figure i-2 Accumulated GPS tracks

7   Gaston Bachelard, *The Poetics of Space* (Boston: Beacon Press, 1994), 103.

In observing the images of my own coming and going, there emerges a different sort of this familiar form. Against the concrete slab foundation of the city the enunciation of my feet is lost to the ether; but with the touch of a key, the digital trace of that movement describes on the screen the image of a nest (Fig. i-3). The pattern of entries and exits depict its perimeters, punctuated by the burst patterns articulating lived, familiar place: home. By the repeated action of daily return, and with the help of networked data visualization, I too build a nest.

What I add to this nest, to the clusters of pixelated blue lines that constitute its floor and walls, are the multiplicitous other interactions I have with the same technology that traces my steps. Media distractions consumed, messages sent, ideas tried on for size, purchases made, all at the tap of the same key, all for the use of the network that enabled them to reach me. *I agree. I agree. To proceed. I agree.* There is too much to read and it is far too boring. It is the expression of my most bird-like confidence. It is my impatient concession to the fiction of the nest, to what Bachelard calls 'a sort of paradox of sensibility. A nest… is a precarious thing, and yet it sets us to *daydreaming of security*'.[8] *I agree.*

What is it about the digital network that is so different from what came before it? In asking this question, it becomes clearer what vulnerability I negotiate in the composition of my networked nest. It is true that people have long built their nests in connection to one another, resting on communal systems of support. As a bird would trust a tree, they place their faith in the resilience of community. Human faith takes form in social contracts. Some are civic, written, legislated. Others are more or less tacitly manifested in etiquette and custom. The former are expected to harmonize with the latter, so the rule of community should coincide with its values. Members of the community sleep well in this belief. For better or worse, the submission of one's preferences through the act of purchasing is not new with the advent of personal networked devices; however, the 'I agree' does embody a new sort of social contract.[9] To be clear, I do not mean the electronic contract to which the individual 'agrees' by clicking an online 'button'. I mean a quieter, more insidious, subtextual contract where those writing the electronic contracts are aware that no one is reading their handiwork, and the uninterested, agreeing subject trusts no harm will come of it. [10]
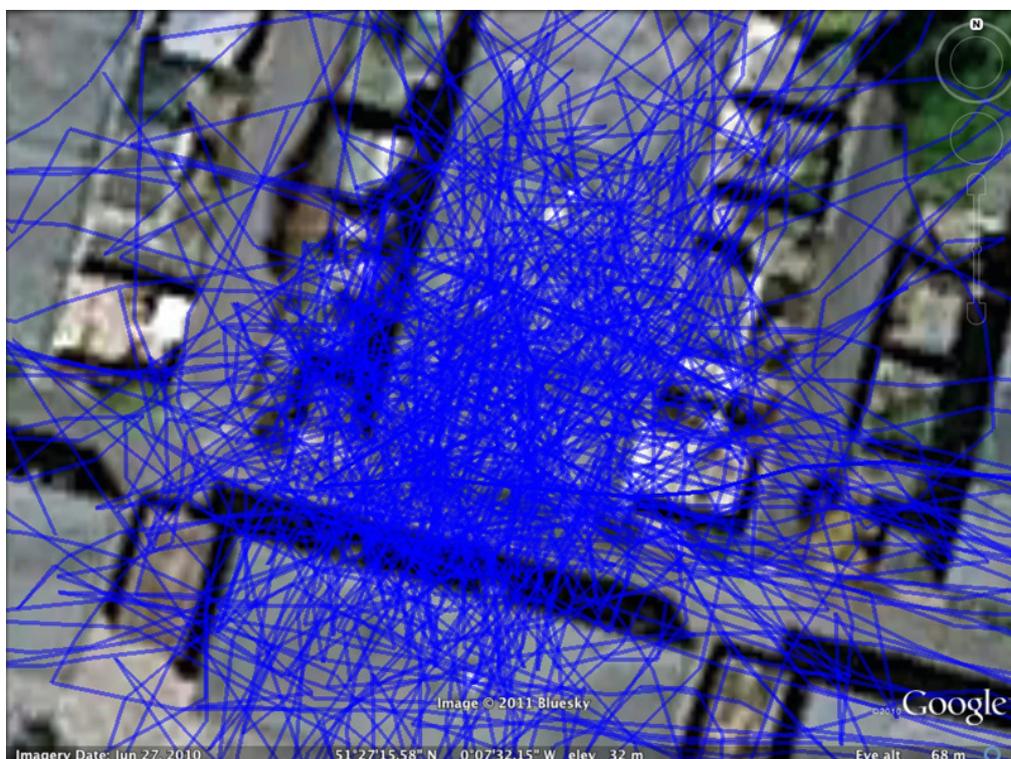
Figure i-3 Accumulated GPS tracks

8   Bachelard, *The Poetics of Space*, 102.
9   Mark Poster, "Consumption and Digital Commodities in the Everyday," *Cultural Studies*, 18 (2-3) (2004): 409. Poster writes in reference to the power of print and television advertisement, "The purchase itself is no mere acquisition but a submission… of one's preferences."
10   J. Colberg "Little Brethren," *European Photography*, 32 (2) (2011): 72-73.

An old account of the navigation of established power relationships in everyday life highlights ways in which the contemporary networked condition diverges from conditions of the past in its effects on human agency. In *The Practice of Everyday Life*, Michel de Certeau describes the city as planned program of living beings, embodying the discursive strategic relationship between government and the governed. Within this projection of visible power and control, individuals work in resistance, in spite of or peripherally to that projection, 'The ordinary practitioners of the city live… below the thresholds at which visibility begins… They are walkers… whose bodies follow the thicks and thins of an urban text they write without being able to read it'.[11] Because they manipulate circumstances in ways the program of authority did not anticipate, their production is invisible to it. But their freedom to do so is dependent on the limits of surveillance. Is it possible to act invisibly within the network today? Perhaps not, as de Certeau's writing considers a very differently mediated reality than the present one.[12] William J. Mitchell points out that 'networked eyes' 'have transformed the formerly blind network into an almost incomprehensively vast, pervasive system for extracting visual information from the world and efficiently preserving it'.[13]

In *Into the Universe of Technical Images*, Vilem Flusser warns that a network of communication that functions in a discursive way between media bundles and individual consumer—as in the case of the 'I agree'— threatens to fundamentally undermine human agency.[14] Though he also envisions the possibility of 'threads that start to run…from one person to another, straight across the bundles of rays that bind images to people, dialogic threads that cross the horizontal, discursive media bundles', I question their potential for tactical creativity.[15] Can dialogical exchange in its present form actually facilitate individual human agency when the technology that drives the network itself is another black box,[16] when we can only reach one another by a path that passes through and contributes to the corporately or governmentally managed bundles, and when 'the very technologies that produce and distribute communications also provide a conduit for surveillance between peoples'?[17] At the present moment, I recognize a world where, as Flusser describes, 'dialogical nets support discursively bundled transmissions… the dialogic threads "spontaneously" strengthen and solidify discursive bundles'.[18] Web 2.0, the movement beyond web as reference tool to web as platform for the exchange of manipulable content, is decidedly more engaging for the user, but still comes with a dependence on platforms provided by private corporate entities that doubtless help themselves to our demographic leavings. It is so engaging that users repeatedly and disinterestedly wave their rights to personal privacy at the very least, and quite possibly much more than that.

With the progressive extension of images and imaging into all corners of everyday life, it is hard to imagine tactical creativity occurring today in the way de Certeau saw it roughly thirty-five years ago. To consider the question of human agency, then, instead of searching for examples of 'Cultural techniques that camouflage economic reproduction'[19], we might look for instances of creativity—including the work of art—that embed themselves in forms of cultural production that are *profoundly visible*.

11   Michel de Certeau, *The Practice of Everyday Life* (London: University of California Press, 1984), 93.
12   Poster, "Consumption,"414. Poster states, 'The difficulties with these categories [de Certeau's strategy and tactic] for the current discussion [of the role of media in consumption] is that they occlude the mediation of information machines'.
13   William J. Mitchell, "Networked Eyes," in *Sensorium*, ed. Caroline a. Jones, (Cambridge: MIT Press, 2006) 179.
14   Flusser, *Into the Universe*, 83. Flusser describes a fascistic model of communications that require media sent from one citizen to another to pass through a central media hub under the control of an authority.
15   Flusser, *Into the Universe*, 64.
16   Vilem Flusser, *Toward a Philosophy of Photography* (London: Reaktion Books, 1983), 73. Flusser writes, "Anyone who is involved with apparatuses is involved with black boxes where one is unable to see what they are up to."
17   Marmor, "Bird Watching," 319. In her research into remote sensing satellites, Marmor observes a system that mirrors the dynamics of Flusser's fascistically deployed media hub.
18   Flusser, *Into the Universe*, 81.
19   de Certeau, *The Practice of Everyday Life*, 29.

Toward a Tactics of Visibility

I conceive of Flusser's functionalist communications network as a particular amplification of the relationship of de Certeau's strategies and tactics; furthermore, I see the contemporary networked condition as an accelerated version of that functionalism. By aligning aspects of these conditions, I identify criteria of de Certeau's tactics in examples of creative resistance that still manage to operate in the heavily surveilled present, and find a guiding methodology for the research presented in this thesis.

Michel de Certeau describes the condition wherein the proper places of the city come into being through the strategic designation of authorities, e.g. streets, squares, parks. He contrasts place in this sense with space, what he describes as the production of the citizen's tactical navigation of the city—and everyday life— outside the expectations of authority, e.g. the walk to work that instead of staying to the paved pathways, transgresses a manicured green space, or cuts through a private retail space. In order for citizens to express agency within the system in a sustained way, their expression must assume a level of invisibility. Once a path starts to wear noticeably into the green, the authority might respond by placing a barrier to foot traffic, or alternatively, introduce a paved path in its place. Tactical production does not attempt the destruction of authority or its designations. Tactics are folded into strategies, as they take the latter's designations as a framework for production or performance. Likewise, strategic designations often arise from the appropriation of noticeable public behaviours.

Flusser's account of the functionalist relationship between co-dependent human and photographic apparatus describes the condition of the individual in thrall to technology. The human and the camera constitute a circular trap wherein the work and desire of the human informs and effects the improvement and promotion of the apparatus in its evermore dominant necessity in human communications. In this case, the strategic authority into which the individual is folded is not a governmental one, but a program of images.

Since photographs are publishable records of its user's actions, this functionalism poses a challenge to the invisibility of tactical creativity described by de Certeau. The move to digital technology, in its infinite and instantaneous reproducibility, accelerates this functionalism, compromising human freedom in a more encompassing way. The current program of images only effects a greater proliferation of images than its predecessors because it designates and maintains the innumerable conduits for copy and dissemination possible in the digital network. This program is successful, also, because it cannot be pinned down to a single individual or small body of participants. The program itself is as ubiquitous as culture, invisible in the growing crowd of end-users. As can be seen in the examples of the 'I agree', public surveillance cameras, and online social networking, the ease, economy, and even enjoyment of digital image-production ensure people are visible in all aspects of their daily lives. Individuals not only actively enfold themselves in the program, but having no recourse to invisibility, offer themselves for its consumption.

Both de Certeau and Flusser acknowledge opportunities with a system to employ methods of non-oppositional resistance, centring on invention, subversion, and the production of the unexpected. Tactics work within the system in ways it could not have anticipated, and which constitute a signification beyond the analysis of authorities. They assume invisibility by camouflaging the methods of their self-serving production, for example, 'la perruque'.[20] Playfully named as it translates to 'the wig', this subversive use of the resources of the employer for the personal use of the employee is exemplified in the narrative of a Jonny Cash song, 'One Piece at a Time', the proud account of an auto worker at a Cadillac plant who stashes spare parts from the assembly line over a period of two decades in order to build himself the car he otherwise could not afford.[21] The brilliance of the resulting car as tactical production is that, cobbled from parts produced over many years, it looks nothing like any other Cadillac that ever was.

In *Toward a Philosophy of Photography*, Flusser suggests that though most users of cameras are unaware and uninterested in the implications of their camera use for human freedom, some users, specifically experimental photographers, seek to resist the functionalist relationship, 'consciously attempting to produce

20   de Certeau, *The Practice of Everyday Life*, 28.
21   Wayne Kemp, *One Piece at a Time*, by Johnny Cash, 1976, by Columbia, 7" single.

unpredictable information, i.e. to release themselves from the camera, and to place within the image something that is not in its program'.[22] Flusser equates this 'playing against the camera' with the possibility for human freedom, but does not offer any specific examples of this beyond a brief list of methods: 'outwit the camera's rigidity', 'smuggle human intentions into its program', 'force the camera to produce the unpredictable, the improbable, the informative', and 'show contempt for the camera and its creations and turn one's interest away from the thing'.[23] These categories may be generalized and potentially ambiguous, but I see them as open for interpretation, and so provocative in the context of fine art research. Since Flusser himself suggested the value of his philosophy was its potential to be extended beyond photography specifically, I explore examples of these methodologies of resistance in the work of contemporary art that uses the photographic or technical image, but is not necessarily or strictly defined as photography. In conjunction with this, I employ my own 'playing against' in studio practice. By extending Flusser's methodology to the use of contemporary digital, networked apparatuses, I keep faith in art's potential to reveal a tactics of visibility, hoping for the restoration of some of the creativity and invention of de Certeau's tactics to the experience of everyday life in the early twenty-first century.

Methodology and Methods

Since beginning this research, my project and its guiding questions have gone through a number of changes, moments when new insights forced me to reconsider my understanding of the subject, and to reframe the project in light of questions of greater potential relevance. This is reflected in the methodology of this research, an aspect of this project that evolved rather than asserted itself from the start. In the most general sense, it is a reciprocal process of writing and making. A response to a question in the form of an artwork might reveal a new insight. In formalizing insights in written reflection, I may come to new questions that are again investigated through studio practice, and so on. It is not always so cut and dry as A, then B, then C. Sometimes writing and practice occur simultaneously. It is important, however, to understand the writing and the studio practice together as a pivoting engagement with research questions, one form challenging the other, one provoking a response from the next by reframing a particular object, image or gesture in order to change or produce meaning.

Within this general model of writing and practice, the tactical 'playing against' that is a central gesture of this research necessitates a degree of reflexive subjectivity. In order to 'play against the camera'—or any apparatus—the user must be aware of and have an intention to subvert the programme in which she and her production are situated. As a result of the importance of self-consciousness to this project, aspects of my approach are methodologically similar to autoethnography. As defined and demonstrated by Carolyn Ellis, autoethnography is 'writing about the personal and its relationship to culture. It is an autobiographical genre of writing and research that displays multiple levels of consciousness.'[24] Relevant to this project, autoethnography challenges the necessity of objectivity in research by allowing the 'I' of the researcher to also be a subject of that research. It acknowledges the value of 'saturating [one's] own observations with [one's] own subjectivity',[25] and permits a variety of narrative and analytical approaches within a single work of research writing.

This self-conscious approach is reflected in the self-surveillance and its material presentation that constitute much of the practical component of this thesis. Because aspects of my practice occupy both method and subject of this research, the written reflections, accounts, and speculations made along the way are as significant to the written component of the research as the contextualizing and analytical texts into which they were integrated toward the end of this process. This written component utilizes a number of writing styles and forms that take the author's personal perspective as central to the progression of the research.

22   Flusser, *Toward a Philosophy*, 81.
23   Flusser, *Toward a Philosophy*, 80.
24   Carolyn Ellis, *The Ethnographic 'I': A Methodological Novel About Autoethnography* (Walnut Creek: AltaMira Press, 2004), 37. Ellis demonstrates as well as defines and describes autoethnography through the form of an autoethnographic novel.
25   Ibid, 89.
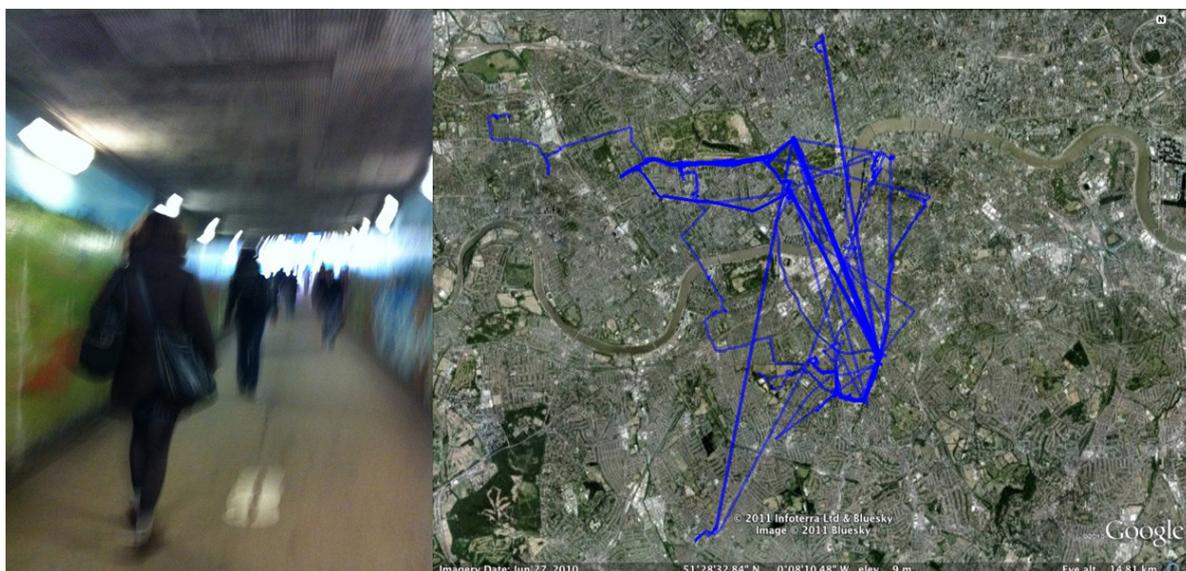
Figure i-4 iPhone photograph (left) and 6 weeks of GPS tracks from collection

These include the anecdote, stream of consciousness, the interaction of image and language, excerpts from reflective journaling, and fiction.

I will attempt to illustrate this methodology, including its influence on the particularity of forms of writing, by tracing the evolution of this project. Through the introduction of specific methods, I will demonstrate the ways I have addressed research questions through a combination of art practice and writing.

My initial research question was, 'How does a GPS-enabled, mobile, networked device affect the user's understanding of space?' I sought to reflect notable effects through a practice of image making. My first practical gesture in response to the question was to map my travels without the use of a networked device in diagrammatic-looking drawings and collages. I later began to collect photos and GPS tracks with my smartphone over two periods totalling ten weeks (Fig. i-4). In the studio, I attempted to represent my experience of space through prints and drawings utilizing the collection as source imagery (Figs. i-5, i-6, and i-7). The response to these works was to question what the things themselves do. Could they actually convey an experience, or were they merely the precipitate of a particular interaction with a device?

In some informal written reflection, as well as some stream-of-consciousness writing, I came to recognize important aspects of that interaction. I saw that the device was preventing me from engaging with the spaces I passed through. My experience had far less to do with the appearance of what was around me in the street than I had anticipated. I also came to appreciate the relatively large amount of data I collected as a sort of
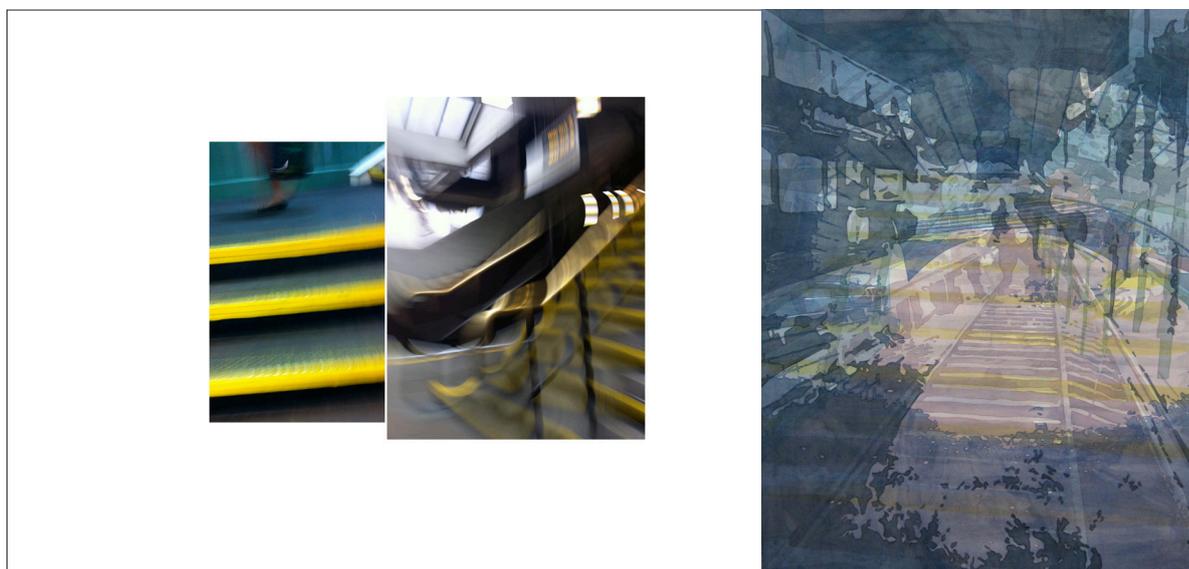
Figures i-5 and i-6 *Up the Stairs,* 2011, digital inkjet print, 33x48cm; *Tunneling*, 2011, gouache, graphite, 84x119cm
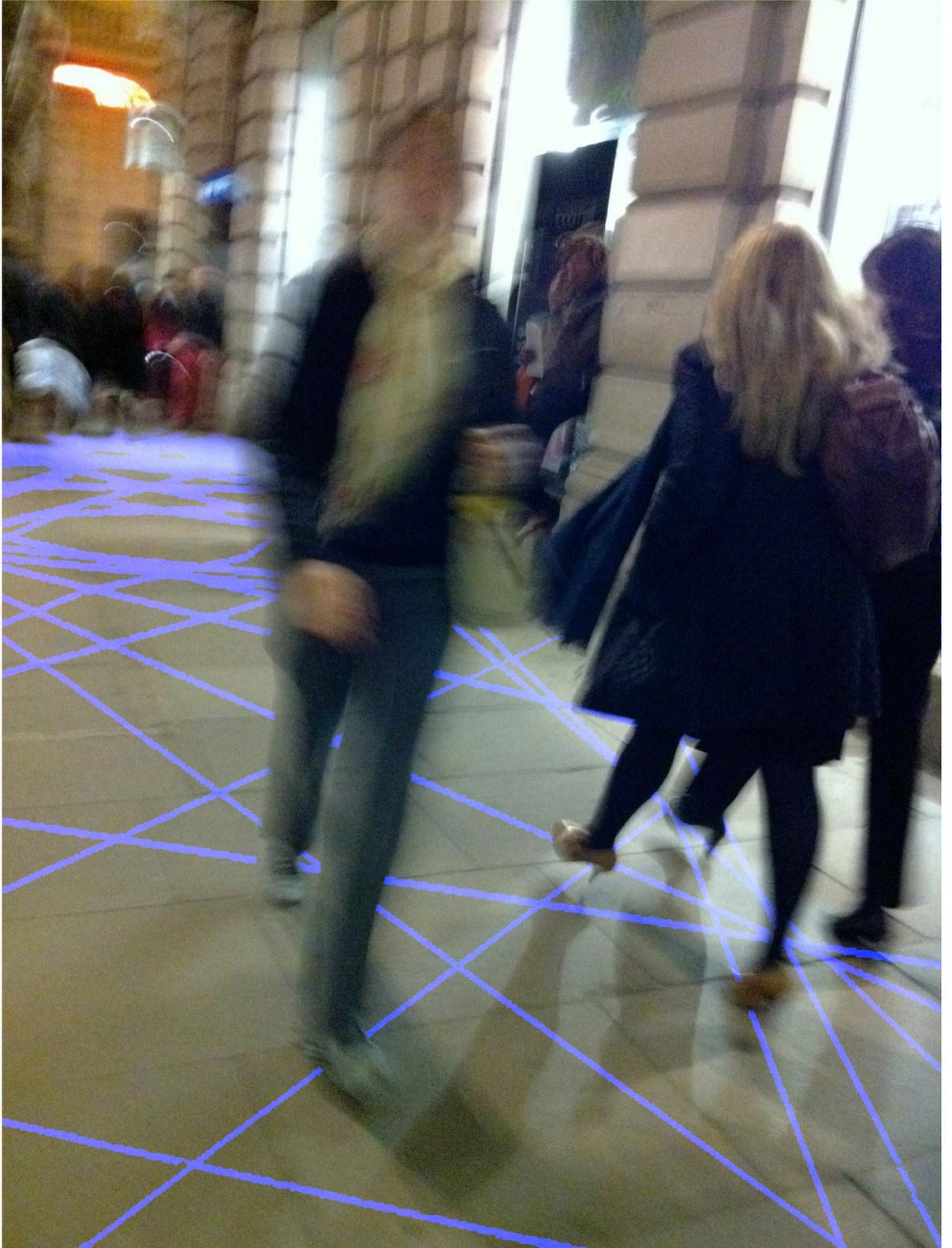
FIgure i-7 *Green Park, Again*, 2011, digital inkjet print, 23x31cm

Figure i-8 *Tracking Home*, 2011, inked woodblocks, 81x122cm each
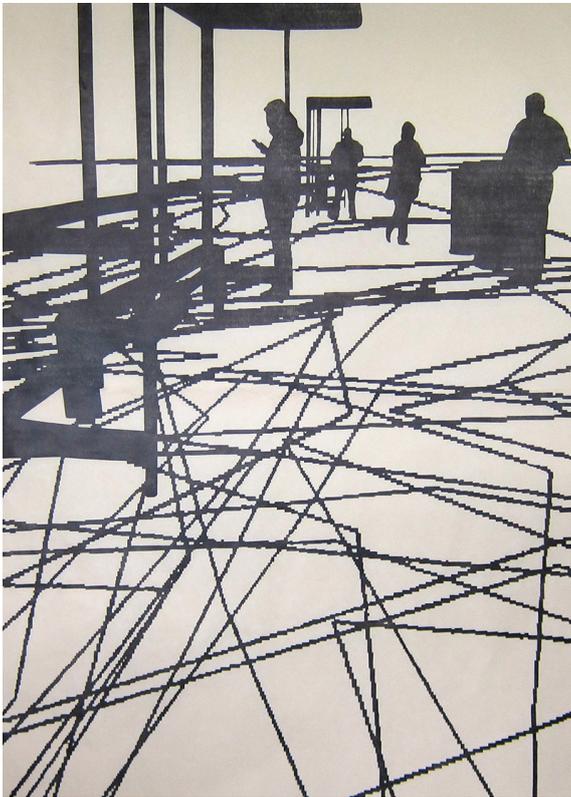
Figure i-9 *Two Steps*, 2012, woodblock prints, 122x172cm each

self-surveillance. I recognized parallels between my own use of digital technologies and the surveillance apparatuses I saw throughout the city, as their looping screens ticked out the rhythms of everyday life. I investigated these themes in practice in the woodblocks and prints *Tracking Home* and *Two Steps* (Figs. i-8 and i-9).

Hand carving digitized images for woodblock prints raised new questions that would ultimately change the project. One such question was, 'How does the material signature of an image affect its interpretation?' The *Diptrych* prints address this by juxtaposing digitally printed pixelation alongside a woodblock print cut at the same resolution (Fig i-10). The varying distances from which I viewed the image itself further interested me in the role of distance and scale in understanding the material make-up of an image.
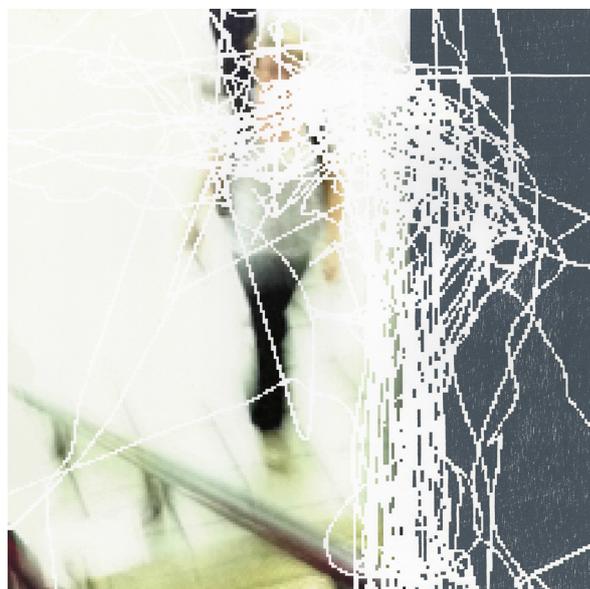
Figure i-10 *Diptrych II*, 2012, digital inkjet and woodblock print

At the same time, I produced the word and image exercises that later became the artist book, *The Fiction of the Nest*. This work, begun as a subjective exploration of my source images, addresses much the same concerns as the woodblocks, but by the use of personal narrative and poetic response to image. It reflects those multiple layers of consciousness referred to by Ellis in its combination of anecdote, theorization, and poetry to convey my experience and understanding of the images I collected. In finding a form for the juxtaposition of word and image that could go beyond the illustration of words or the explanation of images, I saw how I wanted writing and practice to interact within my research. I also began to see the relationship of surveillant images to the technological networks that support them.

I recognized that the project had greater scope if the question changed from focusing on a subjective experience of space and technology to the consideration of a sort of materiality that presents itself in the image. I wanted my inquiry to reflect the centrality of surveillance in an increasingly digital everyday experience. The new question that came from this was, 'How do the suppression of physical distance and the ubiquity of surveillance, perpetuated and framed by changes in everyday networked technologies, work together to influence our ways of looking at, using, and understanding the image?' In writing I formalized theoretical underpinnings of the project, including works by Michel de Certeau and Vilem Flusser on the practice of everyday life and technological functionalism, respectively. As a result, the second guiding question of my research became, 'What is the role of the image in destabilizing and reinforcing human agency?'

In the next works I made, I tried to foreground digital materiality and the surveillance it enables. In presenting the mediated vision of Google Street View in the *God's Eye* series, I wanted to show the constructed nature of digital representations in order to question their status as part of a program of images, and to implicate that program

Figure i-11 *God's Eye II*, 2013, digital inkjet print, 80x80cm

as one that watches over us, replacing the presumed omniscience of God with the perceived omniscience of global corporate entities in cooperation with military technologies (Fig. i-11).

In another attempt to foreground hidden aspects of digital materiality, I developed a process of hand-making the digital image by making crocheted textiles, incorporating a process of observation and coding into the manual reproduction of an image. While working on this project, I kept a short journal of my experience of 'becoming computer', which emphasized to me the resistances of the human body and mind to the work of computing. In further writing on this process, I recognized this hand digitization was better understood as a model of difference between the human and computer rather than as an imperfect imitation of computer processes. In response to this understanding, I developed this work into the installation, *Scribal Drift* (Fig. i-12), to speak of disparity in handmade reproductions as iterations as opposed to errors. This practice

Figure i-12 *Scribal Drift*, 2014, installation of handmade digital image-objects in crocheted yarn

further emphasized for me issues of distance between the mediated image and its referent. It also raised the issue of my own computer illiteracy, a condition that seemed to support the felt vulnerability noted in earlier writing.

I continued writing in order to clarify and formalize my still new conception of digital materiality and my relationship to the digital process of image making. I identified with certain ontologies of the digital and attempted to trace my own understanding of that materiality. In the process of this writing, which would become the first and second chapters of this thesis, I found I had further questions about the mediated image, and the potential transparency of the images encountered in everyday life. I saw that Kendall Walton's idea of photographic transparency might support my understanding of digital materiality, as well as account for the effects of the digital images on their users. From this came an interest in the relationship between affect and the 'poor image', as well as what it might mean to invert that transparency.

My final practical work for this project includes image-objects that enact or reveal some kind of resistance to their own transparency. In a number of digital inkjet prints, I attempted to address questions of what can and cannot be seen or seen through, as well as what can or cannot be digitally reproduced or represented. *An Image of Nothing* (Fig. i-13) is developed theoretically in my fourth chapter as a photographic image-object that resists the representation of its own referent, while the *White Screen* and *Sampled Screen* prints (Figs. i-14 and i-15) are physically reproducible image-objects—digital inkjet prints of a moiré image— that resist their own digital documentation.
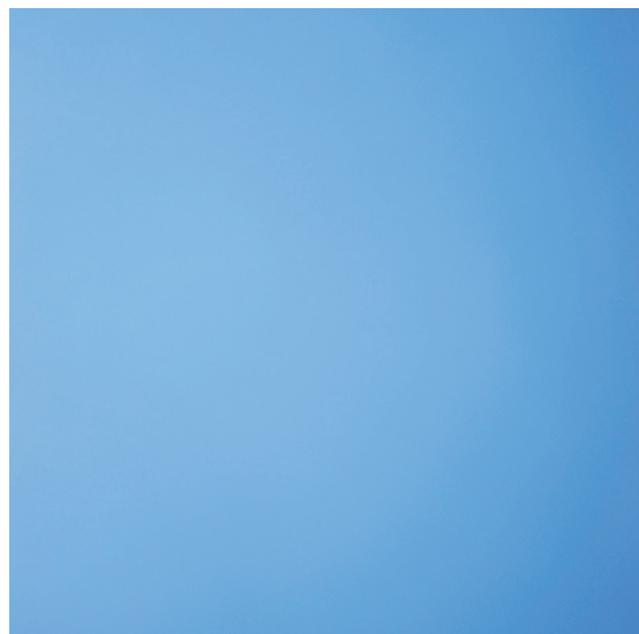
**Figure i-13** *An Image of Nothing*, 2014, digital inkjet print, 70x70cm
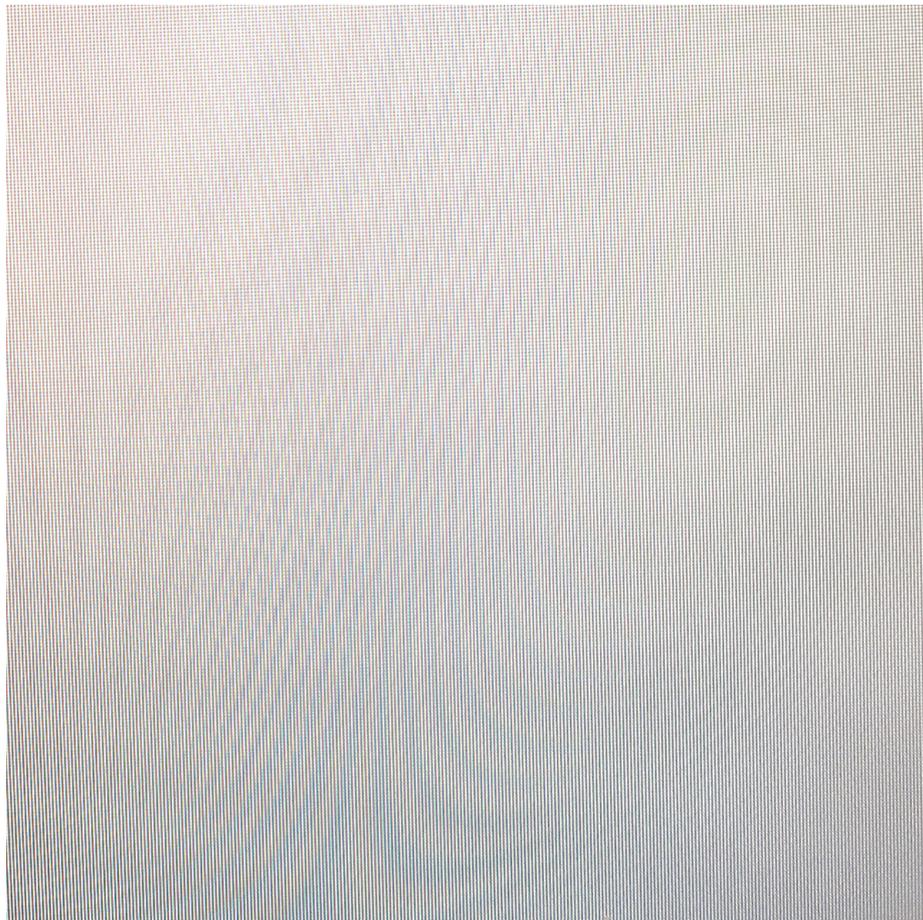
Figure i-14 *White Screen III*, 2014, digital inkjet print, 70x70cm
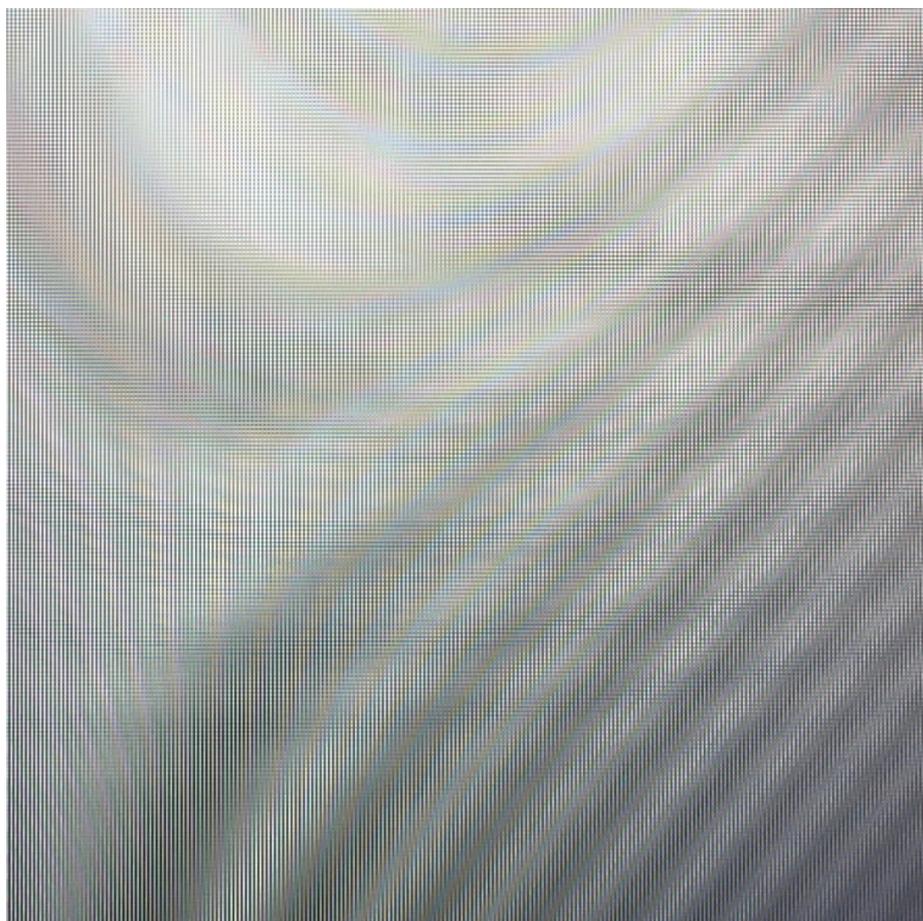
Figure i-15 *Sampled Source I,* 2014, digital inkjet print, 90x90cm

The last work made for this project is *Thanatophobia*, a moving image of clouds in the raking light of sunset, taken from the window of an airplane, and projected as a pixelated and awkwardly jerking giff loop (Fig. i-16). Here I consider the relationship between desire for or fear of the subject of the image, and the ultimate insufficiencies of the photographic technology to resolve either. I continued to wrestle with these works throughout the writing of this thesis, as is apparent in the passages that address them.

Figure i-16 Still from *Thanatophobia,* 2014, looped digital projection

In the chapters that follow, I develop insights initiated over the course of this project. These chapters, as well as the art practice they describe, take differing approaches in addressing my research questions. The forms of writing move from the analytical to the self-reflective to the creative and back, with the second and fourth chapters incorporating less traditional modes of research writing than the first and third. This writing mingles fiction and essay, journal and expository description, in the spirit of the autoethnographic methodology that blends voices and styles in resistance to the presumed importance of objectivity in research practice. In the context of this practice-led research project in fine art, this enabled me to treat the written component as part of my creative practice, as well as a contextualizing, analytical intercessor between the reader and a body of artwork.

In Chapter 1, I consider the invisibility of digital materiality. I claim that digital objects (files, applications, operating systems, etc.) are indeed material, describing the two intertwined ways I understand this materiality: one more literal meaning concerning the physical reality of computing and its material infrastructure, and another that acknowledges the embodied labour and networks of exchange that enable the use digital objects. I see in these objects particular characteristics that should be understood in order to take care in their use and production. As an argumentative essay, this writing identifies challenges to and support for the notion of digital materiality, and presents the interaction of these opposing positions as a territory ripe for research.

The biggest challenge to a common recognition of digital materiality is that the very characteristics that make them unique, often lead users away from material thinking. The tendency of digital objects toward reductive abstraction, their ease of manipulation, their existence at a temporospatial scale beyond human sensible appreciation, and their persistence once released into the Internet define these objects as much as obscure them from conscious consideration. In addition, digital objects have the popular imagination with which to contend. Notions of identicality between code and expression, as well assumptions of permanence, invade attitudes toward digital objects, assuming them to be instances of disembodied content.

I find support for digital materiality in the work of artists and scholars who test cultural expectations around

imaging technology, as well as in my own experience of practice-led fine art research. Johanna Drucker's digital ontology[26] and Hito Steyerl's call to participate in the material aspect of the image[27] challenge me to face the materiality of the digital image as a matter of urgency. I emphasize the role of art practice in recognizing digital materiality by tracing the evolution of my own material understanding through the early stages of this research. Alongside this, I present examples of artists whose works support my understanding of materiality by their use of common digital tools in ways unanticipated by programs of technological production, landing their visual practices in the category of the tactical.

The invisible scale of the digital, small and fast beyond human appreciation, is one of the referred-to obstacles to material understanding presented in Chapter 1. The inability to sense much of the work of digital processes leaves me to imagine rather than have any academic, let alone practiced or tacit, knowledge of them. In Chapter 2, I present my own technological illiteracy as motivation to develop other ways of knowing through art practice, to find a way to participate in the digital image in order to hopefully reveal how the biases of digital media might infiltrate how I understand and interpret images. This chapter utilizes a combination of forms for writing, including contextualization, journaling, reflexive analysis, and poetic translation in order to depict the alternating and iterative process of labour and reflection that constitutes this part of my research.

Beginning with a look at how Flusser's concept of functionalism expresses itself within the contemporary networked condition through the ramping, inhuman speed of the digital image, I discuss aspects of my artistic practice which attempt to get closer to digital processes by simplifying and scaling them up to the a human level of manageability. Accounts of earlier practice considering the material nature of the technical image, show the progression of this research, as well as elucidate the influence of printmaking on the development of my textile works. A description of the process of manual digitization employed in these textile works precedes a two-fold account of the experience of its undertaking and the development of a specific material consciousness.[28] I share working notes from a reflective journal alongside a post-labour consideration of the resistances encountered in this process. These resistances, and my responses to them, highlight disparities between embodied human labour and the work of the computer.

In Chapter 3, I consider further impediments to embodied understanding by exploring Kendall Walton's notion of photographic transparency, the condition of the photograph that puts the viewer in perceptual contact with its subject.[29] I argue for the potential of digital photographic images to be transparent in this way, finding support in the example of Hito Steyerl's 'poor image', as its value lies chiefly in the ease with which it enables and maintains contact as a digital, networked object, as opposed to the degree of its representational accuracy.[30]

The results of this contact do not end at the reduction of image quality. Digital materiality extends the affective potency of the photographic image at speeds previously impossible. Using examples from art practices and mass media, I demonstrate that 'poor images' are deployed and interpreted in ways that do value contact over accuracy, with affective manifestations ranging from sentimental desire for the subject of the image, to revulsion at being in perceptual contact with violence and suffering. As the demand for expedient contact takes precedence over the quality of images, putting people 'in touch' over vast stretches of space, there occurs a powerful and disorienting synchronization of emotion, as described by Paul Virilio.[31]

26   Johanna Drucker, 'Digital Ontologies: The Ideality of Form in/and Code Storage—or—Can Graphesis Challenge Mathesis?,' *Leonardo* 32(2) (2001): 141-145.

27   Hito Steyerl, *The Wicked of the Screen* (Berlin: Sternberg Press, 2011), 46-59.

28   Richard Sennett, The Craftsman (London: Penguin Books, 2009), 146. Sennett describes a material awareness as 'a consciousness sustaining work if not enriching the worker'.

29   Kendall Walton, "Transparent Pictures: On the Nature of Photographic Realism" *Critical Inquiry* 11(2) (1984): 246-277. Walton's photographic transparency refers to the viewer's ability to actually see the subject—and not its representation—in the photographic image.

30   Steyerl, *The Wicked of the Screen*, 41. Referring to digital images of low resolution, Steyerl states, 'Poor images are poor because they are heavily compressed and travel quickly. They lose matter and gain speed'.

31   Paul Virilio, *The Administration of Fear* (Los Angeles: Semiotext(e) 2012), 30-31. Virilio describes the rise of global affect and the shift from democracy of opinion to one of emotion. This will be discussed in more detail in Chapter 3.

Though digital transparency certainly contributes to this synchronization and subsequent loss of embodied senses of scale and connection to others, I suggest that an informed, materially aware, and potentially tactical use of the digital photographic image may mitigate such confusion. By acknowledging the role digital images can play in shaping the emotional experiences of disparate and numerous individuals, I attempt to show that digital materiality is as much involved in embodied instances of perception, and affect, as bits in silicon and fibre optic infrastructure.

In the fourth and final chapter, I address the reach of the digital image described in Chapter 3 through the development of an absurd impossibility: the inversion of photographic transparency. By interweaving a near-future, magical realist, short fiction with speculative, image-led musings on themes of transparency, visibility, surveillance and self-consumption, I imagine what such an inversion might look like in the context of the sort of technologically driven control society that already exists in western democracies. As the writing in this chapter pivots between fiction and reverie, it allows a concurrent imagined development of and reflection upon this idea.

Beginning as an essay on the relationship of an expansive image to the world it represents, there is an abrupt shift to a fictional account of what might happen if the transparency of photographs were suddenly inverted. The fictional narrative portion proposes an immediate and jolting advance in visual synchronization that in addition to collapsing space, collapses time: in the instant that a photograph is taken, the subject is confronted with the faces of each and every person who will ever view it. Photography becomes a literal violence, a terrifying prospect that fundamentally changes the human relationship to the image.

In the non-fiction portions of this chapter, I connect contemporary anxieties to this imagined catastrophe and present images from my studio practice as objects of contemplation in relationship to the afore-mentioned themes. By juxtaposing these forms, I am able to frame the anticipation of an impossible disaster as cause to re-evaluate current practices of image production and consumption.

There is a looming instability that plagues contemporary everyday life that is directly related to the human relationship to common image technologies. I envision a link between the felt vulnerability of a home of bricks and mortar and the potentially troublesome nature of the digital image as both mutable and informative, secondary material trace. For an artist who uses these types of images—and increasingly for the everyday user, as well—they constitute an inhabited space, and at times a dear one. But they can certainly not be private. For images to prove valuable, they have to be sent into the world where they are subject to permutation, subversion, appropriation and all other sorts of tactical transformation. Their very nature calls out for these things; though they are possibly less secure within the networked hard drive they inhabit than I am sitting at my kitchen table. I recognize my place in the program of image production as one node in the unending web of reuse and reconfiguration that leads to new forms and understanding. Research practice is a means for me to lasso a greater portion of that web for just long enough to enact my own reconfigurations before sending them (at best) to be made new again in the active encounters of others, the repercussions of which I cannot fully anticipate. It cannot alleviate the vulnerability that constitutes that web because it is part of the materiality of such a system. In order to find modes of practice for addressing concerns for human agency, I must then begin to understand the material of the system itself, an exploration of vulnerability that starts at the level of the bit in silicon.

Chapter One

Digital Consciousness

When I was a child there was a cardinal living in a line of trees at the back of my yard. He had the unfortunate habit of flying into our windows. We would hear a great 'Bonk!' and, turning to the living room window, see him fly dizzily away, the oily outlines of his feathers still faintly articulated on the glass pane. This happened many times over the course of a summer before, I suspect, it eventually killed him.

Cai Guo-Qiang's *Transparent Monument*, installed on the roof garden at the Metropolitan Museum of Art in New York in 2006, depicted something akin to this phenomenon: a large pane of glass with the bodies of dead birds at its base (Fig. 2-1). The implication was that birds, fooled by the transparency of the glass, flew helplessly to their deaths. The danger of transparency.

Seeing this work, I thought of my cardinal, the sadness of unwitting and daily self-injury that made his life. I am sure I was not the only visitor to the roof garden who thought of some unlucky bird from her past. The work relies on the commonness of bird collisions. Upon reflection years later, I ask myself if it might be a false equivalent to my own bird story. In Cai's work, the danger is the transparency of the glass, a free standing pane, untethered to any architectural purpose, cutting a small rectangular slice in an enormous expanse of sky. It is not truly transparent, but translucent, with the slightly darkening, green hue of tempered glass of a particular thickness. At least, that is how it appears to my human eyes.

Figure 1-1 Cai Guo-Qiang's *Transparent Monument* (2006) installed on the roof garden at the Metropolitan Museum of Art

I remember that cardinal who so often crashed into our window exhibiting a similar behaviour with the side view mirrors of a neighbour's van. He eventually shattered one of these, probably doing himself a little extra hurt that day. It makes me think this bird had no intention of entering that van or our house. He was not looking through a transparent pane of glass into an interior space, but caught, I believe, the reflection of the sky in our window and endeavoured to fly into that. What a strange spatial experience! To be outside, in flight, in the sky, to see a patch of sky in the side of a wall, to fly toward the perceived opening and then to be flattened against it. And never to understand the effect, never to register the notion of reflection, so that the unhappy exercise persists almost daily.

An estimated 90,000 birds die every year in New York City due to collisions with glass-sided buildings. In some cases the birds really do see sky through a second window, but perhaps more likely, they see the sky or trees reflected in the glass. Researchers seem to find a greater number of collisions where the glass facades reflect trees as opposed to just other buildings. Of particular concern in recent years is the Highline Park, an elevated green space that attracts songbirds, but is flanked by tall buildings with reflective exteriors. [32]

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32   James Barron, "Bird Week: The Lure and Danger of the Highline," *New York Times*, May 6, 2011, accessed September 10, 2014, http://m.npr.org/story/157792377

When I look at a glass façade, I notice it is not completely reflective. These buildings have seams that help me to see them. I actually *see* the building in the vertical and horizontal lines that cross its surface. The recognition of structure alerts me to the presence of illusion. Using this rationale, efforts are being made in industrial design to make window glass as apparent to birds as it is to me. Line patterns reflecting ultra-violet light are embedded into panes of glass, revealing to the birds the presence of the glass as object, but remaining nearly invisible to the human eye.[33]

It is safe to say reflection and transparency are distinct qualities of a single material, even qualities which are not always simultaneously observable; however, the image that appears within the window frame, whether a trick of transparency or reflection, if not given away by some knowledge of its structure, remains a potentially dangerous illusion.

I am unlikely to fly headfirst into a building, but my willingness to rely upon the images I encounter in my every day life may well introduce me to peril of another sort. It strikes me, in the case of the birds, that the ability to recognize the glass's presence is a way to avoid such peril. In my case, this recognition of illusion depends on an understanding of its material. With regard to everyday images before my eyes—digital expressions of whim, novelty, catharsis, consumption, surveillance, and the mundane—I feel exhausted, overwhelmed, but helpless to turn off the devices that bring them to me lest I forfeit the connectivity that is today a social expectation. If I cannot avoid contact with them, then I would like to at least have a better understanding of their material constitution so that I might avoid collisions of my own.

In this essay, I attempt to articulate an understanding of digital materiality and describe some of its implications for users of digital image-objects. Beginning with what constitutes 'the digital', I look at two ways of understanding materiality, one a more literal interpretation, and the other a reflection on the histories and potentials of an image-object within a network of reproduction and dissemination. Out of this attempt to describe digital materiality comes the recognition of the tendency of digital objects to obscure aspects of their own materiality. I investigate some possible causes, including historical, cultural and technical aspects of and attitudes toward networked digital objects. In presenting examples from my own and other relevant art practices, I suggest that a particular engagement with digital images involving their re-presentation can constitute a tactical approach to image use and production that fits within the 'playing against' methodology of this project.

From spiritual vision to invisible labour

On the ceiling of the Church of St. Ignatius in Rome, Andrea Pozzo painted *The Apotheosis of St. Ignatius*, representing the moment when Ignatius is welcomed into heaven and transformed into a saint (Fig. 1-2). In life, Ignatius was a soldier before a religious man. Having shattered a leg in battle, he experienced a series of visions that led him to convert to a religious life, and to found an order of priests, the Jesuits, dedicated to the conversion of non-believers. Ignatius's story, in addition to his life's work, served the Roman Catholic Church well in its power to evangelize and invigorate the faithful during a time of political instability caused by the Reformation. When the pope formed the association for the propaganda of the Catholic faith, Jesuit artists, including Pozzo, employed a number of dramatic visual media to this end.[34]

As an instrument of Counter Reformation propaganda, this image did more than present the didactic religious narrative of a saint being welcomed into heaven; the image acted upon its viewers in an encompassing, physical way, an important aspect of Jesuit evangelism.[35] Its theological power, from the perspective of the Jesuit mission, resided in the awe elicited by its vertiginous, hallucinatory presentation.

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33   Christopher Joyce, "Building for Birds: Architects Aim for Safer Skies," National Public Radio, August 9, 2012, accessed September 10, 2014, http://cityroom.blogs.nytimes.com/2011/05/06/bird-week-the-lure-and-danger-of-the-high-line/

34   Friedrich Kittler, *Optical Media* (Cambridge: Polity Press, 2010), 72-88. Kittler gives an account of the Jesuits' use of dramatic optical media as means for countering the text-centred ethos of the Protestant Reformation.

35   Ibid, 76-78.

Figure 1-2 *The Apotheosis of St. Ignatius*, 1685-1694, Andrea Pozzo, St. Ignatius Church, Rome

The effectiveness of the image as a political instrument had just as much to do with what it did not present to the viewer, as what it did. Utilizing specialist perspectival drawing techniques to fool the eyes of his viewers, Pozzo succeeds in painting away the ceiling of the church, illusionistically extending the earthbound architecture into the sky above and the opening of heaven itself. By design, the high drama of the ceiling fresco should overwhelm its viewers with religious devotion, distracting them from contemplation of the material processes by which the painting itself came to be. A lack of understanding of the artist's process did not lessen viewers' amazement, but promoted the work's acceptance as the product of divine intervention beyond their comprehension. The artist could be celebrated as medium of the Holy Spirit, the Church architecture and hierarchy as necessary conduits for God's grace, while the technical knowledge and material labour involved was utterly dissolved for its viewer.

What motivates and perpetuates illusion as I encounter it in the 21st century? Perhaps it is a similar willingness to accept that a thing is beyond my comprehension that allows me to overlook the material processes that compose some of the more spectacular aspects of everyday life, including the role of human labour in digital production. There are certainly aspects of the digital tools I use that obscure their own materiality and origins. Marianne van den Boomen presents an example of this in the elements of interface design such as icons and buttons, showing that material processes are 'ontologized and represented to us as readable signs, that is as material metaphors', but that our understanding can only go as far as what is represented and metaphorized for us onscreen.[36] Van den Boomen gives the deliberate act of selective representation the name 'depresentation'. The computer interface design presents to its users 'an ontologized stable state, while depresenting the procedural complexity'.[37] The same could be said for the fresco—that while the representation in the form of theological spectacle succeeds in rendering viewers awe-struck and renewedly devout, the material labour of the artist and the political circumstances of the Counter-Reformation that produced it are—also successfully—depresented.

Depresentation is an important and unavoidable aspect of digital materiality. It is because of this that an image-object, both plain to the senses and requiring physical interaction, comes to be treated as immaterial, disposable, ephemeral, inconsequential. Depresentation is enacted in a number of ways, some spectacular,

36   Marianne van den Boomen, "Interfacing by material metaphors: How your mailbox may fool you," in *Digital Material, Tracing New Media in Everyday Life and Technology*, ed. Marianne van den Boomen (Amsterdam: Amsterdam University Press, 2009) 263.
37   Ibid, 256.

others more culturally engrained or ideological. Because this depresentation results in part from the material particularities of digital objects, before I describe ways in which materiality is commonly depresented, I will outline my understanding of digital materiality, citing relevant theories of the digital and the material image.

To call something digital is to indicate, among other things, that it is composed of digits. From number to letter to pixel to image, it is a series of compositional actions that defines its digitality. Lev Manovich offers the two-fold process, to sample and quantify, for an understanding of the basic process of digitization. In sampling, the analogue object, a photo for example, is divided into equally sized and distributed parts. In quantifying, each of these parts is assigned an alphanumeric value, and together constitute a linear code corresponding with the program that will later read and express the code in a visible way.[38]

I refer to a digital image as an image-object to emphasize the importance of its materiality, which constitutes more than its readily sensible expression. By describing something as 'digital', I imply that an object is as much temporal as physical, and can be regarded as a material process as well as product. Though the code is produced and may remain relatively stable in its stored form in silicon, the execution or expression of the code—that unseen, often insensibly brief, reading/writing performance of software and computer— constitutes a duration.

As an image-object composed of parts, the digital image, whether digitized from an analogue original or 'born digital' itself, fits into Flusser's category of the technical image, exemplifying the potentials and the paradox of the designation. Technical images are 'envisioned surfaces computed from particles'.[39] This includes, as Flusser intended when first writing about them, the analogue photographic image composed of tiny flecks of silver, the film grain apparent at varying densities in accordance with light and chemistry to produce the appearance of what was once before the camera. Technical images must, then, be seen 'superficially. To be images, they require that the viewer keep his distance'.[40] The recognition of the digital image as image requires a particular viewing distance to image resolution ratio. Likewise, there is a threshold at which the human eye loses the ability to distinguish a pixel.[41] In an extension of this, the technical image, whether digital or not, enacts another sort of distancing by hiding how that image-object is materially instantiated. The analogue camera and the computer are black boxes, the first for photochemical reasons, the other for the vast technical complexity it needs in order to be useful for the user. In line with the necessity of keeping one's physical distance, the ways in which digital images are used in everyday life encourage a lack of curiosity on the part of the user, a suspension of awareness of the hidden material processes that constitute them. Through the unseen, unfelt, automated, material processes of sampling and coding, and the reading/ writing of that code into visible expression, I am presented with an image whose existence as such depends on my willing blindness to its material character.

My use of the sample-and-code understanding of digitization is admittedly a reductive account of the potentialities of computing. My need for reduction in order to have basic layman's understanding is the result of the history of increasing complexity and obfuscation in the workings of digital technology since the inception of the first computers. At one time the computing process was simpler, the origins of binary code having their roots in the Jacquard loom punch cards of the 19th century. Two hundred years after the invention of that loom, and seven decades after the first switch from human 'computors' (originally women hired to work in what were seen as administrative roles) to semi-automated computers, the process of coding and expression is compounded beyond the human scale of perception. Forgetting the wall-sized calculators employed by the US military in the middle of the 20th century, today's household software makes the post-typographic apparatus Flusser described in the 1980's look like an awkward and ancient technology. Wendy Hui Kyong Chun describes how the move away from human computors, toward 'what we call programming

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38   Lev Manovich, *The Language of New Media* (Cambridge: MIT Press, 2001), 28.

39   Flusser, *Into the Universe*, 33. 'Envisioning' is the term used by Flusser to describe the coming together of particles to form a visible image.

40   Ibid, 35.

41   "Retina Display," Wikipedia, accessed September 10, 2014, http://en.wikipedia.org/wiki/Retina_Display. Pixel-per-degree (PPD) is a term describing a size-independent relationship between viewing distance and image resolution. Apple's Retina displays, which boast screen resolutions at which pixels resolve, i.e. become undetectable to the human eye, begins at 57 PPD for hand held devices and increases as estimated viewing distance increases.

today, arose from a desire to reuse code [written by people] and to recruit the computer into its own operation'.[42] The people—again, the *women*—who were the first programmers, executed complex verbal instruction by moving wires, flipping switches and keying digits into the apparatus. It was decided that if the computer could be used to automate that first line of computing, the process would be less susceptible to human error or interpretation.[43] Once this was achieved, once there was added the first level of abstraction, of automatic mediation, the computer would always be a black box, even to its producers and programmers, much less an artist-as-end-user like me. The improvement of the black box would continue as a performance of human labour toward its own progressive invisibility.

Contingently Continuous: Understanding Materiality

There are two ways in which I understand the expression 'digital materiality'. The first is more literal, referring to the straightforward physical instantiation of digital objects. The second is to do with material histories, the agency of images as objects, and participation in the material production of meaning. Both these understandings challenge me to conceive of digital materiality in a way that rejects classical notions of subject and object, as well as fixed matrix and copy, by grasping the dynamism of the material processes at work. In doing so, they enable me to recognize some causes and examples of depresentation in the images I encounter.

The first meaning is typified in the digital ontology put forth by Johanna Drucker. In recounting her research into alternative forms for digital humanities, Drucker makes the unapologetic and clear cut argument for the material instantiation of digital code in the silicon chip of the computer, as well as the material differences from one expression of a code to another. In relation to the image-object as temporal as well as physical, this difference (or lack of purity) between code and expression also acknowledges the experience of the viewer in the process of the image, "Embodied materiality is always distinct from the code it expresses. Conditions of use and perception enter into the production of an image in a very real sense, since forms are neither immaterial nor transcendent."[44]

Drucker's focus on materiality in both code and expression highlights the difficulty of conceiving of a digital object without an understanding of object as process. It is as difficult to say where a digital object resides as it is to identify a geographical location for a mobile phone conversation taking place in a moving automobile. The object exists in its materially instantiated code, as well as in its time-based projected expression which is dependent on the code, but not identical to it. For this reason, I describe digital objects as *differently* material. The expression and the code are distinct aspects of a material process, inalienably bound to one another, the expression to the code for its material existence, the code to the expression for its ontological purpose.

The second understanding connects the recognition of digital materiality to the production of meaning. Hito Steyerl observes the relationship of the material qualities of the digital image to its potential deployment in saying, 'The glitch, the bruise of the image or sound testifies to its being worked with and working; being passed on and circulated, being matter in action'.[45] This understanding offers a way to participate in the potential agency of the image through a reconfiguration of what it means to be subject or object.

In the essay, 'A Thing Like You and Me', Steyerl advocates human identification with the material aspect of the image, its accumulation of histories, manipulations, degradations—its objectness—in order to

42   Wendy Hui Kyong Chun, "On Software, or the Persistence of Visual Knowledge," *Grey Room* 18 (2004): 29.

43   Ibid, 32. Chun draws a parallel between the fate of these first programmers and the nature of computing itself: 'Programming's clerical and arguably feminine underpinnings—both in terms of personnel and command structure—was buried as programming sought to become an engineering and academic field in its own right. Such erasure is key to the professionalization of programming—a compensatory mastery built on hiding the machine'.

44   Johanna Drucker, *SpecLab: Digital Aesthetics and Projects in Speculative Computing* (Chicago: University of Chicago Press, 2009) 139.

45   Daniel Rourke, "Artifacts: A Conversation Between Hito Steyerl and Daniel Rourke," Rhizome, March 28, 2013, accessed September 10, 2014, http://rhizome.org/editorial/2013/mar/28/artifacts/.

participate in the image. She notes the shift in the understanding of 'hero' from subject to object, from flesh-and-blood leftist militants to David Bowie as a tripled image in a music video, from one who exhibits 'the strength to survive' but dies all the same to one who cheats death as an image-object able to be 'xeroxed, recycled, reincarnated'.[46] Heroism is no longer found in the actions of a human subject, but in the material configuration of an image with the capacity to supersede the limitations of the human subject.

In seeking identification with this material aspect of the image, there is an opportunity to participate in the image. Recognizing the image (or myself) as an object in history allows participation in its (my own) accumulations. Participation in the materiality of the image opens the doors to understanding its history, the intensities which brought it into being, both social and technological. Paraphrasing Benjamin, Steyerl states, 'a thing is never just an object, but a fossil in which a constellation of forces is petrified'.[47] She also suggests that we do not stand apart from the rubble of history as the backward gazing angel, 'We are the rubble. We are this pile of scrap'.[48] Activating the thing (the image-object or myself as image-object) means taking on 'the task of unfreezing the forces congealed within the trash of history. Objectivity thus becomes a lens, one that recreates us as things mutually acting upon one another'.[49] It is this participation in the image-object—the understanding of its material histories—that enables the user of digital objects to produce meaning.

Understood in the ways outlined above, the digital image-object is a unique combination of material characteristics. It is both material object and material process. As object, it is materially instantiated in code in silicon chip and in its visible expression onscreen. As process, it exists in multiple locations simultaneously, including both code in silicon and onscreen expression. It is composed of particles, as coded numerical symbols and expressed pixels onscreen. The scale of these particles and processes are beyond the sensible appreciation of its human user. Because of this, it is readily available for unlimited manipulation and mass dissemination, i.e. copy. Its copy is not without loss in the strictest sense. It asks its users to stand back from it in order to see it, but beckons them closer for participation.

It is this last characteristic which is most challenging. The complexity of digital materiality raises difficulties for informed use of such objects because it is so far from singular and observable materiality. There is a danger in this that those material characteristics, because they necessitate the black box and the referred to distancing, lead me away from material thinking. I can only operate the computer on its own terms, from the outside, without a view to its internal workings. I may only see an image by occupying a particular distance from the material thing itself, lest the representation be obliterated by its own pixels. Must I choose between seeing the image and participating in it? When I begin to think of the moving parts that make the image, I may become less thoughtful about the image, and more interested in the work of those moving parts. It would seem that by working with digital images as representations, I must participate in the illusion to a degree. It may be possible, however, that in understanding myself as an image-object, as Steyerl suggests, my participation (as artist-image-object!) gets past the illusion by producing an awareness of not only the material machinations, but the more human origins of illusion and the depresentation of digital materiality.

Drucker gives one account of how digital immateriality seems to have slipped into the popular consciousness, beginning with 'mathesis': 'knowledge represented in mathematical form, with the assumption that it is an unambiguous representation of thought'.[50] When this belief is applied to digital objects, it assumes—on the authority of mathematical objectivity—the identicality of pure mathematical code storage to its onscreen expression. This conceives the digital object as a static object appearing to the senses in the same manner each time it is called upon, ignoring what Anna Munster calls the 'differentiality of one expression of code to the next.[51] This ignorance toward the existence of a contingent and dynamic processual relationship between

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46   Steyerl, *The Wicked of the Screen*, 49.
47   Ibid, 55.
48   Ibid, 56.
49   Ibid, 57.
50   Drucker, "Digital Ontologies", 141.
51   Anna Munster, *Materializing New Media: Embodiment in Information Aesthetics* (Lebanon: University Press of New England, 2006), 29. Munster describes differentiality as the serial difference between expressions of the same code, stating, 'To take the differential into account in an analysis of information culture is to reinsert the value of those intervals of noncapture, malfunction and chance fluctuation immanent to materiality *back* into the series of perfect replicas.'

code, software, hardware, expression and human user, permits the depresentation of the designed and even ideological underpinnings of digital representations.

Drucker also suggests that 'various misperceptions of digital media as lacking materialiality (sic) gain some of their credibility through connection to a tradition that idealizes the immaterial, even placing it in a theological frame, above embodied knowledge'.[52] Mathesis seems to lean on the Cartesian divide between the mind and body, the sacred and profane, the idealized content and the base form of its expression. This ethos is echoed, as pointed out by Munster, in post-humanist projects that 'give technology a utopian or transcendental place in cultural development, situating it spatially or temporally beyond embodiment'.[53] Mathesis's emphasis on the disembodiment of information depresents materiality by devaluing it.

Another way materiality is depresented is by user amplification—the phenomenon that 'The computer program amplifies our single action [e.g. the click of a mouse or touch of a screen], expanding it into a narrative sequence'.[54] The delight in this amplification works to envelop the user in the spectacular aspect of the interactive narrative of the graphical user interface (GUI). I see this in my early research practice with a mobile, networked device. My fascination with the GPS tracks I collected (Figs. 1-3 and 1-4), the accumulation of them, my ability to see them projected not just onto the map in Google Earth, but also into the constructed spaces of Google Street View, was consuming, but I could not explain why. They were just a set blue lines representing (supposedly) where I had been, replacing my embodied travel with its trace. Why did they work so differently on me than the hand-traced maps I made from my notes? It would seem that when a technology reduces lived experience to its trace on the one hand, and manages to feign user empowerment on the other, i.e. user amplification, there is a potential for the end-user to view the reductive transformation of experience as if it were a magical trace full of meaning.[55] Having made these tracks myself by using the device and moving around the city, I clearly identified with them. Since I had little understanding of the technology at work, they were also puzzling, something mysterious, and yet personal. Wrapped up in my own narrative-made-spectacle, the result was the feeling that I was participating in something magical, despite my knowledge that it was just the result of a technological process I did not fully understand. User amplification depresents materiality, diverting attention by involving the user in a narrative self-representation. This self-representation is not, however, an expression of independent, inspired creativity. The user is bound by the limitations of the computer program, itself a narrative carefully designed to give the impression of agency to the user. User amplification depresents both the internal machinic performance of the digital technology, and the laborious craft of the human programmers who wrote the software.

Distractions from and misconceptions about materiality are reflected by beliefs in the permanence of digital objects. This assumed permanence is closely tied to fears about Internet privacy, image and other property rights, as well as some negative consequences of Web 2.0. It would seem that by their availability for manipulation, copy and dissemination, digital images once uploaded to the Internet are difficult if not nearly impossible for the end-user to control.

In his book, *Delete: The Virtue of Forgetting in the Digital Age*, Viktor Mayer-Shönberger illustrates the potential consequences of this, using the example of Stacy Snyder, an education student who was denied her teaching certificate because of a questionable picture on social media. [56] Mayer-Schönberger worries that the permanence of digital objects threatens not only personal privacy, but also our human right to forget and to have our moments of bad judgment forgotten. Snyder's picture was actually pretty mild—she had a pirate hat on and was drinking from a plastic cup—but it came with the caption 'Drunken Pirate' and so was interpreted

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52 Drucker, *Speclab*, 134.

53 Munster, *Materializing New Media*, 10. Munster cites the works of Kevin Kelly, Lee Silver, and Kevin Warwick, as examples of this posthumanist, 'antimatter' research that advocates 'the machine as a means of reconfiguring human biology to be purely informatic'.

54 Lev Manovich, 'Generation Flash' accessed September 10, 2014, http://manovich.net/index.php/projects/generation-flash. Manovich uses the example of a video game character walking across the screen, but allows that this phenomenon happens across nearly all our computer uses.

55 I do not mean to say I believed at any time or that other users believe GPS and GUI technology to be magical. I use this language to emphasize the appeal of the mysterious aspect of black box technologies.

56 Viktor Mayer-Shönberger, *Delete: The Virtue of Forgetting in the Digital Age* (Princeton: Princeton University Press, 2009), 1.
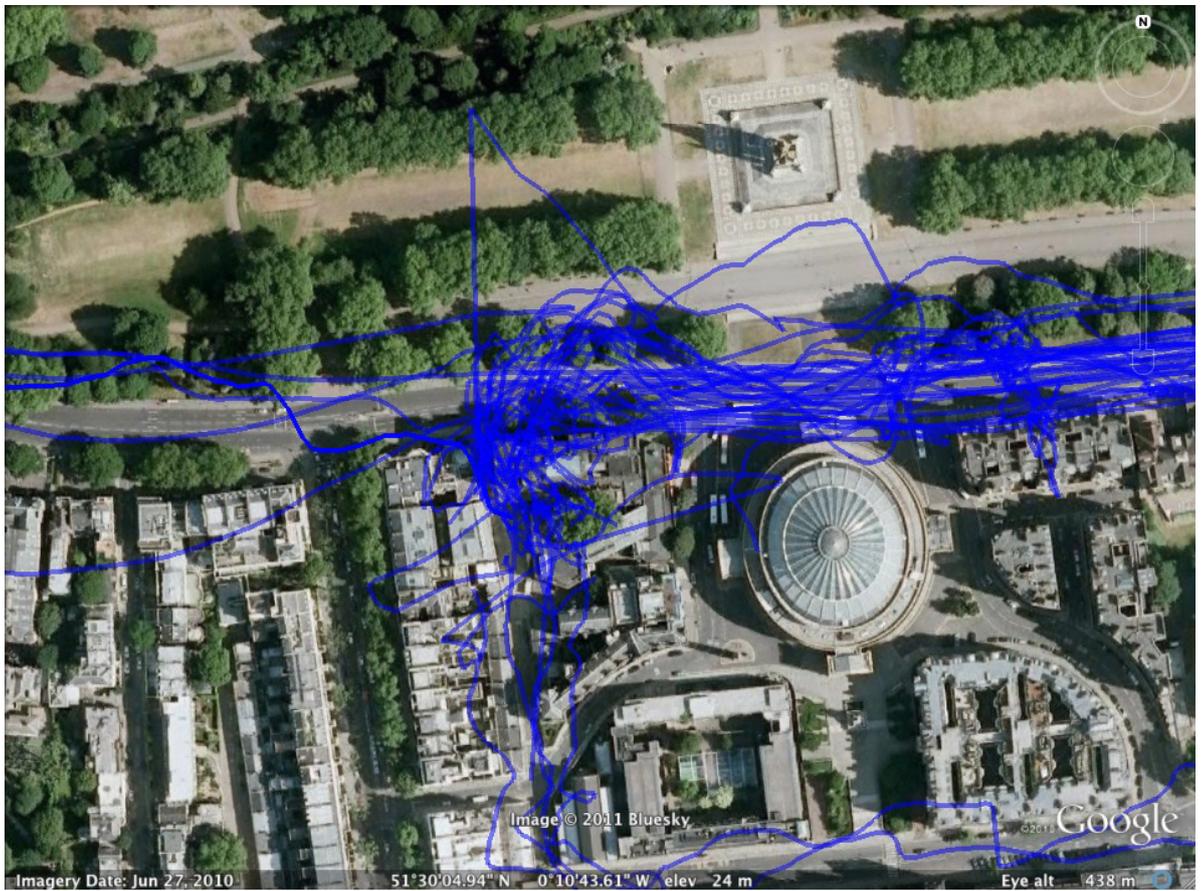
Figures 1-3 and 1-4 Accumulated GPS tracks as seen in Google Street View (top) and Google Earth

by her university to be unfitting for a school teacher. Ironically, in her effort to take legal action against the university, the case gained some notoriety and the picture is still the first Google hit for "drunken pirate" six years after the case was decided.[57]

Douglas Rushkoff echoes Mayer-Shönberger's concern over permanence and its consequences: 'the digital realm is permanent… And this permanence, once fully realized and experienced, only pushes the more cynical user to increasing layers of anonymity'.[58] I agree with both of them that the ability to reconstruct our past words and deeds in increasing detail leads to self-surveillance.[59] The propensity for images to propagate on the Internet is real. It is what these objects are designed for in large part. Mayer-Schönberger very rightly brings up the importance of forgetting in order to be forgiving as a society. It is not accurate, however, to equate the persistence of digital objects to permanence.

While permanence suggests an inevitable continuation, persistence means to have the potential to continue to exist. A persistent entity is still susceptible to being extinguished. It is contingently continuous. Under the correct circumstances, it may continue to be, but those circumstances are dependent on a number of things, including human labour. Digital persistence requires storage and connection. The servers that provide these are owned, maintained and regulated by organizations of people. There is no cloud. There are only stacks of blinking boxes that store much but do not remember anything.

Like Mayer-Schönberger and Rushkoff, Wendy Hui Kyong Chun asserts that memory is the most important characteristic of digital media, 'Its ontology is defined by memory, from content to purpose, from hardware to software'.[60] Yet, she points to the history of computing to show where metaphorical language (like the above use of 'permanence') may have steered us wrong long ago, 'The term *memory* or, initially, *regenerative memory* enters with mercury delay lines and Williams tubes—nonstatic devices that can hold values because their signals degenerate'. The loss of 'regenerative', the aspect of the name which referred to the instability of computer memory, allows us to forget that memory is an active and contingent process. The resulting conflation of memory and storage 'glosses over the impermanence and volatility of computer memory'.[61]

I am not splitting hairs to insist on the word 'persistent' in place of 'permanent'. A lack of precision in the language that scholars use to describe the digital is easily taken for truth, potentially misguiding cultural understanding and having real consequences. Jean-Francois Blanchette notes Meyer-Schönberger as one among many scholars who use immateriality as a central trope in their thinking on the broader implications for the use of digital technologies. Such use may be rhetorically effective, but fails in respect to accuracy.[62] I recognize 'permanence' as an example of hyperbole that does more than drive home the valuable point Mayer-Schönberger or Rushkoff want to make (which is essentially that people should be cautious and informed users of technology). To say 'permanent' is to reinforce myths of identicality and mathesis which themselves are based on the misconception of the digital object as static. It also suggests that the image of Stacy Snyder I saw on Google today is identical to its code or, for that matter, to an original, as opposed to being a copy of a copy of a copy of a copy enabled by a working network of people and machines. The notion of permanence not only depresents the vast material infrastructure and human labour that goes into

57   Brian Krebbs, 'Court Rules Against Teacher in MySpace "Drunken Pirate" Case,' *The Washington Post*, December 3, 2008, accessed September 10, 2014, http://voices.washingtonpost.com/securityfix/2008/12/court_rules_against_teacher_in.html

58   Douglas Rushkoff, *Program or Be Programmed: Ten Commands for a Digital Age*, (Berkeley: Soft Skull Press, 2010) 94.

59   Mayer-Shönberger, *Delete*, 197.

60   Wendy Hui Kyong Chun, "The Enduring Ephemeral, or the Future is Memory," *Critical Inquiry* 35(1) (2008): 154.

61   Ibid, 164.

62   Jean-Francois Blanchette, "A Material History of Bits," *Journal for the American Society for Information Science and Technology* 62(6) (2011): 1043-1045. Blanchette traces a trajectory of the rhetorical trope of immateriality, beginning with the extension of transcendent thinking around communications technology in the 1990's, e.g. Negroponte's *Being Digital*, and continuing through contemporary discussion about the regulation and authenticity of information in the digital age, including works by Mayer-Schönberger, George Paul, and others. Blanchette takes these arguments seriously, noting that the reasons for immaterial thinking are multiple and complex, but questions the viability of their approach for understanding digital objects themselves. His use of a historical analysis of computing supports my first understanding of digital materiality, acknowledging that code is inseparable from its material substrate and that computation is a mechanical process, abstracted to such a complex degree that it has the appearance of lacking physical constraints.

keeping digital objects available for copy and dissemination via the internet, but by refusing to acknowledge the contingent materiality of digital objects, it absolves the owners of server farms from having to account for what is done with the digital objects they house.

Like all material objects, digital objects degenerate, are subject to entropy in some way. Computer memory, our latest historical attempt at slowing the march toward chaos and death, must be supported in order to be used. Though an image of Stacy Snyder in her pirate hat might persist indefinitely in its availability, materially instantiated code, if not deliberately maintained, it will decay along with its silicon substrate just as hardware will slow, become obsolete, and languish unusable in a rubbish heap.

Yet in the slow advance of digital death, I rejoice! For death is the indication of a life that was, of an existence on earth in matter. And if it exists in matter, then I can work with it, make with it, engage with it, *participate* in it. Rather than be seduced, distracted, awed, or frightened by the tendencies of digital objects toward fluidity, abstraction and persistence, I can turn toward these objects to search for signs of life, seams, working backbones and beating hearts under skins of flickering pixels.

Re-presenting the depresented

'A work of art challenges its recipients by directing their attention to the medium itself. Works of art are not political because they manipulate politics, but because they reflect (on) the politics of manipulation'.[63]

Despite what is above, it is not in reading or theory that I come into contact with the materiality of the digital image. It is in looking at such images—Internet ephemera or works of art—and in working with them myself that I am met with the consequences of their materiality. Black box indeed, I am less than amateur when it comes to understanding the hidden technological choreography that enables me to work with digital images. There are places within the images, however, that afford me brief recognition that such a dance is happening, the jerky malfunction of an animated gif, the slow, cartographic scan of a large uploading image, the disappearance/reappearance of overlaid graphic indicators in a mapping application. These are moments when I do not necessarily see *more*, but which make me aware that there are things at work which I cannot see, the visibility of an invisibility.

In revisiting the early stages of my research, I can identify respective points when I began to recognize the two understandings of digital materiality described in this chapter. I find moments when material practice evoked instances of visibility, and opened spaces for tactical intervention in the digital image through reframing or re-presenting an image-object or particular technology. I also look to examples of artists whose work with digital image-objects interrogates the objects' own means of production. These practices, as well as those I came to adopt over the course of this project, employ a methodology of 'playing against', revealing them to be tactical despite their visuality.[64]

I began this research with a desire to have certain types of images, those made through the use of a mobile, networked device, reveal something to me that I could not anticipate. I wanted to know how the use of a smartphone might change the way I saw the space around me. I knew images could present the past and visualize the hidden, but they might also reveal unexpected complexities. I was preoccupied with the image of Richard Long's *Walking a Line in a Field* (Fig. 1-5) as a poetic physical gesture of inscribing oneself in a place. I thought at the time that tracing my own route through the city using a GPS tracking application would be an interesting divergence from Long's visible incursion into the rural space pictured.

63   Jos de Mul, "The work of art in the age of digital recombination," in *Digital Material: Tracing New Media in Everyday Life and Technology*, ed. Marianne van den Boomen (Amsterdam: Amsterdam University Press, 2009), 103-104.
64   In Michel de Certeau's *The Practice of Everyday Life*, the tactical performance of the individual in the city is opposed to the strategic designation of city infrastructure and rule of law. The individual is able to employ tactics creatively and invisibly because she does so in ways that are unexpected by, and so invisible to, the authority. In my introductory chapter, I call for a tactics of visibility because the pervasive surveillance in network society has made it impossible to act invisibly. This entails the continuation of putting strategically designated items to use in unexpected ways, but it is not expected to achieve invisibility and could even be seen as doing so in spite of its visibility.

Figure 1-5 *A Line Made by Walking*, 1967, Richard Long

FIgures 1-6 Stills from *0°00 Navigation*, 2010, Simon Faithfull

Interested in other artists' uses of GPS technology, I looked at Simon Faithfull's *0°00 Navigation* (Fig. 1-6), a film of the attempt to walk the Prime Meridian from the coast of Hampshire to the coast of Lincolnshire, as an example of playful misuse or redirection of technology.[65] The figure in the film swims into the Hampshire coast fully clothed and purposeful, scales a cliff, jumps fences, walks through a hospital ward, and shinnies out a kitchen window, demonstrating a total disregard for the physical, and even social obstacles that lie in his path, all the while focused on the GPS device in hand. Faithfull's work co-opts the technology into his tactical, i.e. non-sanctioned, movement through space, exposing the arbitrariness of a mapped line, as well as the absurd and potentially antisocial result of taking direction from a technology.

Layla Curtis's work with GPS technology is interested in the potential and limitations of mapping technologies, as traces of where we've been, what we've seen, and less overtly, what cannot be conveyed because it is unavailable to representation. *Cab Routes, One Week-London* (Fig. 1-7) uses animation to illustrate the passage of time and space, using GPS to trace a cab driver's fares chronologically onto a light grey street map of London.[66] Each red line reveals itself in turn. Once embedded and fixed within the map, a new line appears elsewhere. The barely visible map of the city gradually fades away, replaced with the work of the cab driver.


Figure 1-7 Stills from *Cab Routes, One Week-London*, 2001, Layla Curtis, Flash animation

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65   Simon Faithfull, "0°00 Navigation," accessed September 10, 2014, http://www.simonfaithfull.org/works/0o00-navigation/

66   Layla Curtis, "Cab Routes, One Week-London," accessed September 10, 2014, http://www.laylacurtis.com/work/display/5-mixed_media

This work, like Faithfull's, relates to de Certeau's critique of the everyday, the tactical use and production of knowledge, including in this case its relationship to economic exchange on a person-to-person level, here the cab driver and the fares. In considering the path, I imagine it as an interplay between learned tactical positioning (where the driver goes to find a fare) and the opportunities to which that positioning must respond (where those fares want to go). The animation replays the game for the viewer in a way at first seemingly detached from the driver's knowledge of his trade. As the lines multiply, however, they begin to organize a recognizable space, eventually denoting the city. Curtis plays with the idea of representing types of knowledge by presenting the tactical performance of a strategically determined skill set, i.e. 'The Knowledge', the written test of London streets that every London taxi driver must pass in order to be licensed.
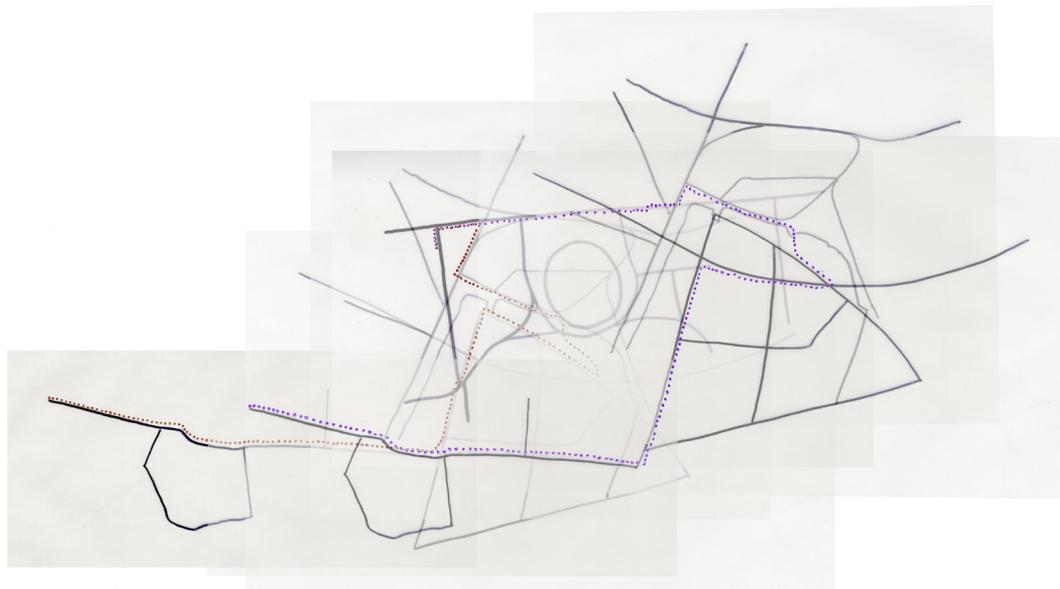
Figure 1-8 Early mapping study representing one day's commute to and from college, 2010, marker and tracing paper

Excited by tactical use of mapping technologies, I made some naive attempts to represent my experience of moving through urban space. Before embarking on collections using the iPhone, I hand-traced the routes of my journeys for a period of a month, overlaying them in a way that suggested the presence of some guiding logic, but ultimately confused viewers (Fig. 1-8). The work was duly met with resistance to the idea that such top-down, map-like drawing could evoke something of my experience. I had a hard time responding to this because I was sure that in the next step, with the use of the technology, I could represent something more. In retrospect, I believe I confused the illustration of time and space with the representation of experience. Though I was thinking at the time about Curtis's work described above and how a map might articulate something of my own tactical negotiation of city space, I failed to see that the map as a form evokes intentions and limitation more than any sense of experience, and that a route traced from a map, like the GPS track, is a highly reductive abstraction of physical movement.

Despite resistance to my approach, I still wanted to see how the use of technology might change or shape my research. With an open attitude to what might result from it, I continuously collected iPhone photos and GPS tracks whenever I moved from one location to another in the city for one period of six weeks, and later, one of four weeks (Fig. 1-9). What was revealed to me as a result of the collection process was not some new, unimaginable vision of myself in a hybrid real/virtual space, but was instead to do with a physical
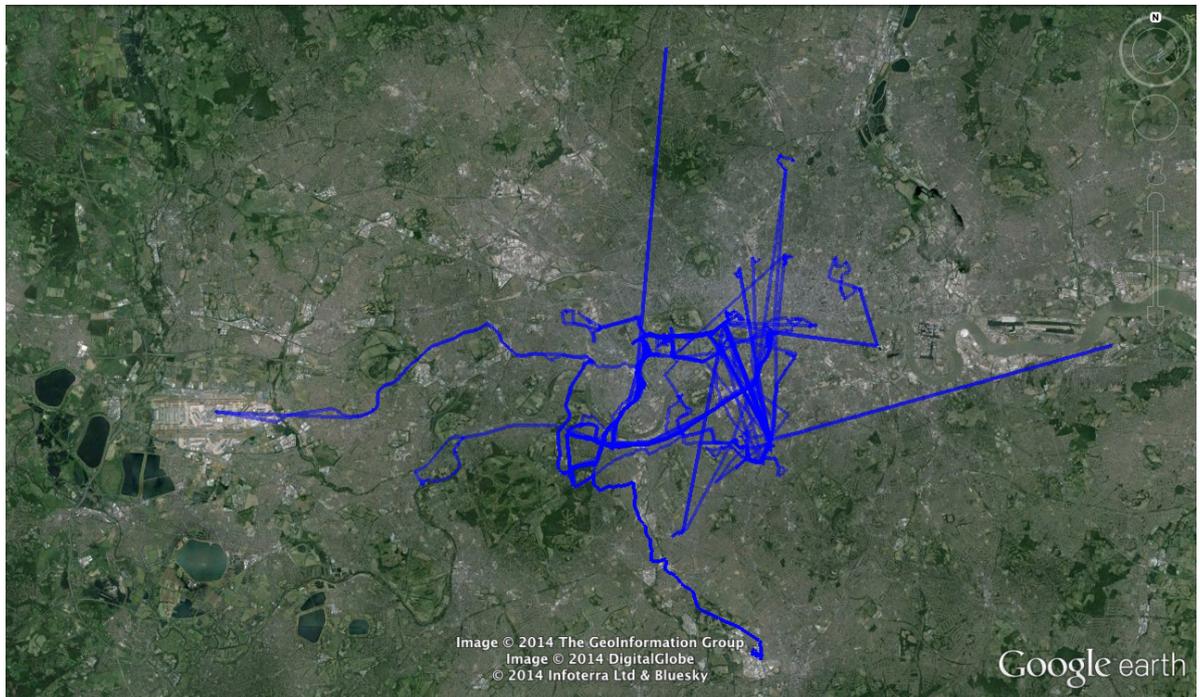
Figures 1-9 GPS tracks representing 10 weeks of collection (2011)

experience that never made it into image. The most dramatic way mobile technology affected my experience of space was by the compulsive way I came to interact with the device. Rather than thoughtfully observing the whirring spaces of big city foot traffic, I became immersed in a rhythm of pocketing and unpocketing the phone, of swiping and tapping. My eyes were definitely open as I pitched myself on and off buses and train cars, but all my conscious will was directed eccentrically toward the shuffle of fingertips on screen. The written work, *Text for Sound*, first conceived as an accompaniment to a series of CCTV images taken on London buses, is an expression of this repetitious state:

> *...Reaching the escalator, I press the Home button, swipe the arrow and touch the Camera application. I stand on the right side, holding the camera to my chest, but this time at an upward angle. I touch the shutter three times, step to the left and begin walking up the moving stairs. I touch the shutter twice as I reach the top of the escalator and turn left to walk toward the stiles. I press the Home button and place the phone in my right jacket pocket. Once I am through the stiles, I take the phone from my pocket, touch the Camera application and tuck the phone to my chest. I touch the shutter once as I descend a half flight of stairs. I touch the shutter twice in the corridor as I pass the public restrooms. I touch the shutter four times as I mount the stairs to exit the station, ascend the first flight, cross the landing, and ascend the second flight. I touch the shutter twice as I turn right and walk toward the bus stop. I press the Home button and place the phone in my right jacket pocket...*

The observation that my spatial practice was distracted was to be expected, divided as it was between embodied movement (of feet and fingers) and focusing on the technical capture of images. I did not anticipate, however, that it would so completely prevent me from reflecting on my surroundings in situ. Instead, I tried to think through my experience while engaged in review of the collection. Every morning I collated the photos and tracks accumulated in the previous 24 hours, trying to catalogue them in a way that might allow me to form a relationship with not just the images produced, but the spaces they pictured and traced. I came to see the emerging rhythms of my life, the forward thrust of time ticked in odd seconds from one photograph to the next, and the daily accumulation of loops traced to and from familiar places on a map, but before long felt overwhelmed and burdened by the time it took just to look at them.

At the start of this research I thought of digital objects, images, files, as immaterial things. They floated in the ether somewhere between my iPhone and my laptop until I needed them. They came when called, so I never questioned their substance beyond the superficial screenic level at which I interacted with them. In the

course of making these photographs and GPS tracks, I began to recognize my own misconceptions about their nature. By the time I wrote *Text for Sound*, I was beginning to acknowledge some support for that first, more literal understanding of materiality. First, the device was a physical object demanding physical interaction from me. Second, the accumulation of images and tracks demanded time—the time it took to actually make them, and the very real, very boring time spent putting them in some comprehensible order. Third, stored digital files must also take up physical space, as my dwindling hard disk space would attest. Just as I was made to face the inability of a mapped abstraction to convey lived experience, so did I begin to change my mind about the status of digital materiality.

I tried several ways of working with the images I collected. I projected and traced palimpsests outlining urban spaces. I collaged mapping elements into photographs, juxtaposed photographic images to give a sense of time passing and swift motion, overlaid my GPS tracks onto my iPhone photos, trying to evoke a sense of movement along with the indication of having returned to a place many times over (Fig. i-5, i-6, and i-7). None of these brought me closer to evoking or representing experience. They just reinforced what a photograph alone would have done anyway (in the sense of indicating what was, along with the presence of the photographer). On top of this, working so much in the computer left me feeling divorced from the practice of traditional printmaking, the type of physical labour to which I was accustomed in image-making. I returned to making woodcuts in order to force a more overt physicality into images whose materiality I was questioning.

Similarly to some of the digital prints, I overlaid GPS tracks onto three images of the street where I lived. Reducing the resulting composites to silhouettes of buildings and splays of GPS tracks, I prepared to cut three woodblocks for printing (Fig. i-8). As I sat at the blocks for hours and weeks, I thought about the disparity between the speed and smallness of the digital source images and the deliberate slowness of the physical act of making a large woodcut. I recognized an absurdity in my attempted geometric precision as I cut pixelated lines by hand (Fig. 1-10), and even found myself defending the work against suggestions that I should have just used a digital router. The time spent in work, in repetitive labour, may not appear to be the most cerebral way to spend several weeks, but it is actually in this time that my mind is able to work best. Relieved of the anxiety of idleness by the business of my hands, I could actually think more clearly about the research to that point. By acknowledging the time and physicality of cutting, I recognized that moving through the city to accumulate the GPS tracks was also a physical, temporal method for image production.

Between work on this triptych image, *Tracking Home*, and a diptych image, *Two Steps* (Fig. i-9), the following year, I came also to accept the tendency of digital images to reductively abstract experience to something

Figure 1-10 *Tracking Home*, detail, 2011, inked woodblock

Figure 1-11 *Diptrych I*, 2012, digital inkjet and woodblock print, 61x144cm

representable, but potentially hollow. Once I began thinking through the process of woodcut about the physical process of walking as a participation in the production of a digital image-object, however, I began to recognize other ways digital technologies reduce the world. In order to digitize something, it must be reduced from the continuous to the quantifiable. In doing so, something is always lost, and the data, incomplete by nature, becomes a stand in for what it purports to represent. I began to notice in my everyday interaction with the mobile device, as well as other personal networked technologies such as laptops or bank cards, that this ability to reduce human experience to quantifiable data has the potential to make me vulnerable to reification by those who command the system, commercial and political entities with great power and resource using individuals' networked interactions to create a stand-in demographic image in place of person. I found that mobile technology did not so much change how I see space around me as it allowed networked spaces to see me. In the second woodblock work, I placed silhouetted figures in the image space in order to evoke a sense of invasion, vulnerability, and flattening, in addition to the physical accumulation present in the earlier set of blocks.

I did not expect the act of cutting wood to cause an awareness of the physical process of digital images. Nevertheless, the practice made me wonder what hidden processes and materials were at work in all my interactions with the digital image. In considering the pixelated shape of the tracks I was cutting, I began to think of the slippery relationship of distance and scale in perceiving an image. While later cutting a 12ppi bitmap image in wood for *Diptrych I* (Fig. 1-11), I began to think about the even smaller moving parts of the digital image, how it comes to be, how it subsists in code, how it is expressed on my screen.

My awareness of the second understanding of digital materiality began with the recognition of the embodied origin of my GPS tracks, and developed through writing practice during the second year of research. In the course of my work with GPS tracks projected into the illusionistic space of Google Earth and Google Street View, patterns emerged along common routes and points of return, including my home. An interest in the appearance of this largest cluster above the representation of my flat very quickly sent me across the digital ocean to Google Earth images of my childhood home. I returned many times to these images, which served as thinking spaces. In order to articulate my preoccupation with them, I went through a process of looking, associating, describing and connecting my collected images in writing. This word and image work, *The Fiction of the Nest* (see Appendix 1), situated my thoughts about distance and scale, abstraction and representation, and surveillance technologies into the context of a homesick daydream. I came to recognize in the clustering of weeks worth of tracks the image of a nest, both dear and precarious, the representation of the lived relationship I had to digital image-objects. I also felt in the images of my homes past and present, that unsatisfiable desire for knowledge of or closeness to the subject of a photograph that Barthes conveys in

Figure 1-12 *#39.177833, Baltimore, MD. 2008*, 2011, Doug Rickard, archival pigment print

writing about the picture of his mother as a child in the winter garden.[67] For all my "zooming in", I could get no closer to these places, learn nothing more about them. I could only count the pixels on the screen.

The work of photographer Doug Rickard further conveys to me the futility of this desire. Rickard's work, like that of Jon Rafman and Mike Wolf, uses Google Street View to picture places at a distance to the photographer. Instead of collapsing this distance, however, those images in Rickard's *New American Picture*, a series depicting contemporary American poverty (Fig. 1-12), accentuate the distance between bourgeois artist-voyeur and unknowing, marginalized subject precisely because of its digital, networked, and remotely captured source.[68] Recognizably sourced from the computer screen, they indicate separation and ultimately the photographer's absence from the pictured scene. Their poor image quality coupled with the felt presence of the screen rejects any promise of knowledge in close inspection before the desirous curiosity can effect a grasp. I feel empty rather than empathetic when I look at these images of human deprivation, their material origins the automatic product of an inhuman eye.

The digital print, *The Distance Home* (Fig. 1-13), ruminates on the acceptance of such an eye. As neither the geographic distance between myself and loved ones, nor the temporal distance between present and past, can be overcome, I take what I can get: the saturated satellite hallucination of a giant corporate entity bent on reducing all the world to information.[69] I see in this image, an effect of that second meaning of digital materiality. Though I wonder at the perpetuation of illusion, I recognize it is my own complicity that inspires the question. My desire for the subject of an image is what prevents me from the participation in the object that Steyerl suggests might be liberating. I share with the digital image a complexity as material object with history and agency. The image of home seen in the instrumentalized aestheticization of Google Earth remains peculiar in its familiarity, like a person who I am sure I know, but who claims not to know me.

From the strangeness of this image of nest-home comes awareness of both the relationship of comfort and vulnerability in respect to personal privacy, and a designed dependency on the hidden materiality of digital objects. It is particular to digital material that continuous objects and lived experiences are reduced and made quantifiable, and thus apt tools for the commodification of human users. For the recognition of

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67   Roland Barthes, *Camera Lucida*, 100. Barthes writes of the desire to enlarge the image of his mother in order to know her better, but 'Alas, however hard I look, I discover nothing: if I enlarge, I see nothing but the grain of the paper; I undo the image for the sake of its substance...'
68   Doug Rickard, artist's website, accessed September 10, 2014, http://www.dougrickard.com
69   Google's mission statement: 'Google's mission is to organize the world's information and make it universally accessible and useful'. Accessed September 10, 2014, https://www.google.com/about/company/

Figure 1-13 *The Distance Home*, 2012, digital inkjet print, 24x45 cm

my actions made object in the form of the nest, I appreciate the necessity of asserting digital materiality in protest against personal and collective vulnerability to the purveyors of the network from which I fail to extricate myself.

It is also for the sake of my practice that I assert this materiality. I participate, as an artist, in the production of meaning on an individual scale, and in this work concern myself with broader cultural meanings. The tools and processes I use, and the systems in which I participate, imbue the things I make with a history and a particularity that depend on their materiality. Drucker insists that the inscription of form in matter is what 'situates representation in human cultural and social systems where the condition of materiality permits and/or requires critical consideration of the ways material form participates in and helps replicate cultural mythologies'.[70] It is true that I do not fully understand the everyday digital technologies I use, but I acknowledge my misunderstanding in a practice that reflects on and seeks to clarify it through the practice of *re*-presentation. I can embrace the black box as a fundamental and informative aspect of my practice without ignoring the depresentation it enables. I can be wary of my own dependence on provided cultural forms of image and communication by using them to interrogate the cultural mythologies they perpetuate.

Before beginning this research, I suffered the same self-perpetuating cultural misconceptions of digital immateriality against which I argue here: 1) notions of identicality based on the cultural authority of mathesis and the magic of user amplification, and 2) the confusion of persistence with permanence. By critically engaging with digital objects in daily practice, however, I came to see the depresented aspects of these objects re-presented in the process of practice-led research. The collection process revealed to me the physicality and temporality of my superficial, end-user engagement with the networked devices I used. Making woodcuts from the collection slowed the process of image making, enacting a time-space for thinking about a single digital image for weeks at a time. The slow physicality of cutting wood contrasted the speed of the digital file, corresponding more to the bodily movement that initiated the GPS tracks. Writing through the collected images foregrounded for me my own distraction from the materiality of the image by my fascination with the spectacle of interactivity and my desire for the geographically distant subject of the image.

Digital materiality is not what is at stake here, though. Whether or not I believe (which I do) that digital objects are material, they will remain so. They are instantiated in code in silicon, and expressed in unique particularity across platforms through a process of multi-locational emergence, a quantum process of

70   Drucker, "Digital Ontologies," 145.

becoming what I perceive as image onscreen. What is at stake is that which depends on the *recognition* of that materiality. Generally speaking this includes human agency in relation to concerns running the gamut from personal privacy, image rights, and the status a digital file as personal property or public information, to the use of remote imaging technologies in warfare and the reduction of human beings to demographics. Pertinent to this research, it includes my own informed use of digital technologies in art practice, my ability to participate in the image and all its histories and potential consequences, and subsequently the ways that practice might engage with those contemporary, worldly concerns. Challenges persist for me as an end-user of technology. Unable to understand fully, let alone write code and design software, I am susceptible to hidden ideologies, unchallenged systems of convenience. But I do not need to be an architect to recognize a building—or to point one out to others. In practice, the tactical interrogation of these systems begins with what is a small incursion: making visible the presence of invisibility by presenting in image the seams that give away the illusion.

Chapter Two

Functionally Illiterate: On the Hand-making of the Digital Image

I am illiterate.

There is paradox in this written statement, if, that is, it is not entirely false. How can I write those words and mean them in truth and without ignorance? The condition which enables paradox over falsehood is that today reading and writing no longer encompass the individually empowering status that they did even a generation ago. Literacy has a new, broader meaning, and with the broadening of that meaning comes a dark expanse dividing the literate on one shore from the merely educated on another. The words I can read, write and artfully recite do not even touch the glistening surface of dark waters obscuring true contemporary literate agency. They only reflect back to me my own creative impotence. Where did this begin, and how can I achieve some better state, some closer understanding of what lies beneath that surface?

The new and all too rare form of literacy, and subsequently common illiteracy, may not have begun with words at all. In Vilem Flusser's functionalism, human use of the camera serves to strengthen and refine the work of that apparatus, rather than empowering the user, because the apparatus itself is a black box, controlled with a set of external keys provided by its manufacturer. The human user, not knowing what goes on within the apparatus, surrenders control for a set of choices between predetermined keys. The production and publication of photographic images provides profitable feedback to a program of technological improvement. All use, innocently or not, rolls toward the service of the apparatus over the will of the human user who has, perhaps unknowingly, embarked on the first step toward her own illiteracy.[71]

With the introduction of digital photography to networked and mobile communication and the rise of social networking, I am immersed in the same sort of functionalism Flusser saw in relationship to traditional analogue photographic technology. The personal networked device not only produces images, it enables and encourages their instant submission back to the program of image improvement through the Internet. One result of the user-friendliness of imaging applications and the current speed of the networks which bind individuals to one another, is that the production of technical images has increased so exponentially as to provide ever-changing opportunities for distraction in the guise of 'content', the perusal of which is likewise fed back to the program. Image-driven communication technologies have given shape to a new way of being in the world: the contemporary networked condition in which continuous connectivity to the digital network turns the practice of everyday life into an unending feedback loop.

I am illiterate.

As an individual subjected to overwhelmingly large international, political, and corporate entities by her reliance on and entanglement in a vast network of mediated communications, my own powerlessness should come as no surprise, and yet it is staggering to me. Unable to understand even the written language of code by which this network persists, let alone the further technological and economic intricacies that enable it, I am faced with the question of what to do about it. What *can* I do about it?

I recognize the need for a tactical approach to living with technology in the sense of de Certeau's 'walkers in the city', but I question its possibility.[72] It is a very real challenge to work creatively with networked technologies without the outcomes of that work being fed back to strengthen a program of apparatuses instead of a human program of inventive criticality. Flusser' methodology of 'playing against the camera' offers a possibility of some freedom from this feedback loop by '[outwitting] the camera's rigidity... [smuggling] human intentions into its program... [forcing] the camera to create the unpredictable, the

71   Vilem Flusser, *Toward a Philosophy,* 16. Flusser's philosophy of photography takes as its purpose the criticism of the black box in the hope of liberating human users from a state of functional servitude, stating that 'As long as there is no way of engaging in such criticism, we shall remain illiterate'.
72   de Certeau, *The Practice of Everyday Life*, 93. De Certeau describes walkers in the city as existing 'below the thresholds at which visibility begins', making the point that tactical creativity depends on one's degree of visibility.

improbable, and the informative… [or turning] one's interest away from the thing in order to concentrate on information'.[73]

In order to apply this methodology to the contemporary networked condition, I must consider the particularities of the technologies at hand. In his book, *Program or Be Programmed,* Douglas Rushkoff advocates the acquisition of the new literacy, giving ten suggestions for knowing the biases of the digital technology. He ends with the bold assertion that unless we—*all* of us—learn to program, we are really through with making independent choices.[74] This is a hard pill to swallow, that I must learn to program a computer in order to be an engaged user of technology. It sounds at first to say that in order to responsibly drive a car, I should know how to build or repair one. But true expertise aside, a working knowledge of automobiles will surely help me to avoid being cheated by rogues mechanics, or even make me knowledgeable enough about how to care for my car in a way that may keep me out of the shop altogether. Rushkoff's point, and one I take up in the art practice I will outline in this essay, is that knowing the biases of the medium, whether or not I become an expert programmer, will make me less vulnerable to exploitation, and enable me to be a more sensitive user of technology in both my personal life and my work as an artist. It may even allow the sort of participation in the image that could win back some agency from the functionalist loop of everyday technological consumption.

For the purpose of this research, I am not prepared, nor is there the time to learn to write code, to program computers or to design software. The work I describe below is an attempt to understand the digital not so much as a technology, but as a way of thinking about the world through the structure of an image. Toward this end, I have developed a manual technique for image making that can also be called digital. Through the production of images using this manual digitization process, I am not only able to experience some of the aforementioned biases at work, but through the slowing down of a computer process to the speed of human labour, I am afforded the time to observe the ways these biases infiltrate my own approach to image making, as well as my ways of valuing and interpreting both the image and the world beyond it.

Figure 2-1 *Addendum Sky*, 2013, handmade digital image object in crocheted yarn, 114x200cm

73   Flusser, *Toward a Philosophy*, 80.
74   Rushkoff, *Program or Be Programmed,* 134. Rushkoff writes that digital technology is 'biased toward those with the capacity to write the code. In a digital age, we must learn how to make the software or risk becoming the software… Otherwise we are at the mercy of those who do the programming, the people paying them, or even the technology itself'.

Figure 2-2 *Scribal Drift*, 2014, installation of handmade digital image-objects in crocheted yarn, each piece approximately 120cm wide. Also showing *An Image of Nothing* (back left) and *White Screen III* (back right), 2014, digital inkjet prints, 70x70cm each

In this chapter, I describe the process by which I made the works *Addendum Sky* and *Scribal Drift* (Figs. 2-1 and 2-2). This process occupies a position of material hybridity. It is not purely digital or analogue, automatic or manual, but an interweaving of embodied gestures with digital technology. Though their arithmetical complexity may pale in comparison to the blindly coded envisioning of the digital image-making processes they consider, these interwoven gestures attempt to reflect on the shared, meaningful inhabitation of a digital medium by its tools, materials, and human user, and in doing so, develop a particular material consciousness of digitization.

A technical image, according to Vilem Flusser, is 'a blindly realized possibility, something invisible that has blindly become visible'.[75] Envisioned of particles generated automatically by an apparatus, 'Technical images are only images at all if they are seen superficially. To be images, they require that the viewer keep his distance'.[76] The backlit pixels on screen are building blocks. They are the material of the image at the scale of the barely sensible, a sensibility whose tenuous nature is the requisite for the image itself. If the particles were to enlarge within my field of vision, perhaps if I step forward for a closer look, I might notice them simultaneous to the represented subject, or even before, jeopardizing their status as image.

For a century and a half, technical image making relied on the speed of the analogue camera. In recent years, alongside an ever-increasing demand for clarity and size in technical images, as well as the rise of the camera phone, digitization has come to replace the analogue to this end, and brought with it the added layers of both processes and meanings.[77] Digital cameras could take hundreds, sometimes thousands of images at no added cost to the consumer. Once they were able to take images the quality of which could rival those of analogue cameras, the expense of the 24 shot roll of film, added to the cost of processing, seemed superfluous. The advent of social media like MySpace and Facebook in the early 2000's cemented the importance of digital photography in everyday life by the image's swift transfer from camera to computer to personal webpage. In this contemporary version of Flusser's functionalism, human productivity rolls not only toward the refinement of technology, but toward a mass distraction from that which occurs outside the backlit and framed world of the screen.

Critical understanding of the image today begins for me with the structure of the technical image, specifically the digital image, and the process by which it comes into being: digitization. The process of image digitization in its simplest terms exists in two steps: first the sampling of an image space into pixels, and then the assignment of an alphanumeric value to each of these pixels resulting in a linear code of instructions.[78] Division, then value. It is to objectify not the image as a whole, but each of its multitudinous component parts at the sub-human scale, the scale beyond which human vision is first aware upon encounter, then to regulate their reproduction by assimilating them into coded lines. This is the work of the digital apparatus. To render up an image of the world in such detail requires a temporospatial scale beyond those of the human eye and hand. As image quality increases, so does the disparity between these scales. The newest image envisioned from particles would challenge me to see it thusly composed[79]. And why *should* I take notice? The speed and frequency with which I am confronted with new examples of digitization serves to distract

75   Flusser, Into the Universe, 16.
76   Ibid, 35.
77   Audley Jarvis, 'How Kodak invented the digital camera in 1975,' TechRadar, May 9, 2008, accessed on September 10, 2014, http://www.techradar.com/news/cameras/photography-video-capture/how-kodak-invented-the-digital-camera-in-1975-364822; Mike Muskgrove, "Nikon says it's leaving the film camera business," *The Washington Post*, January 12, 2006, accessed September 10, 2014, http://www.washingtonpost.com/wp-dyn/content/article/2006/01/11/AR2006011102323.html; Simon Hill, 'From J-Phone to Lumia 1020: A Complete History of the Camera Phone,' Digital Trends, accessed September 10, 2014, http://www.digitaltrends.com/mobile/camera-phone-history/. Though the first experimental digital camera was invented in 1975 at Kodak, the first one to be made commercially available was not until 1990. Ten years later J-Phone, a Japanese company, offered the first camera phone. Kodak had already stopped selling film cameras altogether, and Nikon had reduced its product line to only two analogue cameras before Apple released its first generation iPhone in 2007.
78   Manovich, *The Language of New Media*, 28.
79   "Apple (United Kingdom) – Macbook Pro with Retina display – Features," accessed October 3, 2013 http://www.apple.com/uk/macbook-pro/features-retina/. Apple's claims that its retina display's 'pixel density is so high, your eyes can't discern individual pixels. Images take on a new level of realism'.

me from searching for the particles, the pixels, the seams that would reveal the material of the image itself. Universe of technical images, indeed.

The disparity between the digital scale and the human scale is overwhelming. I return to what I can understand, to the simple description: to sample and code, to divide and value. These processes have a fairly apparent place within my own image making practice, but I struggle with their implications. When I divide and code an image by hand, as I will describe in more detail, what am I really valuing? What idea do I advocate in the gross simplification of the gloriously mutable and unending world into a series of lines of coded representation? The active consideration of the structure of the image, and how it comes to take that structure, should lead to a better understanding of how it applies its own values to those of us who use them.

By considering certain aspects of my practice, I note instances and sometimes even drawn out experiences of resistance. Examples of these resistances are telling enough, but methods developed in order to sustain work in the face of them produce some of the more surprising delights of this work, and give a clear sense of the nature of the disparity. Here I am happy to report on the production of what I believe is 'the informative' and 'the unexpected', at once one of the generalized goals of Flusser's methodology of playing-against, and an example of the 'outcomes' which serve to substantiate this work as research.

My first experiments with the structure of the image considered the automaticity of technical image making beside the work of the hand by combining digital and woodblock printmaking techniques. In making the *Diptrych* works, I thought of the perceived contrast between the rigidity and time intensiveness of woodblock printing and the fluid mobility and mutability of the work's digital source. The experience of making these works called into question an earlier assumption I had made about the nature of digital objects. In the course of my daily use of them, I had conceived of digital objects—images, documents, etc.—as immaterial. I was thinking of GPS tracks as immaterial and at the same time took interest in them for their index of my physical movement. They were certainly constituted in code, recorded at a scale that is small beyond the work of the naked eye, but were no more ether than a molecule of DNA. Neither were they a precise representation of my movement—though I realize now that my impulse to view them this way is closely connected to the rhetoric that would have me look at satellite images as documents of incontrovertible evidence.[80] Digital objects are necessarily mediated material objects, ones which can be misinterpreted or altered perhaps indefinitely (and this is their special quality), but no less extant as things in the space of the world. [81]

These hybrid prints dealt with the trickiness of thinking an image either rigid or mutable by replacing the assumed nature of the digital image (its mutability) with a printed image of particulate rigidity. A diptych print in inkjet and woodcut, *Diptrych I (Fig. 1-11)*, is a pixelated portrait of a commuting woman both juxtaposed with and obscured by a swirling configuration of digitized white lines. The image on the left of the diptych is an inkjet print from a digital file, while the image on the right is a woodcut made from the traced projection of a digital file cut by hand into the surface of a woodblock. The two sides are linked by the extension of the digitized lines across both image spaces.

This question of the scale of the material dimension of a digital object set me to thinking about the particulate nature of my own body, organs, tissues, cells, organelles, molecules, atoms… It dawned on me that one reason I have for thinking myself a singular whole being is a matter of scale, but possibly also proximity. The impulse to pixelate the image of the woman was to observe how the scale of the printed pixel on one side of the image and the handmade mark on the other might elicit meaningful responses from a viewer. My hunch was that, though the woodcut squares and the inkjet pixels maintain the same scale of 12

80   Marmor, "Bird Watching," 317, 319. Kathy Marmor give an example of how a rhetoric of transparency is born and sustained: '[satellites'] scientific functions and sophisticated technology and their history of espionage keep satellites inaccessible to the layperson and perpetuate the idea that satellite images objectively document the earth'. She goes on to argue the slipperiness of such a rhetoric, 'The notion that transparency give rise to a discernible object or fact… is a cognitive construct the instructs one *how* to see'.

81   By saying that 'digital objects are necessarily mediated', I refer to their need for expression via a computing device in order to be perceived.
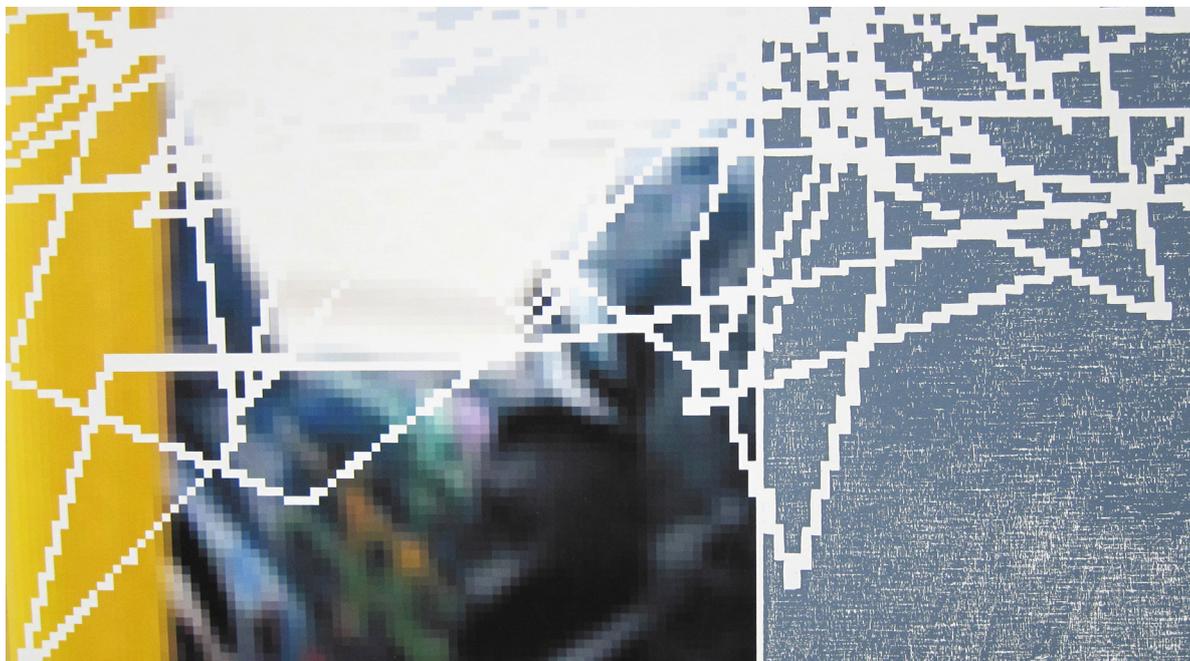
Figure 2-3 *Diptrych I*, detail

pixels per inch (Fig. 2-3), the differing methods of their making would incline the viewer to assume varying proximities to the image. The interest in the detail of the handmade as index of skilled craft should pull the viewers to the image. A desire to conceive of the photographic image as a whole—as well as the diptych as a singular work—should send them back.

This was the first work in which I was interested in how the material signature of an image might influence the way it is interpreted and valued by a viewer, revealed potentially in the viewer's interaction with the image. I became more aware of the visibility of the pixel in my work as both aesthetic fascination—the attractiveness of the twinkling, flickering edges of tiny colour blocks—and challenge to the status of an image. By the visibility of the pixel, the work reveals its construction and threatens its own dissolution.

I recognize a similar oscillation between abstraction and representation in works of the artists Christiane Baumgartner and Dan Hays. Baumgartner uses the observable work of the hand and the associated duration of that labour in prints that express an interest in the speed of the digital image itself. In works from the
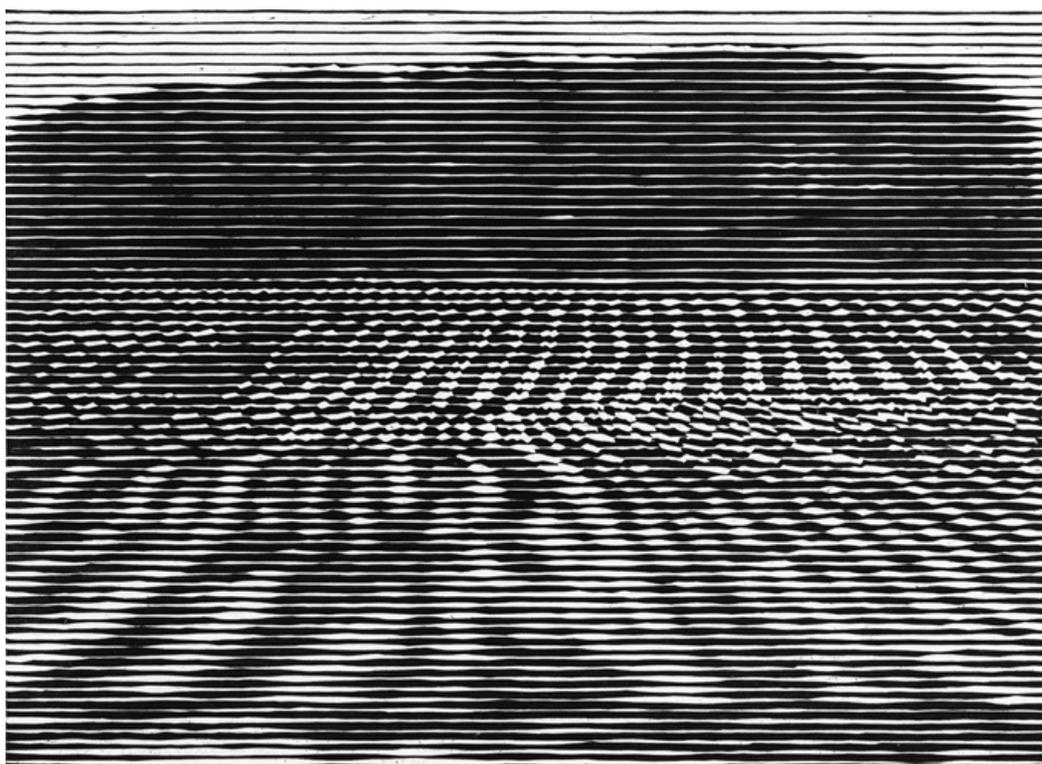
Figure 2-4 *Gelände II*, 2010, Christiane Baumgartner, woodblock print, 53x66cm

Gëlande series of woodcuts (Fig. 2-4), the interplay of the cut lines and the pictured rows of crops as presumably seen from a speeding vehicle cause a visual disturbance much like the moiré that appears in a digital photograph of a computer screen. The viewer is made aware of both the speed of the body in motion past the field and the physical experience of human sight. By their relative smallness, these works plays with viewing distance in a more intimate way than Baumgartner's wall-sized woodcuts. Approaching these works at a viewing distance usually appropriate for works of this size, perhaps a few feet away, the viewer is faced with an abstraction of wiggling horizontal lines. The familiarity of the subject and the manipulation of human vision by mechanized speed is only revealed from a greater distance. Hays's long-term project, *Colorado Impressions*, also suggests the disparity between human and computer scales by the duration of working by hand from digital source (Fig. 2-5). Reconstituted outside digital material as painting, they represent more than a material reconfiguration, but the absurd brilliance of digital media to enable recontextualization. The paintings Hays makes from various digital sources—including one amateur photographer also named Dan Hays—are a mediated, partial view of a distant place, greatly changed in form and meaning by their laboured reiteration.

Figure 2-5 *Colorado Impression 11a (after Dan Hays, Colorado)*, 2002, Dan Hays, oil on canvas

In searching the digital everyday for examples of material signature to use in my own practice, one phenomenon in particular revealed to me how its signature might unintentionally reflect its purpose for and effect upon its human users. At any designated location in Google Street View, many images taken simultaneously by vehicle-mounted cameras are algorithmically stitched together into a hemispherical dome in order to create the eventual onscreen illusion of continuous 720 degrees of space. At 'eye level', the transition from one source image to the next is often undetectable, but by clicking and dragging that image downward, a look at the sky in GSV reveals a small something else. Reminiscent of the meeting of the paper strips that compose the surface of a globe, the source images at the apex of the sky come together noticeably (Fig. 2-6). They stretch, squeeze and compress the material of the discreet digital images, making a spectacular, little pattern.

In a series of digital prints entitled *God's Eyes* (Fig. 2-7), I use images of sky as seen through the filter of this algorithmically generated composite in order to examine the relationship between the particulate nature of a subject matter (clouds in sky) and a pixelated distortion which disrupts the illusionistic space within

Figures 2-6 and 2-7 An image of clouds and sky in Google Street View (top) and *God's Eye VI*, 2013, digital inkjet print, 80x80cm

the image. In making them into prints, I am interested in the way a heavily mediated envisioning might unintentionally interact with the world outside Google. Torn from context, their striations evoke a constricted iris and a closed aperture, a disembodied eye that cannot see.

These images differed from the mere pixilation I played with in the *Diptrych* works because they gave away their mode of construction not by a simple scaling up, but by the incompletion of illusion. Upon first noticing them, I stopped thinking about 'where I was' in GSV and became more aware of the entire application's status as illusion. When looking at an image of the ever-changing sky, what is pictured is not likely still to be.

The title *God's Eyes* refers to a Native American tradition of winding brightly coloured yarn around crossed wooden sticks to make the concentric pattern that is a symbol of godly omniscience, a practice which has been widely adopted as a children's handicraft in the US, and of which I made many as a child myself. (Fig. 2-8) The notion of human hands forming the all-seeing eyes of God resonates with the allegedly benign corporate surveillance committed through the digital god's eyes, Google Street View and its sister, Google Earth.

I did not immediately make the connection between the yarn and stick handicraft of my childhood and the composition of digital images. It was in studying the pixels, zooming close to see their crisp, gridded edges, that I thought, as I have also thought from time to time when cutting pixels in wood, of the relationship of textiles to the technical image. There is a well-known history of Jacquard textiles as precursor to early computing.[82] Though I cannot explore it here in depth, I recognize that the paper

Figure 2-8 'God's Eye' handicraft

punch cards used to convey the image through the loom are similar to the type of simple digitization I would eventually employ. The warp and weft of loomed textiles, however, do not correspond closely enough to the individuated pixels of the digital image. In addition, I needed a process that would also emphatically reject the speediness of mass production. The domestic handicraft of crocheting, with its focus on the counting of each individual knot, proved both a closer equivalent to the linear codes of image and software I sought to investigate and a departure from the efficiency of commercial production.[83] Using crochet, I was able to develop a system for hand-making a digital image-object.

Image capture with a digital camera takes a fraction of a second, in which time sampling and coding are complete and ready for the expression of the image. Unlike the woodblock process with its long stretches of repetitive labour, there is no time for contemplation in the duration of a digital photograph from shutter click to onscreen display. The human body is not attuned to its temporality in the same way. In my attempts to enact these basic steps of image digitization, I spend weeks sampling and coding, scanning and observing, and then several weeks more on the visible expression of a recognizable image-object. Through hand-making a digital image, I hope to better understand how the meaning of an image is derived in some manner from the way in which it is produced. By replacing the automaticity of the apparatus with the unpredictable inefficiencies of human labour, I try to put the temporal disparity between these two modes into finer perspective.

82   Frank da Cruz, "The Jacquard Loom," accessed 3 October, 2013, http://www.columbia.edu/cu/computinghistory/jacquard.html. 'The punched-card idea [used in the production of Jacquard textiles] was adopted later by Charles Babbage about 1830 to control his Analytical Engine'.
83   Knitting also bears a close relationship to digitization, as its patterns follow a set of instructions for the construction of an object or image; however its use of many active stitches at once as opposed to one single active stitch after another in crochet, pushes knitting into the realm of greater complexity than the basic linearity I sought.

Observational digitization begins with a source image, here a circular image of clouds in sky. After measuring its proportion and shape, I design a crochet pattern that will produce that shape at the desired size. This must take into account the size and shape of the crocheted knot, which varies depending on the yarn and the hook chosen. Once the source image is divided into units corresponding to the crochet pattern, each unit is given an alphanumeric value. In the case of the work I present here, "B" signifies a blue stitch and "W" signifies a white stitch (Fig. 2-9). Each value is a subjective measurement of the relative blueness or whiteness of a particular sampled particle within a gridded sea of tens of thousands of others. It is a process of precisely measured division and close, yet imperfect, observation, a slow horizontal scanning of slice after slice of source material, and the writing of a linear code that to the human eye gives nothing in the way of a clue as to the appearance of the resulting three dimensional image-object.


Figure 2-9 Details of on-screen code (left) and detail of *Addendum Sky*

Once the code is written, the 'envisioning' can begin. Though the coming together of particles to make the technical image is an automatic gesture for an apparatus, in my case, it takes up to a month to crochet the equivalent of one fifty-fifth of a megapixel. This second part of the process is more straightforward than the first. Where digitization required arithmetic and planning, crocheting the image is a process of counting. The code is read from beginning to end, the blue, the white, the blue white blue blue white, the lines of many blues or many whites, the fingers and metal hook catching yarn and folding fabric over again to accommodate the growing size of the object. As I follow my own instructions in the form of pattern and code, I count and recount as a check on the accuracy of the code to the pattern and the image.

Such tedious, repetitive handiwork may seem absurd when a machine-made textile could certainly evoke the same pixelation, possibly calling to mind the material structure of the image, as well. The work of my hands, however, is to account for the body in the process of making, to account for and better understand the disparity between human and computer scales. A machine-made textile may render a visible pixel-stitch, but would not evoke the human scale of time, the duration of labour. I want these objects to have the potential to make a personal experience of work palpable for a viewer, even if that must depend on the knowledge that they were handmade.

I am trying to understand the work of computers through an experience of human labour; but I am also attempting to value human labour through a becoming computer, something that is potentially dehumanizing. Importantly, it is the appreciable human scale that enables me to do it. Only by scaling up the marks-pixels-knots, reducing the number of moves, simplifying the image, do I have a small hope of remaking the image. In valuing each knot, in giving each move a quality, I might confer an augmented value to the resultant whole.

I object to the notion that value resides solely within the product, the finished artwork. The *work* of art, meaning the labour undertaken in the process of making, offers so much in the way of understanding that

to abandon the insights of the mind at work is to lose some of the work's value. If the disparity between computer and human scales is no secret, then what is gained in making work that articulates what some might consider a known entity? Ah, but known in what way? To know the look of food, or its taste, is not necessarily to know its composition, its nutrition, its origins.

The process of making these works in crochet, both *Scribal Drift* and *Addendum Sky* (Figs. 2-1 and 2-2), offered a chance to test what is known: the disparity of scales as well as the resistance that should indicate that disparity. It is the experiential particulars that are unknown at the start which expand and multiply in ways both informative and unanticipated. The value of these examples to my research is expressed in the ways in which I 'made do', the manner in which I managed these resistances, as tactical means of accommodating the biases of a digital method of working.

In cutting a woodblock, I feel the resistance of the organic material against the honed tip of my carving tool, a resistance that grows stronger the longer I work, a resistance I manage by periodically pausing from work to sharpen the tool. The work might produce a woodblock and ultimately a print, but the process could also be seen as an exercise in dulling and sharpening, dulling and sharpening a bit of steel.

The handmade digital image is one which begins and ends with visible images; however, between these images is a process which is semi-blind to them, a process described above as dividing and counting and reading and writing, even observing bits of image in slices, but never really *seeing* the image. Because the process is bound to inform my own understanding of the work, the thing that I can grasp, a large part of the true character of this work is in the resistance I meet in the course of the semi-blind work of following instructions. I am not totally blind of eye or of mind to the thing I am making, as would be a computer, not truly knowing what it reads or writes or expresses on screen. Resistances, what Richard Sennett refers to as 'those facts that stand in the way of the will,' indicate my remove from total blindness.[84] They remind me that I am doing physical work, using my body, and that my mind is likely to tire and wander. Examples of resistance in this work occupy a sliding scale between material and psychological, ultimately illustrating the fuzziness of any alleged division between mind and hand.

A good example of this is the effort to teach myself to crochet with my left hand. To be clear, I am right-handed, not ambidextrous in the least. But the cartouche pattern I devised for *Addendum Sky* required the left-handed stitch to alternate rows with the right. The work of this self-teaching, really retraining, was more than a task in coordination. My right hand is so accustomed to lead that I found at times without consciously thinking about it, my right hand would take the work from my left in order to correct it.

My left hand is strong, but not nimble, always good at balance, a steadying force for the more finely tuned right. Left carries the tray, right passes out the drinks. Now I ask her to mimic her sister, to mirror her movements, to fold and loop and pull with efficiency and regularity. She is hesitant to oblige. She freezes unexpectedly. She moves forward when I ask her to move back. I am training her as though she were not my own body, as though she were not commanded by the same mind as the right. I must also then be training my own mind to speak to her, to achieve the desired movements and a continuous pace. She takes three times longer to perform the same task, and demands twice the concentrated instruction. But I cannot complete the pattern I conceived without her. I need to make this work.

I became at times of two minds. One had an eye on the code I was transcribing, trying desperately to move forward with some rhythm and efficiency, while the other made sure my fingers were not tangling the yarn or making backward loops. By constantly slowing and isolating basic movements, they eventually became comfortable and consistent. I found after a while that because of this slowness, I spent more time working with my left hand than my right. This caused me then to have to orient myself as consciously to right-handed work as I did for the left.

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84   Sennett, *The Craftsman*, 215.

The resistance here in the form of a divided attention, not to mention clumsy hands, highlighted assumptions I made about my body and mind. This re-training exercise challenged the presumed seamlessness of will and action with regard to my dominant side. It also led to other more easily anticipated challenges, the physical pain and bored exhaustion that is characteristic of labour in general. I am pretty sure now that the horrible wrenching neck spasms I had for ten days in the middle of this project were caused by the tight-shouldered concentration on the work of that left hand.

'Righteous pain' is how it was once described to me. For a year as an undergraduate I was an assistant to a ceramist, making him large basic forms that required a lot of lifting and wedging and careful balancing, all of which resulted in neck ache. "That there's righteous pain," he said, and I took it to mean both the honourable pains of labour done well, and that he did not want to hear me complaining.

The notions of work and virtue have been tied together for a long time. The Puritan work ethic recognizes a job done well as the outward sign of one who is predestined for salvation. Raised a Catholic, I was taught faith and good works together, that work was to be done well *in order* for a person to be saved. Competing theologies aside, I find my present attitude toward work to be shaped by an expectation to make-do in the face of adversity. Virtue always seems to resist something. Courage resists fear, generosity resists selfishness, wisdom resists the trivial. Perseverance in work resists laziness. And doubt?

Each time I do this it seems more tedious than the last. The coding process is slow. I worry that the resulting work will not reflect its source. This anxiety compounds in the face of the work to come, and will be sustained by that work. A computer does not have these worries. Conscious computing. If a computer had a conscious mind, would it seek distraction and relief from the work of computing?

To resist doubt is to conjure faith.

Counting and counting and counting. My eyes are red from staring at the screen, my wrists are chafing against the edge of the table. I am tired and bored and this is slow beyond slowness. Halfway finished and even the downhill turn doesn't come as any relief. Lots more to do.

I did not write explicitly of the blindness of this work as I went—only of the anxiety over its failure and the disappointments of having made errors in the code writing. Even when I knew there were errors in the writing, I followed the instructions. My faith was placed not so much in my ability to make a representative image, but that the outcome, not to mention the process itself, would be something of value (Fig. 32).

At 54 rounds, I am starting to think I got the math wrong. The image is not beginning to swirl with the curvature of the crochet pattern, but in the opposite direction. It is as though I overcompensated somehow. It could also just be a reflection of my poor attempt at observing the image in the first place. How could I expect the ringed scanning method for transcribing an image would recreate the image in its exact form? It could just be the nature of this process, whether or not I got the numbers right. I wonder if I will be able to tell by the time I am finished with it.

It doesn't relieve the frustration, however, with work that has to be undone, redone, rewritten and time lost. The doubt rears its head.

A pixel is square. A crochet is not. I have just had to change all my numbers as I'd coded for a grid of squares. Now I have to rewrite the whole code. I have just lost two weeks of work toward making this piece. I am feeling less open to the mysteries of hand digitization and more frustrated at my own incompetence. This could have been avoided if I'd tested the pattern before writing the code.

Worries over mistakes both made and unmade pollute my concentration.

Pulling a row and recounting and pulling the next row and recounting the one before that to find a single <u>sneaky loop was m</u>issed and two hours work lost. It's slow going now that I'm back to the middle again[85]. The

85   The cartouche shape of *Addendum Sky* was made in two halves, beginning with the widest line of stitches in the middle and tapering to the smallest.

Figure 2-10 Details of source image (left) and *Addendum Sky* work in progress showing the glitch.

long rows offer ample opportunity for a missed stitch. Since I only notice this at the end of the row, there is a greater chance for me to lose time if I am not focused on each stitch.

When I found the biggest error, I balked at changing it. I considered perhaps the nobility of the human error in the computed image, but mostly I lamented the lost work time (Fig. 2-10).

The idea that I am becoming a computer seems laughable today. No computer has to recount, to second-guess itself. If there is a mistake in the code, it is the mistake of the writer and will show in the resulting image. The computer does not self correct as it goes. It does not recognize the glitch. The glitch is only perceivable by a person who detects some visible inconsistency in the image. I am not a very good computer.

The glitch stares me in the face, reminding me I will need to amend the code and rework thirty-five rows for the piece to be complete. Somehow I managed to press B when I meant to press W and vice versa for the first quarter of a single row. I consider keeping it, a testament to the fallibility of the human in a digitization process, but then fallibility isn't really what I'm after. Glitches exist in both human and computer made items. It is the process of responding to the glitch that is important. I document the glitch and commit to its correction.

Again the response to resistance means more than the resistance itself. No place does this make itself clearer than in the most unexpected aspect of this process. In the course of grappling with distractions whirring around me at my workspace, I found that not silence, but the introduction of my own sound was the anchor I needed to maintain concentration.

Long stretches of a single colour evoke a steady rhythm.

The image of cloud interrupts the continuity of sky, the rhythm devolves to a choppy syncopation at best, but sometimes something unrecognizable as rhythm altogether when I forget a sequence, when my concentration is broken and I look between the yarn and the letters again and again.

My voice gets louder when my concentration is challenged by background noise, people speaking nearby, music, traffic outside. This concentration is unlike any other type I have experienced. It is not the concentration of drawing where I loosen my mind's grasp on what I'm drawing in order to let the vision of it flow through me and onto the paper, a loosening which allows, my mind to wander, aided by music, chatter,

other distractions. Neither is it the satisfying repetitious cutting of a woodblock where I have time to think of either the outside world or the image itself.

The reading, the counting, the rhythms and instances of patterns, the toggling between the B and the W, requires all my attention. It is an inhuman sort of concentration. Through this am I becoming a computer? A thing that computes, which means, essentially, to count. This is all a computer can do, at its most essential. It may appear to make decisions, but even its most sophisticated responses are, on some scale far beyond the human, a matter of counting out an answer. A computer cannot decide what an image means. It can only calculate it.

I began to consider the relationship of voice to the read and the written. It was the sound of my own voice that made me able to do the work of the computer and kept me aware of myself. By necessity it kept rhythm or sputtered into arrhythmic utterances, but it's ephemeral music made the brief impressions that sustained the work. It was both consciousness and conscience, the awareness and the guide.[86]

At the table.

First there is the reading voice which counts a long stretch of blue in time with the tap of fingertip on key to a four/four rhythm.

1-2-3-4   5-6-7-8   9-10-11-12   13-14-15-16

Then comes the writing voice, really a transcribing voice, which forms quiet, whistling numbers to the slower, steady pace of the fingers folding and catching yarn in a line of single crochets.

…… one…… two…… three…… four…… five…… six…… seven…… eight…… nine…… ten… eleven…… twelve… thir-teeen… four… teen… fif… teen… sikssssteeeen

The reading voice has the sound of music which implants a length of stitches conducive to short term memory.

Blue white WHITE Blue white WHITE

or

whitebluewhitewhite/bluebluewhiteblue

or in the effort to stretch the memory

blue white white blue white white white blue white white white white white

becomes

blue2 blue3 blue5

The transcribing voice is a carefully measured, hissed conversation at the pace of my fingers.

Blue 2, matter-of-factly.

Blue 3, as if presenting an alternative.

Blue… a held-breath pause as I my fingers work… *5*, a firm conclusion.

Then back it is to the code.

If I am writing a story, it is the story of an image. The plot is a spiral, widening, encircling itself. Repeating its events and gradually, consistently, altering its pattern to a rhythm of plus eight. The story of an image of return, of the mundane, of bored exhaustion, of intense concentration dangling on the weak thread of cursed distractibility.

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86   The following boxed text is taken from a performative presentation of my practice on 21 August 2013 at the Barbican Centre as a participant in *Life (Bildung),* artist showcase.

I am counting all the time. I am counting to eight, to nine, to ten, to twenty-three, to twenty-four, to sixty-seven. I am losing count, recounting, recounting again.

I am counting in colours with the rhythm and pitch of my breath. I am singing the story to myself as I transcribe.

Threes are good.

Fours are easy.

Fives are awkward and uneven.

The voices of reading and writing are necessarily aloud to add to their fullness as sense memories. Code not just seen, but heard and heard again. Loath to recount stitches, the pitch, rhythm, and relative speed of these voices insure against a misstep.

Aware of it or not, I inherit some sort of value system from this manner of envisioning an image. One purpose of doing the work of the computer at the human scale was to see how and what characteristics, what qualities inherent to the digital process, might translate into a human way of valuing and interpreting the world around me. In what ways does the digital challenge my humanity? Mock my limitations? Inspire my work? Again it is the response to the biases of the medium that points toward meaning.

Scribal Drift and *Addendum Sky*, like the *God's Eye* prints, consider the translation of a fundamentally continuous three-dimensional space into discreet, two-dimensional images composed of digitized parts. This was my initial reason for choosing images of cloud and sky; however, it was through the experience of making that I could arrive at the idea of an artwork and an understanding of how that image interacts with its own material presentation to produce meaning.

Scribal Drift, begun first but finished second, started with a naïve exploration of crocheting that produced at first an image that did not resemble its source. A second attempt produced an image as different from the first iteration as it was the source (Fig. 2-11). I produced three additional iterations of the source image because I saw that the variations resulted from my own error in coding, the writing of instructions—arguably the most human part of the computation process. I call the work *Scribal Drift* to refer to that phenomenon wherein the successive hand-tracings of handwriting result in greater and greater difference from the source. Placing the work on the floor allows me to space the iterations at successively greater distances from one another to suggest a drifting. It also emphasizes the materiality of the digital object, the physical weight and domestic familiarity of crocheted objects contrasting with the weightlessness and romance of the images' subject.

Addendum Sky was a proposed response to a particular space, a small room in a baroque refectory, the ceiling of which was covered in decorative painting of flowers, vines and other earthly flourishes. Though it does not address the same drifting phenomenon as the other work, its placement on the floor opposite the ceiling painting is also meant to acknowledge its material status, and to contrast its pixelated composition with the continuous, curling flourishes of the painting overhead.

Both automatic and manual processes for digitization involve an element of blindness on the part of the user, as the iterations of *Scribal Drift* attest. There are instructions to be carried out without deviation in order to produce an image. This asks some faith of the user, to suspend certain anxieties about the outcome of the process. In computer processes we are asked to trust the apparatus to faithfully reproduce the appearance of what is photographed or coded for. In the case of these works, I asked myself to suspend worries over the image quality of the finished work in order to carry out a lengthy process.

In addition to enabling the work, some assumptions seemingly necessary in the course of willing blindness
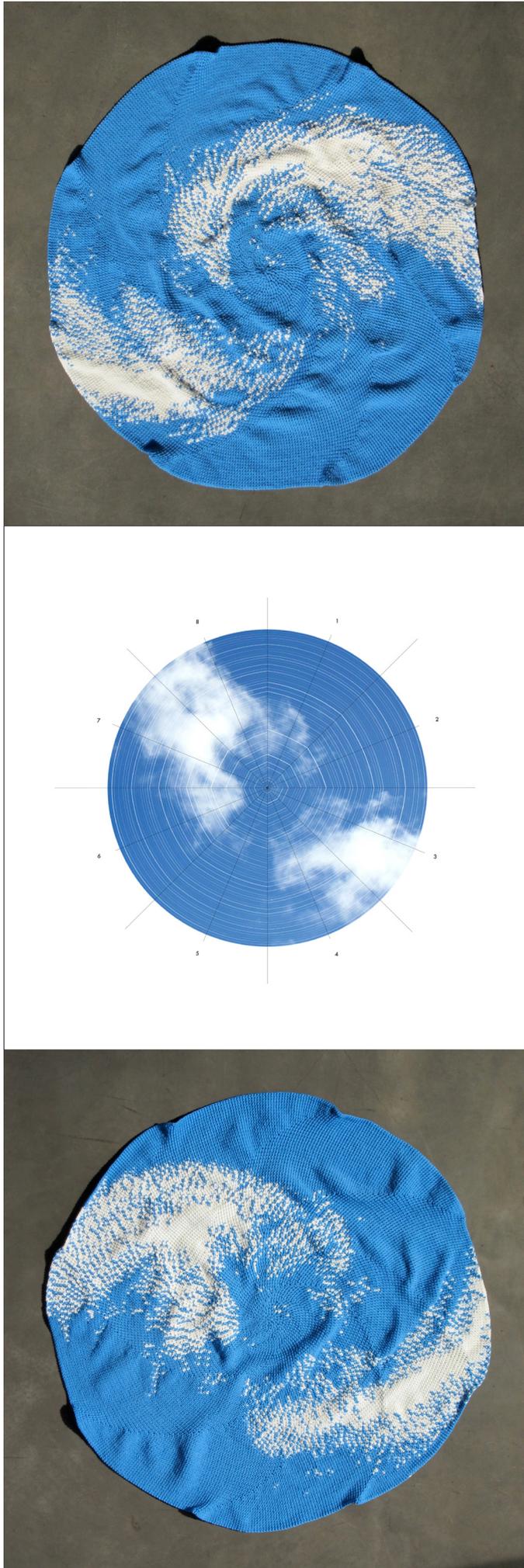
Figure 2-11 From top: *Scribal Drift*, first iteration; *Scribal Drift: Sampled Source*, 2013, digital inkjet print, 60x60cm; *Scribal Drift*, second iteration

can cause problems for the user of digital images. For example, the assumption of privacy in the production of instantaneously reproducible images with a personal networked apparatus leaves the user open to exploitation, especially considering the subtlety with which content can be transferred. On the other hand, the blindness to which I submit in manual digitization allows for a glitch in the final image that is not so instantaneously remedied. The risks in these cases could not be more different; however, the suspension of doubt is the only way to make the images.

One way of mitigating blindness is to balance it with an awareness of the nature of the processes at work. Referring to the written codes of instructions we know as computer programming, Vilem Flusser writes, 'We have to use a typographic way of thinking to get to grips with post-typographic "writing"'.[87] The 'writing', or programming, done in the computer age is not read by a person, but by a computer, an apparatus that does not make associations to additional meanings without being directed to do so. In order for people to make sense of the processes going on within the black box of the computer, they must adopt a computer-like understanding of writing.

These claims are crucial to my motivation for taking on this manual work, to see what it means to read and write the way a computer does, to treat alphanumeric symbols as code, to understand the workings of a new sort of literacy for myself, even if actually learning to write computer code is beyond the scope of this project. This is why it is also crucial that I find the places where the computer and I diverge in ways other than the expected temporospatial scale. Flusser claims that in the context of programming, familiar alphanumeric characters become solely ideographic. They 'signify no spoken sounds'.[88] How very far is the inaudible computation of an image from the work of my own eyes and hands? In my experience, through the observational digitization and hand rendering of an image, the aural proposed to return, the introduction of an unanticipated sensibility into a process of work.

In testing Flusser's suggestion, I did find something of a sense of this typographic thinking. There were times in the process when the letters 'B' and 'W' threatened to lose their phonic origins. I began to see them as images that signify one thread of yarn or another, jumping in my mind from the typographic shape to the colour and texture and manipulation of a material. This was reinforced by my counting them as opposed to reading them as parts of larger words. They would have become ideographic in the sense meant by Flusser if it had not been for the necessity of the voice to briefly implant them in my mind. Even if the sounds they signified were not the phonic 'buh' or 'wuh' of the letters themselves, or even those of the names of the letters 'bee' and 'double-yoo', they still made sound in time with the passing of my eyes and the tap of my finger on a key. They signified 'white' and 'blue', or the phonetic 'waɪt' and 'bluː', the sounds of the names of the colours they represent. They were never able to become entirely image, at least in the practical sense. In order for me to use them, I needed them to make a sound. I could not *avoid* the sound of them.

By the relationship of sound to sight to touch, and the occupation of my body at work, the value system of the digital bends to human need. Though I am accustomed to recognizing meaning in a fully envisioned image, this work implants value and meaning in each of the particles, each tiny knot, by which it is constituted. The presence of the voice as a living echo of the written code not only enables me to overcome the shortness of memory, but adds a layer of sense meaning to each small knot, differentiating it from the work of an automatic computer. By making this work, I do not simply accept the biases of digitization, but invest the process of digitization with a human bias. By manually envisioning a digitally sourced image—re-presenting it—I assign it new meaning, just as I assign each knot a colour. To hand make a digital image is to invest that image with the meaning of human labour, the impression of the body, the remembered presence of breath. It is to love a 'poor image', and to lift it from its poverty. It does not rob the 'poor image' of its value (speed) because it does not destroy or replace the digital source. It is an addendum to the file—hence *Addendum Sky*—a copy manipulated, altered and saved elsewhere, a new version outside the apparatus which has an entirely different material and expressive signature from its impoverished source.

To love an image, parts and whole, is to honour it as fully substantive. It is to appreciate it beyond its

87   Vilem Flusser, *Does Writing Have a Future?* (Minneapolis: University of Minnesota Press, 2011) 56.
88   Ibid, 61.

existence as a linear code and a pictorial space, to see it as object and duration, as well. Both images, poor source and loved copy alike, occupy a multidimensional way of being in the world. Both rely on linear code suggesting beginning and end, structured pictorial expression of this code, material instantiation, and durational coming into being. The first two of these are closely allied in terms of scale, both sensible to the human body. The second two present a challenge to a way of thinking about digital objects. It is easy to perceive the material and the three-dimensionality of a textile work. It is conceivable that the duration which produced it would be considerable and recognizable, even prohibitive to its making. It is not so easy to think about the material instantiation of the digital object. The way the written code is recorded, the physical matter that holds it in place is insensible to the eye. Likewise, the speed of the computer at work is so great as to be beyond the human ability to perceive it as a duration. This disparity in scale is not to be disregarded. It is considerable and meaningful in its own right. It does not, however, nullify that matter and time constitute the digital object as much as the textile work.

Rushkoff points out the troubling nature of the digital to reduce the complexity of the world to a series of yes/no, on/off choices, a binary simplicity echoed in the 'B' and 'W' of my own code. I adopted the simplest form possible for digital image making in order to accommodate my human limitations with regard to the speed of work. But this adoption does not mean I am forced to accept it as a way of thinking. On the contrary, 'By acknowledging the bias of the digital toward a reduction of complexity, we regain the ability to treat its simulations as models occurring in a vacuum rather than accurate depictions of our world'.[89] If anything, the physical and temporal experience of my gross reduction of cloud and sky to a series of alphanumerical characters actually strengthens my understanding of this. The handmade digital image-object is not a model of computing, but a model of *difference*, resisting the mechanical precision of automatic computation. The felt disparity between computer and human scale drives home the point that though the computer may be faster, my human comprehension of my own work is vastly more complex. It is the engagement of the body and conscious mind at work that shows me the insensible mastery of the computer. It is the multidimensional way I experience the textile work that reminds me of the basic materiality of the digital image. It is the time I spend hunched over the table, straining my neck and boring myself silly that incites wonder at the speed of the 'poor image'.

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89   Rushkoff, *Program or Be Programmed*, 62.

Chapter Three

Transparent Material: On the Affective Potency of the 'Poor Image'

'Our relationship with others is a relationship of magnitude… in a physical and physiological sense. We live with the size of the Other, of the world and places'.[90]

There is an undoing of a way of being in the world, a skewing of the proportions that anchor us in reality. Enabled by the speed of technology, 'we have reached the limits of instantaneity, the limits of human thought and time'.[91] Paul Virilio's claim suggests a shattering of the basic measuring stick of human experience for understanding 'the size of the Other, of the world and places', in other words, the human body. Thanks to technologies of speed and communication, changing temporal conceptions have destabilized the very scale which 'determines our location, our place in the space-time of the universe: what we perceive of it and what serves as a point of departure for practice, as for theoretical knowledge'.[92] In the context of the contemporary ubiquity of screenic devices, distance and scale are ambiguous abstractions. The difficulty in understanding the physical, geographical distance between people and places is compounded by a confusion of distance between the image and viewer. With the use of zooming features, scale itself becomes a fiction, while the distance between the viewer and the image—not to mention what is pictured—is confused with that between the viewer and the screen.

I would like to consider this condition in light of Kendall Walton's photographic transparency, a theory of photographic realism that when applied to digital images enables the loss of an embodied sense of proximity and presence described above. An understanding of this particular definition of transparency in relationship to the viewer's affective response may offer a more considered way of navigating the apparent scalelessness of contemporary life and image culture, and bolster the argument for material thinking with regard to digital image-objects. In this chapter, I will argue that digital images are transparent in the ways described by Walton. By observing photographic images at work in the world, in everyday life, artwork, and mass media, it is possible to discover the effects that point to photographic transparency, and subsequently, the materiality of the digital image.

Transparency, as Walton uses it and as I will in the course of this chapter, is the condition of the photograph that the viewer of a photograph experiences perceptual contact with the pictured subject. The viewer literally sees the subject, even if only indirectly (with photographic assistance) and incompletely (as the singular point of view of an apparatus at a particular moment in time). The viewer simultaneously perceives both the photograph and that which is pictured, similar to the way, 'one hears both a bell and the sound it makes', as pointed out by Walton.[93] The photograph is something that can be seen through, but is not itself invisible.

This idea comes from a tradition of theories of photographic realism, according to which, what the viewer sees in the photo is neither impression, supplement, nor reproduction, but the actual subject, made possible by the mechanical way in which a photograph comes into being, hinging on a causal relationship between the subject and viewer: 'to see something is to have visual experiences which are caused, in a certain manner, by what is seen'.[94] The subject of a photo necessarily causes its viewers' perceptual contact at the time of viewing because the appearance of this subject at the time of image capture caused automatic reactions within the camera, producing the image.[95]

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90   Paul Virilio, The Administration of Fear, 74.
91   Ibid, 33.
92   Henri Lefebvre, Rhythmanalysis (London: Continuum, 2004), 82.
93   Walton, "Transparent Pictures," 252.
94   Ibid, 261.
95   Andre Bazin, "The Ontology of the Photographic Image," *Film Quarterly* 13(4) (1960): 4-9. Bazin's ontology suggests it is in the automaticity of the camera and the causal nature of the photographic subject that guarantees the self identity of the image to that subject.

Despite having developed in the era of analogue photography, this idea can also be applied to digital photographs by means of the criteria above: automaticity, causality, and the maintenance of perceptual contact by a media object. The first of these is simplest to explain, that the digital apparatus, though increased in complexity from its predecessor, remains an automatic black box, operated from the outside and showing what-was as opposed to what the human operator thought there was. To emphasize the centrality of automaticity, Walton goes so far as to suggest other processes and apparatuses capable of producing a transparent image because of their automatic nature, including 'pictures which are drawn or painted by people but in a mechanical manner' and even an imaginary 'machine that is sensitive to light which emanates from a scene and that produces not pictures but accurate verbal descriptions of the scene'.[96] It is not a stretch, then, to say that the automatic way in which digital photographs are produced supports the possibility of digital transparency.

Causality, on the other hand, elicits objections around the veracity of any photograph, making it a more complex consideration. Even analogue photographs can be manipulated in the darkroom, to conjure a scene that has not happened, so how can digital images in their infinite mutability be trusted to show a causally presented subject? There are two ways of answering this question, one dealing with indexicality, the other with truth. The first is to address what Walton calls the independence of accuracy and transparency. Walton allows that transparency exists in degrees: 'To see something through a distorting mirror is still to see it, even if we are misled about it...The "distortions" or "inaccuracies" of photographs are no reason to deny that we see through them'.[97] If an image is manipulated, if the exposure is less than ideal, if the focus is off or if the shape of the lens somehow

Figure 3-1 *Photo Op*, 2007, Kennard-Phillipps, photomontage

distorts the appearance of subject, the mechanical way in which the photo (analogue or digital) comes into being still ensures its viewing is a looking-through. In this way, some images might be less transparent than a crisply focused and recognizable likeness, yet do remain the media for perceptual contact with their subjects. As Gunning points out, 'the indexical quality of a photograph must not be confused with its iconicity... An index need not (and frequently does not) resemble the thing it represents'.[98]

This independence also covers examples of cut-and-paste Photoshopping, just as it would a darkroom photo construction. The raw images are there, if only in part, and the inaccuracy (in terms of 'what-was') of the scene presented does not diminish the potentially multiple indexical links present. Peter Kennard and Cat Phillipps's photomontage, 'Photo Op' (Fig. 3-1) may not be indexical to a single event, certainly Tony Blair did not take a smiling selfie in front of a burning oil field; however, the photographic transparency of the individual components of the image make their combination a different kind of statement than if Tony Blair's photographic image had been collaged onto a painting of a burning oil field. Tony Blair did in fact take a self-assured photograph of himself, and oil fields did burn. The viewer is faced with both in a way that is unique to photographic images, regardless of their analogue or digital signature.

The second way of responding to objections to causality is to say that truth is not the function of photography in the first place, but a claim made for it, often with a particular agenda attached. Kathy Marmor suggests,

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96   Walton, "Transparent Pictures," 267, 270-273. Walton goes back and forth on this last example. He first argues the printed description could not be transparent 'to look at', but later considers that if in fact readers were naturalized to such a means of 'seeing', such descriptions could be transparent. It is a hypothetical example used to examine what constitutes perception.

97   Ibid, 258.

98   Tom Gunning, "What's the Point of an Index? or Faking Photographs," Nordicom Review 25(1/2) (2004): 40.

'The notion that transparency give rise to a discernible object or fact… is a cognitive construct that instructs one how to see'.[99] This sort of misunderstanding of transparency is a potentially dangerous, even 'policing' use of photography, as Cadava refers to it.[100] Photographs, even verifiably accurate ones, are gloriously incomplete evidences, susceptible to fictionalization by juxtaposition with text, other images, and of course individual human interpretation. As Ranciere says in respect to documentary film, 'The real must be fictionalized in order to be thought'.[101] The real is not entirely dependent on the true, at least where human understanding is concerned.[102] On top of this, as Gunning points out, the very suspicions harboured toward the veracity of digital photographs, as well as the very practice of faking them, is dependent on the belief that such images have the potential to be honest depictions in the first place.[103] The question of causality in either digital or analogue photographs can be no better settled by an expectation for truth, than by the expectation for falsehood. This is just not its domain.

The last criterion for the transparency of photography, the maintenance of perceptual contact through photographic mediation, is what gives the viewer the impression of intimacy or identification with the pictured subjects. It is the experience of seeing someone suffering, albeit indirectly, as opposed to seeing the representation of suffering. Up to this point, my focus has been more or less on indexicality as it relates to credibility, a trait important to photographic ontology, but which, as Gunning observes, is ultimately insufficient to encapsulate its value.[104] Perceptual contact, on the other hand, *depends* on indexicality, but is itself more than indexicality. The material process of the photograph makes it indexical, but it is the embodied perception of its results, a kind of participation in the image, that makes the photograph transparent. By the empathy it engenders, perceptual contact is an opening to possibilities that asks to be evidenced by its effects in the world. So long as digital images can be understood as automatically produced indices of their pictured subjects, they are potential conduits for this perceptual contact to take place, as will be seen in examples provided later in this chapter.

It is wondered what precisely Bazin meant by 'the irrational power of photography to bear away our faith'.[105] This is the challenge, that such an opening is an ambiguous one. With regard to such irrationality as the human longing for contact and the consequences thereof, this research is better suited to its observation in the world than an attempted explanation. In order to speak further of perceptual contact, I must consider the way photographs affect viewers—the underlying subject of this essay.

The reconsideration of photographic realism, here through the theory of photographic transparency, offers a return to material thinking as much as to the subject of desire: 'The materiality of the image cannot be avoided; it is crucial to how we think about the aesthetic possibilities, circulation, affective register, and so on of images of any sort'.[106] Considering its contemporary materiality, I agree with Kessler that digitalization '[provokes] a return of the repressed, namely a renewed awareness of the numerous forms of manipulation and intervention that constitute the very activity of producing and presenting [] pictures'.[107] Thinking again of the Kennard and Phillips work, the way a viewer interprets the combination of the images of Blair and the oil fields relies on the transparency of their digital sources—the contact that suggests that such

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99   Marmor, "Bird Watching," 319.

100   Eduardo Cadava and Paola Cortés-Rocca, "Notes on Love and Photography," October 116 (2006): 17. 'the confidence that what we call the referent or subject of and image is an entity that is stable and identical to itself, a full presence that exists before the representation that stands in front of the photographic apparatus and of which the camera (or language) gives us a "faithful" or "true" representation, corresponds not to a characteristic proper to photography, but to a policing use of photographic technology'.

101   Jacques Ranciere, The Politics of Aesthetics (London: Continuum, 2000), 38.

102   John Roberts, "Photography After the Photograph: Event, Archive, and the Non-Symbolic," Oxford Art Journal 32(2) (2009): 286. This is echoed by Roberts's lament that 'one of the political consequences of the critique of photographic truth is that it has allowed an unfortunate conflation of realism and documentary with the non-symbolic'.

103   Gunning, "What's the Point," 42.

104   Ibid, 46. Gunning writes on the insufficiency of the index: 'whereas signs reduce their reference to a signification, I would claim the photograph opens up a passageway to its subject, not as a signification but as a world, multiple and complex'.

105   Bazin, "Ontology," 8.

106   Daniel Morgan, "Rethinking Bazin: Ontology and Realist Aesthetics," Critical Inquiry 32(3) (2006): 444.

107   Frank Kessler, "What you get is what you see: Digital images and the claim on the real," in Digital Material, ed. Marianne van den Boomen (Amsterdam: University of Amsterdam, 2009), 190.

instances happened—but is compounded with a host of other issues by the obvious way in which it was digitally composited. Technical aspects of photography have changed significantly in accordance with new technologies of storage, manipulation and dissemination. Though the mediation that happens as a result of code or cables, invisible wireless connections, or image compression may deplete illusion to some degree, it does not do away with transparency. In fact, I would argue that images whose presentation is less slickly executed, including such digital objects as those described by Hito Steyerl as 'poor images', which challenge a quality-based hierarchy of images, reinforce the human desire for this more fundamental aspect of transparency: contact.[108]

The primacy of contact in everyday life supports the idea that contact, and not illusionistic accuracy, is the thing for which the photograph is predisposed and most cherished. The continuous progress of ever-finite improvements to technologies of speed and communication stand as evidence of a human desire for such, despite the emergence of a state similar to what de Vries calls

> 'the communication paradox…when, for whatever reason, the times and places at which people can be contacted are extended to all possible environments, and those contacts become more frequent, a tension arises between on the one hand the desire and expectancy for immediate and unlimited access to others, and on the other hand the need to filter out and restrict incoming access requests in increasingly variable circumstances'.[109]

The constant need for reassurance in the form of messages, status updates, image sharing points to a desperate desire to connect with and be acknowledged by others. Rushkoff sums it up, saying that 'each new communications technology provides a new excuse to forge connections. The content is not the message, the contact is. The ping itself'.[110] In the end, all images shared in this way, whether personal, political, or seemingly arbitrary, have a similar effect.

Hito Steyerl's 'poor image' offers improvements to contact at the price of the historic aura, not to mention the illusionistic accuracy described above. She describes this kind of image as 'a copy in motion', an image which is primed for further manipulation by its users, and lives outside 'the class society of images' that values sharpness and resolution. Being poor in appearance, these images' value is 'defined by velocity, intensity, and spread. 'Poor images' are poor because they are heavily compressed and travel quickly. They lose matter and gain speed'.[111] They have no slick veneer, no high dynamic range. They are pixelated images which show the scars of their travels, fibre-optic windburn.

The effect of this de-materialization, the compression of 'quality' images into poor copies, is that it 'transforms quality into accessibility, exhibition value into cult value'.[112] This can be seen in the dissemination

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108   Jay David Bolter and Richard Grusin, Remediation: Understanding New Media (Cambridge: The MIT Press, 2000), 6. This desire for contact that I describe is similar to what Bolter and Grusin recognize as the desire for 'transparent immediacy', the logic of which 'dictates that the medium itself should disappear and leave us in the presence of the thing represented'. The quality-based hierarchy of images referenced above is the result of the progressive technological refinement of image-quality motivated by such a desire.

I refrain from addressing Bolter and Grusin's closely related immediacy and hypermediacy in the text above because it could shift the focus of this argument away from the physicality of the medium by confusing my use of the word 'transparency' with theirs. Walton's transparency is predicated on the materiality of the photograph, and assumes the recognition its physical presence for the viewer. He also makes the distinction between the physical presence of the pictured subject, which is not achievable, and a one-way perceptual contact with the subject, which is.

There are other relevant points of crossover between Bolter and Grusin's account of remediation and Walton's transparency. In the example of the Kennard-Phillips work described above, Walton would describe the interaction of combining two photographic images as photographic transparency of a lesser degree, while Bolter and Grusin might describe it as the interaction of immediacy and hypermediacy in the remediation of images.

109   Imar de Vries, "The vanishing points of mobile communication," in Digital Material, ed. Marianne van den Boomen (Amsterdam: University of Amsterdam, 2009), 84.

110   Rushkoff, Program or Be Programmed, 105.

111   Steyerl, The Wicked of the Screen, 38, 41.

112   Ibid, 32.

of previously marginalized or forgotten cultural content on the web, or the explosion of internet detritus—Steyerl calls YouTube 'a pile of stuff'.[113] De-materialization is not, however, the whole story. When a high quality image is 'saved' in a compressed form, then indeed, it is dematerialized to a degree, enacting a material subtraction as it shrinks in file size. If, however, high a quality image is 'saved as' in a compressed form, under a different name or file type, or in a new location, becoming a de-materialized version of the original, it is also a re-materialization, constituting the *addition* of a new digital object to the program of images, not a subtraction.[114] These de- and re-materialized images introduce their own economy with an 'ethics of remix and appropriation', speed and spread, and the transformation of the end user: 'While [the network] enables the users' active participation in the creation and distribution of content, it also drafts them into production. Users become the editors, critics, translators, and (co)authors of poor images'.[115] This alternative economy of images provokes a revaluing of the image, and as de Mul suggests, an opening for the return of the aura 'now no longer located in the history of the work, but in its virtuality, that is: the intangible totality of possible recombinations'.[116] Steyerl suggests a similar return of the aura, 'no longer based on the permanence of the "original", but on the transience of the copy'.[117]

These images challenge expectations in their refusal to value fineness of information over sustained affective reach. Because their motivations can often be found to lie outside the capitalist infrastructure which enables them, they need not serve corporate aesthetic standards of design and image quality. They could be the perfect candidate for the tactical image in 21st century everyday life, as 'the micro-event [tactical production] travels along the same media vectors as the mainstream [strategic] event itself, displacing the event's terms in its travels'.[118] The irony is in the reciprocity that, motivations aside, by their re-materialization, their contribution to the program of images, they in no small part help to *constitute* that infrastructure, so may also be the sort of convenient technological instrument whose easy manipulability and political potency enables a widening of scope and tightening of grip of government and corporate bodies over populations. This is the frightening compromise of contemporary visibility as seen by Galloway and Thacker: 'the double-sided nature of networks in the control society, at once producing new forms of domination, while also creating new openings'.[119] Tactics in the digital realm must repurpose the strategically inscribed infrastructure of the network in order to question the authority which maintains it. These tactics utilize, and because of the nature of digital networks, come to constitute in part the infrastructure itself.[120] Trade in 'poor images' is irresistible in all senses of the word.

'values alter facts…The moment we love an image, it cannot remain the copy of a fact'.[121]

'Poor images' are images that would seem to resist photographic realism; however, because they are so small, so easily passed from hand to hand, they are magnificently disposed to a kind of always-on connection, the extension of one time and space to another, the maintenance of contact that has become a common feature of everyday life in the West. A 'poor image' does so by offering an approximation of the recognizable in real time instead of a detailed depiction or considered description post event. Perhaps a Skype video

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113   Ibid, 36.
114   This logic of re-materialization as an additive gesture applies really to any copied image, rich or poor. What is important to stress here, however, is the difference between de-materialization as subtractive and re-materialization as additive.
115   Steyerl, The Wicked of the Screen, 40.
116   de Mul, "The work of Art," 103. de Mul sees this loss of aura and its eventual return in the replacement of exhibition value with 'manipulation value' […] 'in those cases where the user is enabled to change the contents of the database and to insert new elements in the database, each query becomes a unique recombination. And as a conse-quence, the digitally recombined work of art regains something of its ritual dimension. It becomes an interface between the sensible and the supersensible again, now no longer located in the history of the work, but in its virtuality, that is: the intangible totality of possible recombinations'.
117   Steyerl, The Wicked of the Screen, 42.
118   Wendy Hui Kyong Chun, "The Enduring Ephemeral, or the Future is Memory," *Critical Inquiry* 35(1) (2008): 152. Chun paraphrases Wark on the tactical use of digital media.
119   Alexander Galloway and Eugene Thacker, "Protocol, Control, and Networks," Grey Room 17 (2004): 21.
120   Ibid, 25.
121   Bachelard, The Poetics of Space, 100.
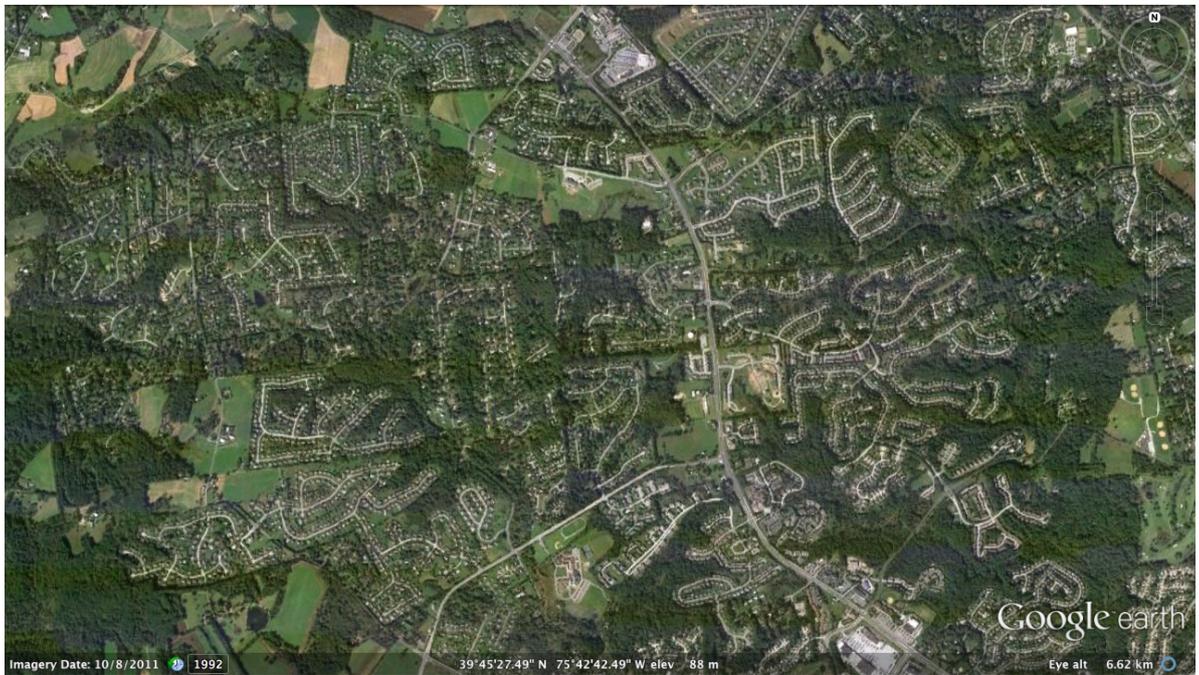
Figure 3-2 A view of the Pike Creek Valley, Delaware, USA, as it appears in Google Earth

chat is just a shadow of a face-to-face conversation with my mother, but the pixelated movements and the occasional frozen image do not preclude the fulfilment of an emotional need between loved ones.

As we reach 'the limits of instantaneity' in communication, there is a loss of an appreciation of distances that can be understandably linked to human desires for contact, comfort, validation. After all, one value of the 'poor image' for me is that I manage to see through it, to see places I also am not, to commune with loved ones who are far beyond the reach of my arms. The development of technologies of speed, whether transportation or communication, mobility or reproducibility, and certainly photography as stated by Amelia Jones, results from a desire 'to render up the body and thereby the self in its fullness and truth'.[122] This is not a desire for imaginary encounters, but for sustained connection with others across time and space. The effectiveness of the 'poor image' to provide this affective connection is what proves its transparency despite its rough material expression. In doing so, however, it may also replace one sort of anxiety with another: 'by seeking reassurance through radical connectedness, another type of anxiety is created, one that stems from simultaneously being connected to someone far away and knowing that the distance cannot be bridged physically... when related to an emergency, the state of being "distant but present" can instil overwhelming feelings of isolation and powerlessness'.[123] It is what Cadava calls 'the madness of the photograph'— though I would extend it here to other photographic media including live video conversations—that 'we simultaneously experience the absence of the "observed subject" and the fact of its "having-been-there," the relation between life and death, between testimony and its impossibility, between the self and the other, and among the past, present and future'.[124] These sorts of encounters and the anxieties they produce are what move me, and possibly some of the others who I will discuss, to work with the digital image as means of investigating the viewer's often conflicted relationship to what is pictured, how values indeed alter facts, and how the affective register of a image shapes meaning.

To begin with my own habits, I have earlier admitted a more than passing interest in Google Earth as a means to make contact with the places I have spent my life. Probably motivated by feelings of longing for the familiar as I have spent the last several years in a country other than my own, I look at aerial and satellite images of my former homes in a spirit of reverie. I recognize a strangeness in their appearance I have mentioned before, an interruption to the longed-for familiarity. It has something to do with the saturated swathes of green, green grass, broken by the reticulated patterns of streets in the planned communities of my childhood as seen from this inhuman perspective (Fig. 3-2). The word and image work, 'The Fiction of

122   Amelia Jones, "Decorporealization," in Sensorium: Embodied Experience, Technology, and Contemporary Art, ed. Caroline A. Jones (Cambridge: MIT Press, 2006), 133-134.
123   de Vries, "Vanishing points," 90.
124   Cadava, "Notes on Love and Photography," 5.

the Nest', (see Appendix 1) was in part an exercise in getting to grips with some such images and what they tell me about myself, how I look to them to 'render up [my] body and thereby [my]self'.[125] The madeness, the aestheticization of corporate surveillance mingle here with personal narrative context. These images' informativity pales for me in comparison to their affective register. Michel de Certeau reminds us that human communities seen from such vantages are poor indications of practiced reality, anyway.[126] No, they do not even *look* like my home as I see it when I am *at* home. But they *are* that home, and the perceptual contact they provide undoes a degree of the alienation their odd appearance might engender, pixelated utopia

Figure 3-3 Still from *Thanatophobia,* 2014, digital projection

that it might seem.My work with cloud images found in Google Street View was an offshoot of this sort of daydreaming activity. Looking at the sky through this algorithmic lens made me recognize the oddness in my use of this technology. The clouds in the sky, things which constantly change, are rendered fixed in pixels for no reason other than to complete the illusion of a total world in GSV. Romantic notions of the natural world, Constable paintings, Emerson and Thoreau, animism, my own enviousness at the flight of birds, my fears around air travel, all come rushing to mind with a look at the blue and white passing overhead. The gif projections that are my most recent work to date are my way of reflecting on an algorithmic dream of flight, a representation of desire, anticipation, and ultimately dissatisfaction, the continuous cycle of immersion into and interruption of perceptual contact with the untouchable space of flight (Fig. 3-3). For me, the rough pixilation and jerkiness of the image are means of expressing the conflict of desire and the photographic. The poorness of the image makes me know the strength of that desire all the more.

Just as sentimentally perused images of friends and home bear an intensification beyond their informative aspect, so do presumably very different sorts of images. Those nightmarish depictions of distant places, war zones, famine, natural disaster, exhibit that same inclination for values to alter facts as a result of their transparency. Even in cases of disbelief or doubt in images of atrocity—images of gassing victims in Syria, for example[127]—the affective register of photographic depictions of human suffering can impel viewers to action. When in 2013, chemical weapons were deployed in the al-Ghouti district of Damascus, responsibility was denied by the Syrian government. Though the U.S. and British intelligence were aware of other recent use of chemical weapons by Syria against the rebels, Western military action was only threatened after the circulation of images of human suffering and subsequent outcry.

125   Jones, "Decorporealization," 133. Amelia Jones's quote with my alterations.
126   de Certeau, The Practice of Everyday Life, 93. 'The panorama-city is a "theoretical" (that is, visual) simulacrum, in short a picture whose condition of possibility is an oblivion and a misunderstanding of practices'.
127   Joby Warrick, "More than 1,400 killed in Syrian chemical weapons attack, U.S. says," The Washington Post, August 30, 2013, accessed September 10, 2014, http://www.washingtonpost.com/world/national-security/nearly-1500-killed-in-syrian-chemical-weapons-attack-us-says/2013/08/30/b2864662-1196-11e3-85b6-d27422650fd5_story.html

Photographic images of violence affect us differently than their verbal description. The transparency of the photograph, the contact the viewer makes with an image of violence, engenders feelings of personal vulnerability, thus empathy. Cheryl Pagurek's video *Growing Pains* problematizes the distance between the Western viewer and foreign conflict, juxtaposing imagery of a lush suburban garden with night vision views of military targets in what looks to be a desert, presumably the Middle East (Fig. 3-4).[128] With domestic garden views caught in the crosshairs and butted up against images of war, Pagurek links questions of comfort, cultivation, and control in domestic life to what might be presumed to be furthest from it, the reality of the use of surveillant technology in the military violence which is purported to protect and ensure that comfort.[129] Camera angles in the garden scene and the softness of an overheard telephone conversation imply an encroachment on privacy. A sense of domestic eavesdropping turns sinister with the punctuation of an exploding building. The green and black static of the nightvision images make the spectacle more real, less likely to have been staged because they bear no conscientious aesthetic. They are just informative enough to render a direct hit. Knowing the appearance of the image is dictated by its usefulness to violence, knowing this is how the person 'pushing the button' saw the house in the moment before its destruction, I feel I see the target and its demise more clearly in this 'poor image' than if it were recorded in the light of day. I am slack-jawed and wide-eyed, thinking, *There were people in that building who are now dead.* And I am also implicated.
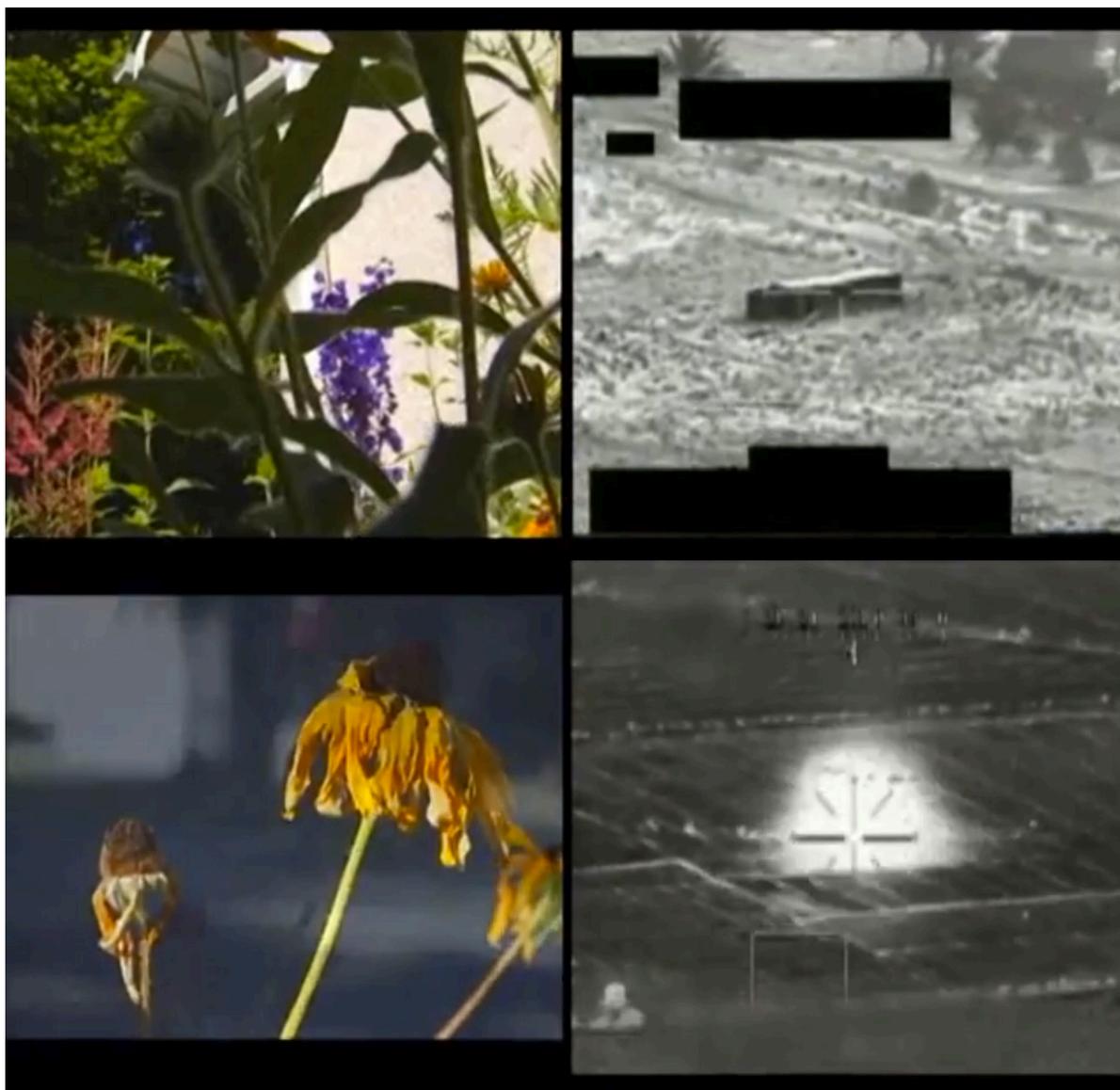
Figure 3-4 Stills from *Growing Pains*, 2009, Cheryl Pagurek, digital video projection

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128   Cheryl Pagurek, "Growing Pains," accessed September 10, 2014, http://cherylpagurek.com/works/growing-pains-and-high-value-targets-2009/

129   Judith Parker, "Surveillance in Suburbia" *Afterimage*, 37 (6), (2010), 28.

Thomas Hirschhorn's video work, *Touching Reality*, shows a pair of white hands holding an iPad and 'swiping' through a series of images of grotesquely maimed and mutilated, non-white, human bodies (Fig. 3-5). Here the images are the aftermath of violence, many or possibly most of the figures are of the dead. The images themselves are powerful enough to provoke both disgust and empathy, but the way in which they are cursorily scanned and dismissed with the flick of a finger suggests something of the relationship of such images to the media that delivers them. Is ownership of the personal digital device a permission to privately observe and dismiss the pain of others? The continuous motions of hand and screen, the steady interruption of one atrocity with another, prevents thoughtful consideration of each image, suggesting the generalization of the victims by the person holding the device, but also effecting a visceral, repetitive shock in the video's viewer.

Figure 3-5 *Touching Reality*, 2012, Thomas Hirschhorn, video, silent; source: http://bnlmtl2014.org; photo: Romain Lopez

Writing about this work, Chris Wiley calls it 'a metaphor for our own state of digitized distraction and desensitization, providing a holistic dissection of a particularly fraught aspect of contemporary image politics'.[130] In looking at images such as those in Hirschhorn's video, I feel a certain guilt. It is the same kind of feeling that outdoes my morbid curiosity and prevents me from looking at videos of beheadings and the like. To look at images of the dead—not people who died some time after the photo was taken, but actual dead bodies—exemplifies the one-sidedness of the power relationship between the causal subject of the photograph and the viewer.[131] It is the viewer who makes contact, who chooses when to look and how. This is only reinforced by the use of race and class in the work, implied by the aforementioned racial profiles and the use of a costly technology that is a specifically personal.

In Rabih Mroue's performance lecture, 'The Pixelated Revolution', and its accompanying prints and video work, the artist focuses on a particular aspect of current military conflict that suggests to me the intensity of photographic transparency: video and photographs of violence taken by the very victims of that violence

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130   Chris Wiley, "Picking Up the Pieces," Aperture, August 2, 2013, accessed September 10, 2014, http://www.aperture.org/blog/picking-up-the-pieces/

131   Thomas Hirschhorn, *Critical Laboratory: The Writings of Thomas Hirschhorn* (Cambridge: MIT Press, 2013), 103-104. Hirschhorn advocates the practice of looking at dead bodies in the brief essay, "Why Is It Important Today—To Show and Looking at Images of Destroyed Human Bodies?" One reason he offers for doing so is that looking at these images forces viewers to confront their own possible contribution to violence. He sees the 'rhetoric of sensitivity' that people use to avoid looking at these images, 'is about keeping one's comfort, calm and luxury'.

(Fig. 3-6). If 'Photography is violent [because] *it fills the sight by force*', then never was an example so literal as the subjects of Mroue's contemplation.[132] A mobile phone-quality video clip spans the final seconds of the cameraman's life, as he scans a scene, resting upon the moving image of a masked sniper pointing his rifle directly at him. A shot is heard and a jostled image is followed by a steady one of what looks to be concrete flooring, indicating the phone has been dropped by the shooting victim.

'We are shooting our own deaths,' is a suggestion from Moue to his audience. But who is this 'we'? I assume at first it refers to those filming the conflict. In truth, though, as we—everyday users of contemporary communication technology—pass images from one to another, we remake the image, it is indeed copied each time it is downloaded and viewed again. Each viewer of these video clips participates in the production of—if transparency is to be accepted—a filmicly mirrored perpetuation of violence: the 'double shooting' of camera into barrel and barrel into camera, Death's own face doubly masked by a balaclava and the stubborn finitude of the pixels that constitute its image. No attempt to enlarge the still yields any further knowledge of the shooter.
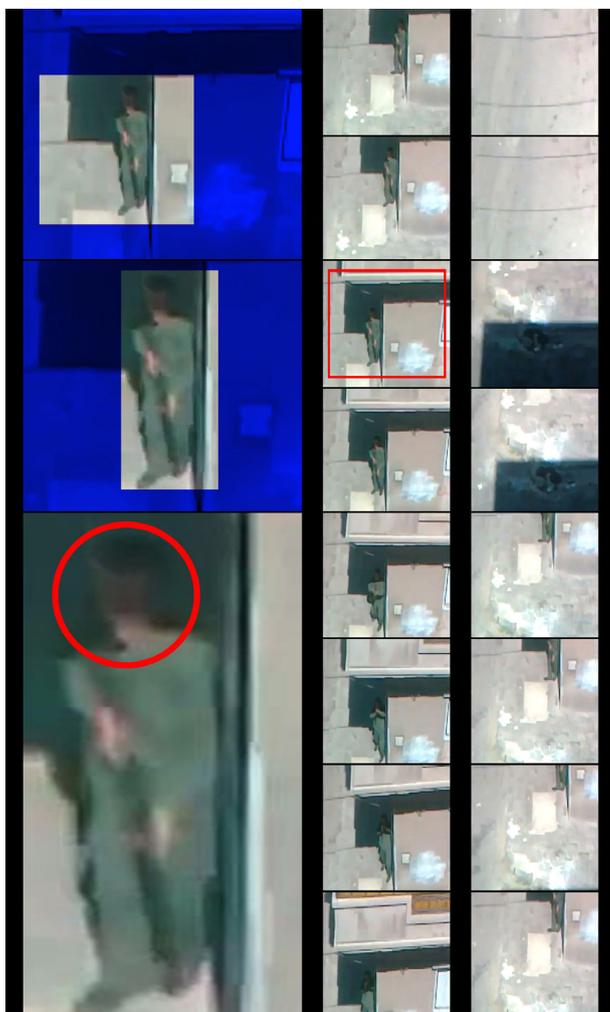
Figure 3-6 Projection detail from *The Pixelated Revolution,* 2012, Rabih Mroue, performance lecture

The effect on the viewer is arresting—the work provokes some ethical concern over the use of anonymous individuals' last moments for the purpose of making art. I wonder if the really disturbing thing here, however, is the reversal of the power relationship I observe to be the subject of the Hirschhorn work. Rather than empathizing with a powerless, causal subject of an image, I occupy in this case, the point of view of the cameraman whose body I never see. The gun is also pointed at my face.

This is the strength of the work, that it discovers an instance wherein the presumed conditions of the photograph reverse themselves, revealing misunderstanding or mistaken assumptions. But this would not be the case if it were not for the transparency of that photographic image, the way in which an intensity of affect relies upon, yet supersedes indexicality in making meaning from an image.

Though their content is certainly foreign to a Western viewer with no experience of a war zone, the credibility of the images in Mroue's performance is bolstered by a naturalized way of understanding mobile phone photography and video that assumes such images to be 'samples extracted from the continuous flow of visual experience'.[133] Another example of such naturalization in the service of the production of affect (and what Virilio calls the administration of fear) is much closer to home. In the case of CCTV cameras and screens in public places, the ubiquity and acceptance of surveillance is actually maintained by the exploitation of its photographic transparency and by virtue of its temporal indexicality.[134] Because, as Mitchell reminds us,

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132   Barthes, Camera Lucida, 91. Barthes is speaking here about the quality of photographs to block or counter memories, to insist upon itself as the document of the event. Here the photograph—though it clearly does show violence—commits another violence by replacing the death of a person with the image of his killer.

133   Mitchell, "Networked Eyes," 178.

134   Thomas Y. Levin, "Surveillant," in Sensorium: Embodied Experience, Technology, and Contemporary Art, ed. Caroline A. Jones (Cambridge: MIT Press, 2006), 215. 'temporal indexicality, an image whose truth is supposedly "guaranteed" by the fact that it is happening in so-called real time and thus—by virtue of its technical (and fundamentally surveillant) conditions of production—is supposedly not susceptible to post-production'.

'Sequences of frames produced by surveillance cameras…are even further displaced from the photographic tradition of witnessed decisive moments at "full frame"' than are mobile phone photos, they are understood as being without agenda, an objective record kept for the good of the people.[135] Transparency, however, does not preclude agenda. It can operate as a visual rhetorical device, promoting the agendas of its users by how such images are published.

After the London Riots of 2011, in an effort to show intolerance to the violence, the prime minister assured Parliament,

> 'We are making technology work for us, by capturing the images of the perpetrators on CCTV – so even if they haven't yet been arrested, their faces are known and they will not escape the law. And as I said yesterday, no phoney human rights concerns about publishing these photographs will get in the way of bringing these criminals to justice. Anyone charged with violent disorder and other serious offences should expect to be remanded in custody not let back on the streets and anyone convicted should expect to go to jail'.[136]

Such 'phony human rights concerns' clearly did not have a chance, as before the riots ended—and before Cameron had given this speech—CCTV images of hundreds of suspected perpetrators were published not only by the Metropolitan Police, but by several newspapers including the Telegraph which still hosts the images on its website.[137] The weekend after the rioting, I remember finding a discarded paper on the seat of a Piccadilly line train, every page of which was framed with the images of suspected perpetrators. The images were presented as aiding the police in identifying guilty persons. It is not to be overlooked, however, that such publication encompasses a process of public shaming of hundreds of individual citizens who had not yet been proven guilty in a court of law, let alone arrested. The familiarity of CCTV image quality to Londoners—citizens of the most heavily surveilled city in the world—likely imbued the pictures with a sense of objective proof at a time when the grief-stricken and angry populace was already primed to make accusation. The sheer volume of images published, coupled with the terrible quality of the images—many of which were clearly beyond the point of individual recognition—indicates their role in a program of visibility and control by the strategically implied truth claim of photography.

It is clear that CCTV images are not alone in contributing to this control. The personal and the public are now inextricably intermingled through online social networks, search engines, and corporate retail giants that earn their daily bread turning individuals into marketing demographics, while any voices of dissent utilize and thus support infrastructures maintained by the objects of their criticism. The ease and convenience of doing business online, and the Pavlovian compulsion to 'check-in' with innumerable others, combine to maintain the always-on everyday life of the 21st century.

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135   Mitchell, "Networked Eyes," 178.

136   David Cameron, "David Cameron riot statement in full," Politics.co.uk, August 11, 2011, accessed September 10, 2014, http://www.politics.co.uk/comment-analysis/2011/08/11/david-cameron-riot-statement-in-full

137   "England Riots: Police release first CCTV suspect images," BBC News, August 11, 2011, accessed September 10, 2014, http://www.bbc.co.uk/news/uk-england-london-14462271.The Metropolitan police's full CCTV image roster has been removed. The BBC reported on 9 August that police had begun posting CCTV images in hopes of identifying suspects.

"London and England riots: CCTV pictures of suspects are released by police," The Telegraph, accessed September 10, 2014, http://www.telegraph.co.uk/news/picturegalleries/uknews/8690951/London-riots-CCTV-pictures-of-suspects-are-released-by-the-Metropolitan-Police.html?image=9. The Telegraph continues to host a picture gallery of suspected rioters.

"Shop a Moron: Name and Shame a Rioter," Shop a Moron | The Sun | News, August 10, 2011, accessed September 10, 2014, http://www.thesun.co.uk/sol/homepage/news/3742163/Do-you-know-a-riot-yob.html.

On Wednesday, August 10, the Sun featured similar images with the headline "Shop a Moron: Name and Shame Rioters".

Anna Edwards, "Could you shop a looter?" Mail Online, August, 14, 2011, accessed September 10, 2014, http://www.dailymail.co.uk/news/article-2025639/London-riots-2011-Scotland-Yard-issue-huge-montage-new-riot-suspect-images.html. The Daily Mail featured a similar headline.

The technologies that enable these conditions bring about the rise of global affect, a phenomenon that by the affective of potency of the 'poor image' as a central form of communication, proves the transparency of the digital photographic. In *The Administration of Fear,* Paul Virilio points to an 'informational' bomb that renders people susceptible to group-think on a global scale. As isolated events across the planet are recorded and shared over the network, a synchronization of emotions takes place, creating what Virilio calls a democracy of emotion in place of a democracy of opinion.[138] Similar to Vries's 'communication paradox', the same felt co-presence that reassures users of 'poor images', also leads to a new feeling of emergency. New technologies which mimic or replace the telephony of the previous century, the ready to hand e mail, text and image messaging, social media and video chat, shrink distance in a way that for a moment feels very good, validating, and reassuring, while also making users susceptible to paralyzing simultaneous fears of stock market crisis and natural catastrophe. Things that are spatially far are made in some cases to seem close, dear, and changeable, and at other times overwhelming, unstoppable and personally threatening.

What we are dealing with here is the recent acquisition of instantaneity by an image technology that was already transparent. The arrival at instantaneity challenges our ability to differentiate between the perceptual contact of technologically aided communication and the direct contact of unmediated, embodied experience. The knowledge of how an image came to be is less present to mind at the speed of the instant, and so the contact of transparency is confused on some level with presence. If we cannot differentiate, or to go further, if there is no differentiation to be made, then the world might as well be turned upside down or inside out.

This new enmeshing of transparency, instantaneity and affect through the photographic image contributes to the new confusion in a way similar to what Henri Lefebvre says of synchronization via the television screen, 'Simultaneity… masks time… the diversity of places, rhythms, therefore of countries and peoples'.[139] At moments when our means of communication changes, so do our ways of conceptualizing our relationships, 'When images supplant texts, we experience, perceive, and value the world and ourselves differently… in a two-dimensional way, as surface, context, scene. Our behaviour changes: it is no longer dramatic but embedded in fields of relationships'.[140] On the one hand, a sense of the particularities of places and cultures can be obscured, as people around the world sit rapt with empathy before their computer screens. (This is not entirely a bad thing). On the other, the sense of creeping cultural solubility ignites fears over perceived potential losses. With immersion into the 'universe of technical images', as Flusser would have it, and the loss of the richness of particularity, we might also lose the designation of spaces and places, private and public, forums for protest, and safe havens for the happy, invisible practicing of everyday life. At the same time the sense of our own size in relation to the world changes and swells with the speed of connectivity, that currency by which we measure both desire and satisfaction.

To return to purpose, this self-initiated, digital quagmire of visibility and control can only be possible if digital photographs are understood to be transparent. It is the ability of the photograph to 'bear away our faith', the something extra that liberates the photographic from bland factuality, that makes it greater than fact and more than information. This is the perceptual contact with an actuality torn from its original context and available for affective processing by a viewer who recognizes the automatic way in which the image came to be. The recognition of that contact is evidenced by the continued desire for it in spite of the communication paradox, the importance of sentiment over the informative, the staggering recognition of the self in the 'poor images' of both violent perpetrator and suffering other, the exploitation of the naturalized surveillant image, and the rise of global affect through both mass and social media. The photographic image, digital and otherwise, is a material image. Without the material process of causal subject, light, and substrate, without its material capacity within the digital-material flows of culture, it would be a dull and powerless abstraction without the capacity to contribute to such evidence. The experience of living in a world full of such images teaches me this cannot be the case.

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138   Virilio, The Administration of Fear, 30. 'This bomb comes from instantaneous means of communication and in particular the transmission of information. It plays a prominent role in establish fear as a global environment, because it allows the synchronization of emotion on a global scale. Because of the absolute speed of electromagnetic waves, the same feeling of terror can be felt in all corners of the world at the same time'.

139   Lefebvre, Rhythmanalysis, 81.

140   Flusser, Into the Universe, 5.

Chapter Four

Waking Ouroboros[141]

My attempts to get closer to the material of the digital image began with a wander into the territory of the image's subject, wanting to make contact with those pictured distances I so desired. I drew closer to the lived spaces of my life with a succession of clicks, or so I then felt. What does it really mean to zoom? The onomatopoeia of a comic book race car signifies the collapse of distance by speed. If Kendall Walton's notion of photographic transparency holds, I was closer to home, to what was pictured, in looking at its Google Earth image than I was the moment before I zoomed in.[142] Distance shrinks as the image expands.

If this were true, the image of home in its quilt of pixels (Fig. 4-1) might have the potential then to become so large as to enfold and encompass the earth of dirt and water! The larger an image grows, the farther I can stand back from it and remain within its space, as it pushes past the edges of my peripheral vision. If the sliding zoom of the digital image were somehow freed from its bounded existence, it might well be said that an image could swallow up the world.

In Borges's famous microcuento, the map that might have swallowed up the world proves useless, persisting only as discarded tatters in the wilderness.[143] On the screen before me, however, the world is again absorbed into projection, thrust into flatland. The impulse to make the spheroid into an infinitely repeating projection in two dimensions, a paralyzing desire to image the world in increasingly minute detail, wraps its digits around the imagination and squeezes to stifle its circulation. 'Do not envision for yourself the world around you,' it says. 'Do not even look upon the thing itself and wonder!' Such images will tatter with neither use nor neglect.

Figure 4-1 Detail of *The Distance Home*, 2012, digital inkjet print

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141   The form of writing in this chapter alternates between a speculative essay and a fictional narrative. The switch from one to the other is signalled typographically. Everything in italics is part of the fictional narrative. Everything else is part of the speculative writing.
142   Walton, Transparent Pictures, 251-253. Kendall Walton's photographic transparency is the characteristic of photography that allows the viewer sustained, perceptual contact with the pictured subject.
143   Jorge Luis Borges, "On Exactitude in Science," in *Collected Fictions* (New York: Penguin Books, 1998), 325.

Because of the transparency of the images of Google Earth and Google Street View, I am profoundly more connected to the diversity of places in the world by my use of them, even if they are recordings of places as they have been rather than streaming interactions. In this case, it is not ridiculous to say, then, that as I stand in the street and gaze at the sky I am also looking at its image. If all photographs of a thing put us in contact with the thing itself, we might also be connected by the vision of a thing to all the photographs of it that have been taken to that point. The substance which reflects light in the present could be connected in some way to photographs of it which exist elsewhere.

The first time it happened to me I thought it was just the camera's flash in my eyes.

"Oh, I blinked in that one. Do it again, please!"

Another sharp, white flash followed by a flurry of colour as my eyes adjusted back. I thought I blinked again, but I didn't want to hold everyone up. I would see them again at Christmas.

'Goodbye, hon, love you!'

'Love you too, safe home! See you in a few months!'

Hugs, kisses.

On the way home from the airport, I had a headache, but chalked it up to my typical motion sickness on the tube. It had been an early morning trip out to Heathrow and Jack was worried I was pregnant. I said I'd go see the doctor. That doesn't really matter. I think the headache actually started with that second flash. That's what makes me think that was the first time for me. The headache.

Anyway, it seemed to fade by the time we got home. I think I spent that afternoon in the library writing. Or not writing, as those afternoons often were spent re-reading my old writing, cataloguing notecards with quotes on them, and making lists of what I should have been doing.

I was trying to find a way to show that digital photographs were as transparent, and thusly material, as analogue photographs. This was frustrated, however, by the need to differentiate transparency from photographic naturalism, which meant more research, more theory, more rabbit holes. But you can see, I was invested in the subject, so it made the circumstances all the more strange. My life for a long time after that was a lucid dream.

As Borges shows us, aspects of human production might be more fully explored and understood through the development of an absurd proposition, an eccentric approach to present circumstance through an imagined impossibility. If the argument for the transparency of photographs can work in one direction, perhaps it can work in another. I might possess the ability to see out through photographs of myself, or through the screens of the world, projecting myself into a consuming vision. Barthes claims that subjects of photography are transformed by photography. To take this proposition further, what of the non-human subjects? He is 'pricked' by aspects of a woman's dress in a picture, but what of the strapped pumps or the braided necklace as they persist in their original form?[144] That necklace would certainly *mean* more now that it has been pictured, become punctum, even if it is only to make it 'the necklace which was photographed'. What if that transformation also meant that a look at the necklace itself could project me into the space of the photo, or the space where the photo persists in matter today, in paper and silver, before the faces of perpetuitous viewers, or into the mind of a deceased philosopher?

144　Barthes, *Camera Lucida*, 43-45, 53.

BBC Evening News, 23 August 2014

> '*In London this evening, a city bus carrying 32 passengers stopped abruptly along the westbound South Circular causing delays to traffic for more than three hours. Details are unclear as to why the bus stopped, but onlookers noted that neither the driver nor any of the bus's passengers exited the bus during this time. All involved, including 3 members of the Metropolitan Police Force, were transported to St. Thomas's Hospital. Doctors tell us no one appears to be seriously injured, but several individuals are being kept overnight for observation…*'

When we heard about the bus that night on the news, we thought it was a protest or a hoax maybe. The news must have gotten their facts wrong. Then the CCTV footage was leaked. I think I heard everything from terrorists to aliens to demonic possession. I didn't believe any of it, well, at least not the second two, but I understood why people thought so. A bus full of unnatural faces, eyes open unblinking for three hours. You could access the entire video online for a few days before it was taken down. Not that you would want to. The first part was intriguing, the whole bizarre rescue attempt. The first cop that got in made it as far as the driver's window before he froze. The second only made it to the doorway. Thirty minutes after that a guy in a hazmat suit made it halfway down the aisle. I guess the next ones in line decided they'd rather wait it out because the rest of the video was two hours of silent stillness, just shadows and lights passing outside the windows.

Interview with Prof Julian Bacon, MD, FRCP, Head of Clinical Neurology

Institute of Neurology, Medical University of London [excerpted]

> *It was a bit of a mixed blessing, really, to have so many affected in the same way at the same time. I know it sounds cold—it was very difficult for some of them in the weeks that followed—but what it provided was a sizable group, 32 individuals, both male and female, and ranging in age from 22 months to 72 years, who had been through precisely the same experience. Plus, of course, the three first responders, who entered after the event had begun. As a scientist, I wouldn't say it was ideal, but post-event testing produced a wealth of physical data with which we could compare the affected in future events. It didn't take long for us to realize that photographic testing wasn't ethical, even on a small-scale in the lab. So this first event was really a gift to our research.*

The proposition of inverting the transparency of photography sounds less absurd when considered in relation to the highly surveillant, everyday networked condition in which I find myself. With cameras affixed to every eave and niche in the city—not to mention every roving palm—each street I walk down has been photographed many times over. Every building I pass has an innumerable multitude of corresponding images. With every glimpse of open sky, I anticipate being tracked or photographed via satellite. It is as though the sky itself were a giant aperture, so wide as to encompass the earth, a gaping eye/mouth poised to consume all that appears before it. I am so aware of being continuously made into an image of myself that I begin to believe I may be an image already.

I look out the window onto the street and imagine a digitized yellow track running down the centre, floating labels and icons indicating businesses and points of interest. I do not need the help of Augmented Reality software to render the street an image space, an empty shell papered with images of that street at successive moments. I, too, am pictured in that space, as the shadow in a window, perhaps, an even splay of pixels at the same depth as cars on the street or people on the sidewalk.

I got a letter in the mail followed up by a phone call. That's how I found out about the study. I'd gone to the GP a couple of weeks before for the headaches. They ordered some scans down at Queen Mary's and I hadn't heard anything since. I was hoping no news was good news. Instead the specialist who saw my scans apparently wasn't able to identify the cause of my headaches and thought I might be a candidate for a study on light sensitivity that was about to commence.

The first day at the clinic was a lot like therapy. I told the doctor my life story, physical health, mental health, family history, my current lifestyle, etc. I remember saying that I was a student, so I was available during the day for treatments. The clinician or whoever it was—I never saw her again—told me that it was a twelve week experimental treatment for light sensitivity that would test and then slowly acclimatizing my eyes to differing degrees of change in lighting. The first few weekly sessions would take about 25 minutes, and then taper from there. As I signing a set of release documents, she told me the treatments would be video-recorded, so I had to verbally agree to that as well as sign an extra form.

'No problem.'

When I hear other affected describe their experiences now, I sort of cringe because I remember how crazy it sounded at the beginning, and I guess I still sound that crazy to people who didn't live through it.

A technician took me into a softly lit room and asked me to have a seat in what was sort of like a dentist's chair, with a high back and arm rests. There was a device in the room that looked like a couple of camera lenses set into an over-sized pair of glasses. It extended from a long, wall-mounted, mechanical arm toward me. I was asked to pull the thing to about a foot from my face, look at a red mark between the lenses and try to hold very still so the recording would be accurate.

There was a white flash as if from a camera, but sustained for what felt like ten, maybe fifteen seconds. Then the centre of the white began to grey, and gradually darken, and I saw solid colours, red, green, blue, flashing like a strobe. They slowed at points, and it was then that I saw the people, not complete figures, but fuzzy head-and-shoulders silhouettes flashing from one to the next, sometimes repeating, sometimes overlaid, like photographs with multiple exposures, but not so still. I don't think I was afraid. I don't remember thinking or feeling anything at all. I just saw. Like my whole body was my eyes. Then it began to white out again to the brightness of a camera flash and the flash turned to blackness.

My eyes slowly adjusted to the now fully lit room in the clinic. I could hear the buzzing fluorescent light overhead before I could see the outline of the tech standing in front of me. I felt heavy, exhausted, and had a splitting headache, the worst I'd had to that point. The tech said something to me about staying seated, but I couldn't. I fumbled out of the chair and across the room to vomit into a waste paper basket. She must have called for a nurse or something because there were three more people standing over me, trying to clean me up and get me to drink some water.

'I'm so sorry,' I told the tech. 'That never happened before. I never get sick from the headaches. Oh, my god. Did I have a seizure or something?'

The look on her face was confused at first, but almost immediately flattened to a tepid smile, 'No, my dear, you definitely didn't have a seizure. In fact, you held so still for so long, we got some really good studies'.

It was grey and raining when I left the clinic, but the outdoor light was harsh to my eyes and made my headache worse. I was glad not to be sick on the train home.

That was a Tuesday, I think. On Friday that week I got a call from the clinic saying that the study was being postponed and asking would I be available in the new year. After the week I had just had—the headache lasted two days, and I was already pretty far behind on my writing—I just said sorry and that I wasn't sure I'd be in town.

The blue sky is an image of emptiness, though not an empty thing itself. The meeting place of opacity and transparency, an open expanse to be traversed in any direction, full with life sustaining chemical gases which exist on a scale beyond the talents of human vision, the sky above my head is an image of emptiness because it shows me nothing of itself.

An image of the sky is neither the same thing as the sky itself, nor the sky as image; however, it derives from the sky a slippery relation to aspects of representation (Fig. 4-2). As the sky is a space whose substance cannot be seen, its representation in flat image is necessarily a negation of its defining quality: spaceness. The flatness of the photographic image of sky, though appearing to represent closely the thing pictured, misses entirely its subject's true form and substance.

These are not the things I think, lying in the grass in springtime, watching clouds float by. These are thoughts for a hot, cloudless day. When the sky is most apparently the deep and wide anteroom to a silent watchfulness, felt in the blistering skin on my brow and the windless stillness. These are the days when I am most aware there is something 'up there', not God, not ghosts, but something watching me. Perhaps it is the heaviness of heat, the feeling of being pressed upon by larger force. It does not matter if it is the radiant energy of the sun or the smothering weight of omniscience; just that I know on these days I am not alone, that the sky that shows only emptiness is hiding something.

When I was a child, heavenly bodies followed me in the usual way, the sun in the day, the moon at night, but that was all. No multitude of eyes beyond the sky. Any human eyes were forced to follow at street level,
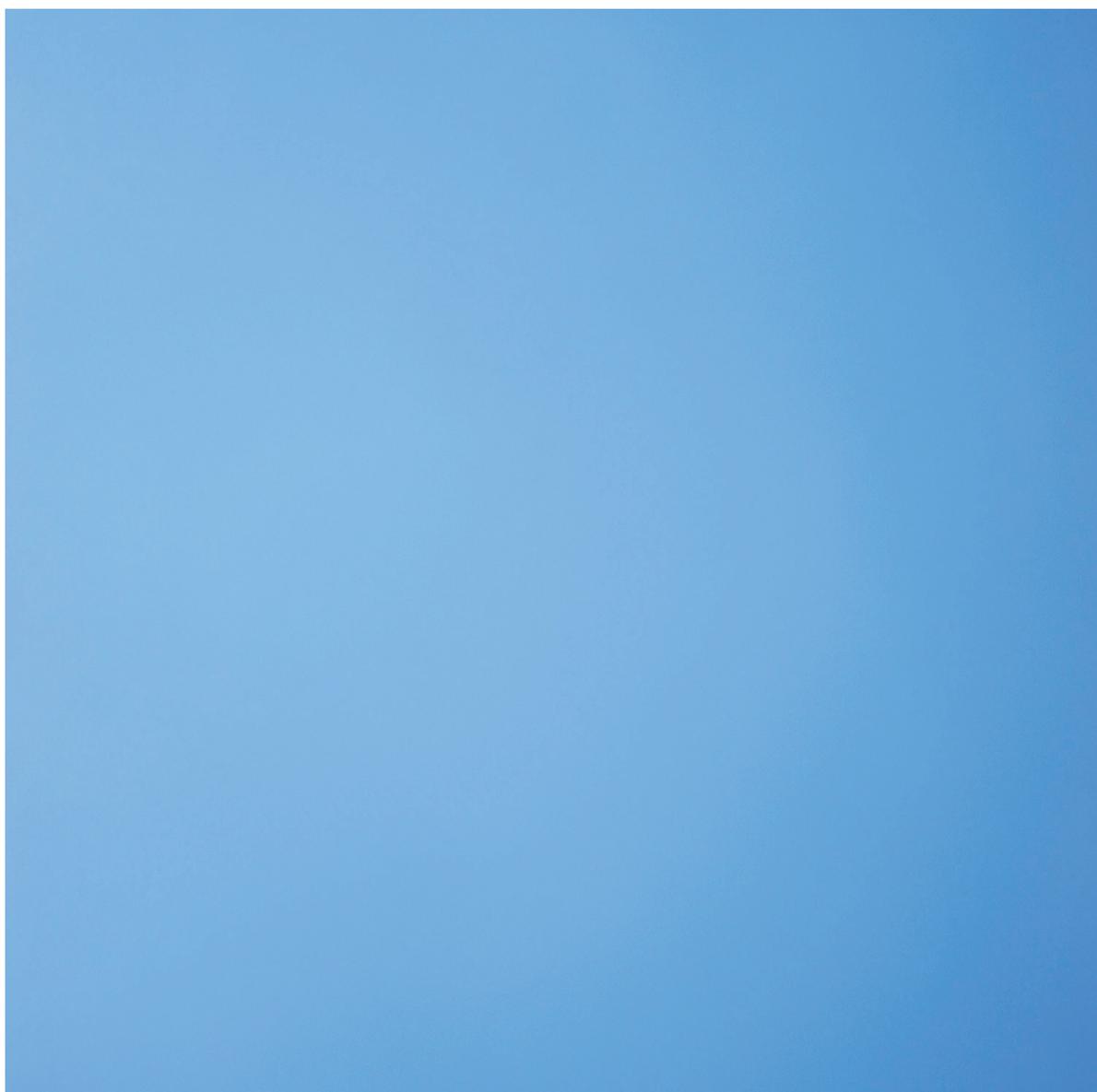
Figure 4-2 *An Image of Nothing*, 2014, digital inkjet print, 70x70cm

across the earth. An open space offered the possibility of isolation in a way no one could then appreciate, in a way no one anticipated might not last. As children we 'hid' from the world in a fallow field behind our housing development. The biggest risk was stepping in a groundhog hole and spraining an ankle. It was the ground that we watched with great care.

If I could now be there, lying on my back, staring at the sky, I would probably be in the front yard of somebody's McMansion. The diocese sold off the field ten years ago. A development of giant homes was erected, each sterile structure snatched up by a single family who unknowingly would soon be "under water" for the desire.[145] And today I can count them from across an ocean because the sky under which I once found cover has become an opening for the eyes of the world, of which I am myself a pair (see Fig. 4-3).

Figure 4-3 The housing development that replaced the field as it appears in Google Earth

It matters less what field it is where I lie now. When I look at the sky, though it shows me nothing, I am in any case, looking into my own face.

The speculation over the event on the bus was old news by December. I was still having headaches, none so severe as in the clinic, but more regularly and longer lasting, a dull ache that sometimes grew, sometimes dwindled, but was nearly always there. I couldn't bear to watch TV or work on the computer. I took a leave of absence for a term to rest and try to recover, but I only got worse. We agreed it was best not to travel to the US for the holidays. Since my scans were clean, standard migraine meds and some dietary changes were all the doctor could suggest until I got an appointment with a specialist. I don't have to tell you that never happened.

One night after I'd gone to bed, I was almost asleep and Jack called from the other room, 'You have to see this.'

I stumbled into the lounge and looked at the TV. I'd been taking melatonin to knock myself out at night, so I was groggy and not at all amused.

'What's the big deal? It's a nature programme. Very cute foxes,' I turned to go back to bed.

'No,' he said, shaking his head and looking from the TV to the remote to the TV, changing the channel and back again. 'The news just came on and the anchor was there at the desk and... nothing.'

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145   This refers to the real estate crash of 2008-2009.

'Nothing?'

'Nothing. Like she was frozen in her seat, not talking, just staring into the camera for like half a minute. They must have changed to this because there's something wrong.'

The screen switched back from the nature programme to the news desk, and there she was, staring out at us, not moving. It couldn't have been for more than three or four seconds before they went back to the foxes.

A couple days later, during the breakfast hour news and talk show, one of the guests went funny, a musician, seemingly alert and looking at the camera, but totally unresponsive to questions. You could almost have missed it for the swiftness of the camera switch and the anchor's slick transition to a new topic.

It was the same week that at a football match somewhere in South America, Argentina maybe, half the players on the home side seemingly refused to take the field. It made international sporting news, but the details were so muddled by the time it got around, that we didn't make the connection.

Surveillant technologies guarantee my continuous re-making into an image of myself. Using both the familiar, including the fully assimilated practices of using passports and visas, the small discomfort of CCTV cameras and screens on public transportation, the GPS tracking of mobile telephones, bank card transactions, and search engine cookie collection, as well as the newer and overtly more invasive wearable image capture devices and public space facial recognition technology, 'networked eyes' have the power to form a version of me from the reconfiguration of the data I produce. The latest iterations of imaging technologies are no more responsible than the first. They each constitute a small step toward the breakdown of an understanding of the personal and the private.

Such outward signs of surveillance pale in the wake of the Snowden leaks of 2013. The magnitude of the revelations themselves, that the collection of both content and metadata from the activities of private citizens around the world was being perpetrated on a continuous basis, is made weightier still by the knowledge that it was done in a spirit far from any reactionary defensive 'shoot first, ask questions later'. The breadth and depth of the spying required the strategic recruitment and employment of top cyber technology experts, Snowden included, the systematic intimidation and bribery of private individuals and corporations, and the coordinated manipulation of the material infrastructure of the internet in both domestic and international contexts.[146]

Since the explosion of photographic images that coincided with the coming together of the digital camera and the mobile, networked device, there has been a gradual change in the way we conceive of and value the photographic image. Sweeney suggests, 'The ability to add to the flows of information that make up contemporary visual culture might represent a shift in the scopophilic nature of the gaze, from pleasure in watching to pleasure in being watched'.[147] There is a purpose to personal photography beyond the private contemplation of a vision of one's past. Each user of photography has her own photographic program, so to speak, the culmination on an individual level of what Flusser recognizes in the televised event in saying, 'The moonlanding was made to produce a television program'.[148] The events of our lives are increasingly subject to image-programs of our own making. Consider the way citizens use technology to surveil one another, to expose mistreatment by police officers, to capture images of a neighbour's bad behaviour, to record instances of poor customer service. Rather than intervene in the unexpected as it occurs, we insert records into the program for future judgment.

146   Glenn Greenwald, "NSA collecting phone records of millions of Verizon customers daily," *The Guardian*, June 6, 2013, accessed September 10, 2014, http://www.theguardian.com/world/2013/jun/06/nsa-phone-records-verizon-court-order

Ewen MacAskill, et al, "GCHQ taps fibre-optic cables for secret access to world's communications," *The Guardian*, June 21, 2013, accessed September 10, 2014, http://www.theguardian.com/uk/2013/jun/21/gchq-cables-secret-world-communi-cations-nsa

147   Robert W. Sweeney, "Visual Culture of Control," *Studies in Art Education* 47(7) (2006) 305.
148   Flusser, *Into the Universe*, 56.

From hidden spy satellites orbiting the earth, to the surreptitious snap of a stranger's camera phone, the world surveilled in this way, from above and below, encourages the inversion of transparency, a swapping of image and world, a looking forward through objects and spaces to the viewers of their images, time travelling, rendering the present world an image. Instead of photos having value because they maintain our contact with past times and places, objects and spaces which have been photographed might command value as portals to future times and places, as precious artefacts of anticipated vision. And any sight of the sky is a look not just into my own face, but into the blank face of the future world.

THE SUPRESSION OF PHOTOGRAPHY ACT 2015 [excerpted]

1 The use and sale of photographic equipment, including video recording devices

    (1) No photographic equipment for the production of either still or moving images may be used by unlicensed individuals for any purpose.

    (2) Photographic licences will be issued by local authorities pursuant to subsection (6).

    (3) No photographic equipment may be sold by or to an unlicensed party.

    (4) No photographic equipment may be purchased by or from an unlicensed party.

2 The ownership and disposal of photographic equipment, including video recording devices

    (1) All privately owned video and still cameras are to be turned over to Police for registration and safe-keeping by or before 13 March, 2015.

    (2) Mobile phones, tablets and personal computers must have their photographic and video features dismantled at a government-approved outlet and be placed on a registry of dismantled devices by or before 13 March, 2015.

    (3) All privately owned CCTV cameras must be dismantled and registered as such by a government-approved servicer.

[…]

5 Related recommendations to the public

    (1) Remove photographic images from the home and workplace.

    (2) Avoid using websites which continue to use photographic images.

    (3) Remove photographic images from personal websites and social media pages.

    (4) Remove photographic images from business websites.

The ban had been in effect for only days when the cracks began to show. With a population as large as London's, there were bound to be people out there, breaking the rules. Good citizens queued like sitting ducks outside town halls to register and hand over their devices. Rumours circulated about gang members using camera phones to mug people. There were even a couple times when I thought I'd been photographed in line, but the headaches were so bad by then that I could no longer be sure. I heard then about the groups of teenagers deliberately hallucinating together, experimenting in the way they might have with illicit drugs.

There were so many artists in the city, as well. The new licenses did not cover art photography, so the likelihood of being granted one was slim to nil. I couldn't really see a lot of the people I knew packing it in,

giving up their cameras at the government's behest. Not that I thought any of them would assault anyone. It was just clear that a law wasn't going to make all the cameras go away.

I couldn't well continue my own studio practice without the use of a camera, but my situation was somewhat precarious. To take more photos would have risked my getting arrested, losing my visa, being separated from my husband, and pretty much wrecking our lives. I suppose I could have worked with the photos I had already taken, but I wasn't able to bring myself to look at them. I was haunted by those ten weeks in the early stages of research when I took hundreds of photos a day, every time I stepped outside to go somewhere. In irrational moments of self-pity or loathing, I would question whether I'd brought this on myself. So many faces on the hard drive, plenty of which I haven't seen since the day I took the shot, too many to have dealt with each one individually. But I couldn't bring myself to delete them, either. I've still got them all.

The more difficult thing was knowing what to do with personal photos, those on the hard drive as well as the framed snapshots of family and friends. I don't know why, but I even felt guilty displaying the ones of my grandparents who'd passed away years before. I didn't get rid of them, though I know lots of people who did. I just put them in a box, hard drive and all, in the back of the closet where I would be less tempted to look. I succeeded in avoiding them for a while when one day we were in the midst of cleaning the apartment and I pulled the box from behind some tennis rackets and old wellies. I'm not sure why, but I hadn't told Jack I'd kept them. I remember being worried he would be upset with me if he found out on his own.

'Hon, I kept some pictures.'

'I know. Just leave 'em in the closet for now.'

Easier than I expected, but I can't help it if that cardboard box suddenly felt a lot like an urn.

The neuroplasticity which allows us to adapt to the changes in temporal and spatial relationships of the networked condition, e.g. the suppression of distance and time in digital, networked communications, makes us susceptible to all kinds of reprogramming. The image that shows us to ourselves, whether an expanse of blue sky or a satellite view of a familiar locale, also helps to shape our conscious minds, our self-consciousness. For example, just as the vanishing point of renaissance perspective played a part in the assertion of the early modern individual, giving him a body and a central position in the world[149], the emergence of an encompassing image of the world awakens an unending reflexivity of self-sight, a consuming self-consciousness.

The expansive scope of this vision of ourselves has great consequences. 'Within a fully immersive media landscape, pictorial representation—which was seen as a prerogative and a political privilege for a long time—feels more like a threat'[150], one which, alongside claims of convenience and connectivity, promises new modes of paralysis and jeopardizes human freedom. The adaptation to such radical visibility is not without its promoting influences. Powerful capitalist and governmental interests, like Google or the NSA, benefit from street level enthusiasm for new gadgets that enable the compilation of demographics and profiles. The comprehensiveness of the program of digital identification and consumption makes the refusal to submit to representation an act of personal isolation and immobility across spaces both networked and geographical.[151] Forms of tactical creativity, including political dissent, participate by necessity in the channels of mainstream media.[152] No longer able to escape representation in either of the supposedly public or private realms, we are exposed in a way that has no opposite. Cover is not just beyond us: there is no cover.

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149   Steyerl, *The Wicked of the Screen*, 19.
150   Ibid, 166.
151   Monika Codourey, "Mobile identities, technology and the socio-spatial relations of air travel," *Technoetic Arts* 6(1) (2008): 110.
152   Galloway and Thacker, "Protocol, Control, and Networks," 25.

Prime Minister's radio address, 3 March 2015 [excerpted]

> *'In the past, we were able to make technology work for us, by capturing the images of the perpetrators on CCTV so even if they hadn't yet been arrested, their faces were known and they would not escape the law. Present circumstances, having necessitated a more selective use of CCTV, call for different means of keeping watch over our streets.*
>
> *And as I said yesterday, no phoney human rights concerns about over policing will get in the way of keeping our streets adequately surveilled and bringing to justice those violent criminals.*
>
> *Anyone charged with violent disorder and other serious offences involving the use of a camera should expect to be remanded in custody, not let back on the streets, and anyone convicted should expect to go to jail.'[153]*

When he made that speech, I listened to it. His voice was agitated. I obviously couldn't see him, but he sounded shaken, sweaty. I remember wondering if the arrogance was a cover for his own fear or desperation at being 'in charge' of a crisis with no solution. Or maybe just an effect of the same.

He had no idea what else to do. No one did. Triple the normal number of police on the beat and the streets were still a mess. A good quarter to a third of the population had already left the city by then. There was no sanitation in any but two boroughs south of the river. The post wasn't being delivered but once or twice a week. We couldn't figure out where to get groceries most of the time, so when we saw a shop open, we bought what we could and squirreled it away. You couldn't buy too much, though. You had to be able to hide it on your person or in your handbag or you might not make it home safely.

The buses were still running. Funny. The buses, now without CCTV, had all their windows mirrored, including the driver's. You couldn't see in to tell if it was full or empty.

Police officers carried mirrors with them at all times. It was the only way they could get close enough to the camera thugs to make an arrest. But it didn't always work, and if they got into a tussle, they were as vulnerable as the rest of us.

There was no such defence availed to the public. Something about a ricochet effect. You could harm a bystander with a deflected shot, so only those officers trained in the defensive deployment of reflective apparatuses were permitted to carry them in public.

It wasn't just camera thugs you had to look out for. Even though private CCTV was banned, banks and other kinds of businesses holding large amounts of cash were licensed to instead use still image capture. Every five to ten seconds, the camera would take a still image. The timing was deliberately randomized to discourage any coordinated evasion of surveillance. Passing by the bank on the way to the train station was an exercise in walking quickly, hoping to miss the shot, but more than likely getting a flash of colour and a throbbing headache for my efforts.

I learned early on to carry an umbrella on sunny days and clear nights, as well. It wouldn't save me from assault at street level, but there was no mention of satellite imaging in the ban. If cloud cover wasn't there to hide you from the sky, you took your chances that nothing interesting was happening in your vicinity that day. Not long after the 3 March speech came another one, this time asking all those who had been affected to go to their GP's to be put on a register of the vulnerable, an amendment to the SPA. I queued outside the doctor's surgery for half an hour or so. It was a partly cloudy day, big fluffy white ones, chilly still, but the first pretty day of spring, so naturally I had my umbrella. The elderly lady in front of me didn't, so I had to cover us both every time the clouds parted. I think it made her pretty uncomfortable.

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153   David Cameron, "Riot statement," accessed September 10, 2014, http://www.politics.co.uk/comment-analysis/2011/08/11/david-cameron-riot-statement-in-full. Text for this fictional radio address was adapted from the Prime Minister's statement to Parliament on the 2011 London riots.

Whether the world precedes or follows image, we are now experiencing a new panopticon, though as William Mitchell describes it, 'a networked consumer-electronics version'[154], one which came to be through acquiescence to a rhetoric that mistakenly equates transparency to truth, presumptuously espousing that 1) what is can be seen; 2) what can be seen is; and 3) what is seen is put under control for the shared benefit of the community. This attitude stems from a perversion of transparency that fails to acknowledge that the photographic image is not a totalized equivalent of its referent, but an isolated approximation of appearance at one instant from one specific vantage. The expectation that an image can draw conclusions, or deliver up a verdict beyond the this-has-been, is the very type of wilful ignorance that, paired with faith-based intelligence, has in the past set us on a course of war.[155]

It follows that Paul Virilio thinks we are in a state of occupation, and I am inclined to agree.[156] It is in fact a military one, though the degree to which it might feel that way probably depends on where you live in the world. After all the same technology that brings me images of myself and the city for my varied use, is what enables a circling of drones over Pakistan. For me, a citizen not only of the industrialized West, but of the world's largest military power, this presence takes the form of an occupation of the rhythms of everyday life by means of representation through image, through geophysical tracking, and through patterns of consumption which include not only how I consume but how I am consumed. I may not feel my personal freedom imperilled by the threat of drone attacks in Washington, D.C. or London, but it may be slipping quietly away all the same.

If, as Mark Poster asserts, 'Consumption is not simply a purchase of an object fixed in meaning, but a resignification of that object',[157] then in the patterns of personal representation all people are susceptible to a resignification by those in control of the networks of those representations. Human value is being determined from afar, whether by those who push the buttons that launch deadly attacks on the other side of the planet or by those commercial entities harvesting informative bits from social media and online purchases to reform me into a data-based picture of myself.

My complicity in the occupation, unconscious as it may have been for a long time, is fortified by my own use of networked devices. Domestic technologies such as GPS and wireless communication, do not simply evolve from military ones.[158] They remain military by suppressing the impulse of the Western user to reject the techno-violence half a world away. That powerful affective contact with the suffering experienced through both mass and social media may prove the transparency of the digital image, yet potentially undermines agency in that 'So far as we feel sympathy, we feel we are not accomplices to what caused the suffering. Our sympathy proclaims our innocence as well as our impotence'.[159]

Interview with Prof Bacon, continued [excerpted]

> *What did those early experiments yield, if anything?*
>
> *Well, we conducted them so briefly that they couldn't do much more than give us hints as to what was happening. Once Parliament called for a registry of the affected, we asked GPs to offer their patients a chance to participate in a study of their condition. We set up a series of photo sessions.*

154   Mitchell, "Networked Eyes," 175-176.

155   Rebecca, Leung "The Man Who New" CBS News October 13, 2003, accessed September 10, 2014, http://www.cbsnews.com/2100-500164_162-577975. and cnn.com. U.S. Secretary of State Colin Powell famously used military satellite photos to prove, against the advice of experts, in 2003 that the Iraqis had weapons of mass destruction; a year later, some of the trucks Powell claimed to be key indicators of chemical weapons facilities were found to be fire trucks.

156   Virilio, *The Administration of Fear*, 47.

157   Mark Poster, "Consumption and digital commodities in the everyday," Cultural Studies 18(2-3) (2004): 413.

158   "History of GPS – Mio Technology," accessed September 10, 2014, http://www.mio.com/technology-history-of-gps.htm

159   Susan Sontag, *Regarding the Pain of Others* (London: Penguin Books, 2004), 91. Sontag continues: 'To that extent, it can be (for all our good intentions) an impertinent—if not an inappropriate—response. To set aside the sympathy we extend to others beset by war and murderous politics for a reflection on how our privileges are located on the same map as their suffering, and may—in ways we might prefer not to imagine—be linked to their suffering, as the wealth of some may imply the destitution of others, is a task for which the painful stirring images supply only an initial spark'.

The subject would be photographed and video recorded. We observed the symptoms that are commonly known today, those most observable.

What were those?

In video subjects the outward appearance of catatonia, waxy flexibility, temporary loss of the corneal reflex, and then headaches and nausea post exposure. Still image produced the same post exposure reactions, but without any outward sign of hallucination. We interviewed the subjects, as well. Generally speaking, their reports lined up with the 35. White light followed by colours, the appearance of human forms and faces. But where the 35 described nearly identical series of human figures and changes to the speed of the hallucination, if you will, the subjects photographed individually in the lab reported differing durations, speeds, numbers, and sequences of figures.

It wasn't until we stopped the experiments and proceeded primarily through interview that this distinction made sense. It's really what led us to the understanding we have today. It seemed that the purpose of the photograph somehow affected the degree or the fineness of the hallucination. In cases where individuals were photographed or videoed by someone they knew, a snapshot or a home movie, they tended to hallucinate much more slowly, and were even able to recognize some of the faces in their hallucinations. Some of them reported seeing their own faces. People appearing in more widely disseminated media, commercial photography or newspaper photos, for example, had less distinct recollection of individual figures. Those people who were caught on live television were most badly affected. Their hallucinations were more rapid, figures were generalized if recognizably human at all, and their recovery periods were lengthier with migraine to the point of incapacity for days on end.

We couldn't believe what we were hearing. And later, as most of us eventually experienced some level of affection at some point, we were astounded at the accuracy of the descriptions, the truth of what these subjects reported.

This time travel by image, the proposed perceptual contact projected through my exposure to surveillance—something which at first seems fantastical and terrifying—would be at best a latent power. What could the past tell the future that it could not already know? What could the future tell the past that would not ultimately alter it? In the meantime, I know of no way to affect the pictured past. Nor do I expect to benefit in the present by telepathic co-presence to future visions. The photograph remains a one-way street.

This is the paralyzing anxiety of what it means to exist only as an image for the future. In continuously making ourselves into images, in allowing ourselves to be re-made into other images, we lose our present, not to its natural passing, but to a highly anticipated future. As the world becomes image, we come to see ourselves as figures within an image space existing for our own future consumption as opposed to agents of change in the immediate. Whether photography remains a one-way street or not, the world is able to be swallowed up because it has been flattened out, made consumable.

It's too difficult for me to finish the project where I left off. That was another life, another me. I don't miss the writing deadlines or the fear of failure. I don't want to write like that anymore. Not to mention, the research I did is horribly dated now, particularly in light of the affection. Beginning again sounds more like a sentence than a prospect.

However, I'm happy to share things in writing, if you can call it that. The arthritis took my hands a long time ago. Dictating to a screen will never feel as satisfying as the clicking of fingertips on keys.

By the time the hallucinations ceased, or rather, once we realized they had gone entirely, my life had changed.

I disagree with anyone who thinks they can say precisely when the condition ended. They know so little, those scientists and doctors. And I know less, I suppose. Anyway, we were settled by then and I had no interest in returning to London. We still have friends there, but I don't even like going to town to visit. It's too dirty, too noisy. I don't care that the museums and theatres are open again. I don't even care that someone wanted to show some of my old work last year. How they found it, how they found me...

I try not to think of that period, of what it was like to be affected, hiding from the sunshine, holding my breath when I passed by a bank like it was a graveyard. Cameras are in our lives again. My children use them around me and I don't mind. They were born to a world without cameras. It is somehow fitting that their adolescence should coincide with the re-emergence of photography.

Is our consumption of the world as image the same thing as the destruction of the world? Ouroboros, the serpent who eats its own tail, is an image of singular and whole self-consumption, but whether or not it is one of self-destruction is unclear. Can Ouroboros itself die? Its image is frozen so that we may never find out, so it may remain an object of contemplation (though a real snake would certainly die from this). We consume and are consumed, each action strangely enabling the other. I wonder at the point when this process might give out, when we may expire. Are we like the ancient image, frozen in an inescapable snare of our own making? Or are we awake and choking to death on our own tails?

On overcast days when the light is trapped between the surface of the earth and the cloud cover, I do not feel the difference, but I get burned worse than I would under a cloudless sky. The sun's radiation bounces up and down between earth and cloud, doubling and redoubling its strength as morning stretches into long, cool afternoon. But forgetting the sunblock, should I worry more about skin cancer or my stripped-bare exposure to sight when I step outside my door?

I can spot the seams of the world-as-image only slightly better than I might see the ultra violet light that burns cancer into my skin, but I search all the same for some cognitive defence against the invisible, co-opting power of digital image supremacy. I cannot help that the images I see reflect the world in which I live back to me any more than I can reasonably choose to walk away from them. I do not want to fly headfirst into the side of a building, like a bird tricked by a flourish of leafy reflection. So I find myself on a clear day looking into the sky just as I look at the screen, in search of an edge or a seam, a tear or a glitch, the pixelated transition from blues to whites, the moiré-like compression patterns, the moments of discontinuity that could save my life.

This research can be categorized as a pursuit of tactical creativity in a time of pervasive imaging. In order to negotiate a challenging new condition for a critical practice of image-making, both my work and my writing attempt to reveal the presence of an underlying structure in the digital network and the images that are its currency and its product by alternating interrogations of the production and use of the digital image itself.

The questions that have led and sustained this research are 1) How do the suppression of physical distance and the ubiquity of surveillance, perpetuated and framed by changes in everyday networked technologies, work together to influence our ways of looking at, using, and understanding the image?; and 2) What is the role of the image in destabilizing and reinforcing human agency?

The theoretical context of this research is Michel de Certeau's critique of everyday life and Vilem Flusser's philosophy of photography. De Certeau provides a workable understanding of how individuals carry on in response to circumstances beyond their control. His description of the invisible tactical behaviours of ordinary citizens seems at first to be applicable to the creative activities of end-users of technologies; however, specific changes in technologies over the last few decades make invisibility to authority much less achievable a prospect. With the proliferation of the digital image comes an explosion of surveillance in both public and private realms, committed by authorities and their citizens alike. This contemporary networked condition jeopardizes human agency, mirroring the functionalism described by Vilem Flusser as the co-dependent feedback loop between human-user and image-producing apparatuses.

The practical component of this project takes Flusser's methodology of 'playing against the camera' as a means for a more liberating use of image technology. The work of the experimental photographers he describes is certainly not invisible to the program of images, but by subverting technology to produce outcomes not anticipated by the program, they wrestle away a modicum of agency a bit at a time. In the written elements of this project, I foreground the subjectivity that is necessary for a self-conscious use of

Figure c-1 Clockwise from the left: *Tracking Home* block 3, *COB: Linear Loop I*, and *One Week* installed at Coleman Project Space

Figure c-2 Left to right: *Cloud Diptrych v. 1*, *God's Eye II*, *Addendum Sky* (on the floor), *An Image of Nothing*, and *White Screen III*

technology by using a variety of forms for writing as appropriate. These include stream of consciousness, personal anecdotes, reflective journaling, and short speculative fiction. In the fourth chapter of this thesis, I integrate the formerly alternating gestures of writing and studio practice by employing creative writing alongside a simultaneous reflection on its subject.

Particular examples of practice represent turning points in my understanding. In preparing an exhibition of the practical component, I selected works to represent these moments of shifting understanding in order to present an arcing overview of the project as a whole. The early works, such as *COB: Linear Loop I*, *Tracking Home*, and *One Week of Collection* (Fig. c-1), represent my initial attempts and ultimate inability to convey my embodied experience of technology through images. *The Fiction of the Nest*, *The Distance Home*, and *Diptrych I* trace a shift of interest from what the image represents to the way the materiality of an image influences how that subject is represented and interpreted. *Cloud Diptrych v.1*, *God's Eye II,* and *Addendum Sky* (Figure c-2) show the ways I investigated questions raised by those previous works, foregrounding the constructed aspects of digital images through the re-presentation of networked digital images outside digital media. *An Image of Nothing*, *White Screen III*, and *Sampled Screen I (Figs. c-3 and c-4)* engage in an examination of the continuous and the digitized. While the image of the sky suggests a graded continuity, the moiré images beside it call to mind the digital-material process by which that gradient was produced, questioning the simplistic, binary understanding of matter as either continuous or particulate. The last work made for the project, *Thanatophobia*, continues to foreground digital materiality, attempting also to comment on the desire for the subject of the image and the embodied experience of looking.

The guiding subjects of this written component—and the topics of each chapter, respectively—are the importance of recognizing digital materiality, the work of the body in a process of computation, the affective potency of the 'poor image', and finally, the potentially threatening absurdity of contemporary networked self-consumption. The questions and shifts raised in practice are reflected in the trajectory from my own recognition of digital materiality, through a practiced foregrounding of that materiality, to questioning the consequences of the same.
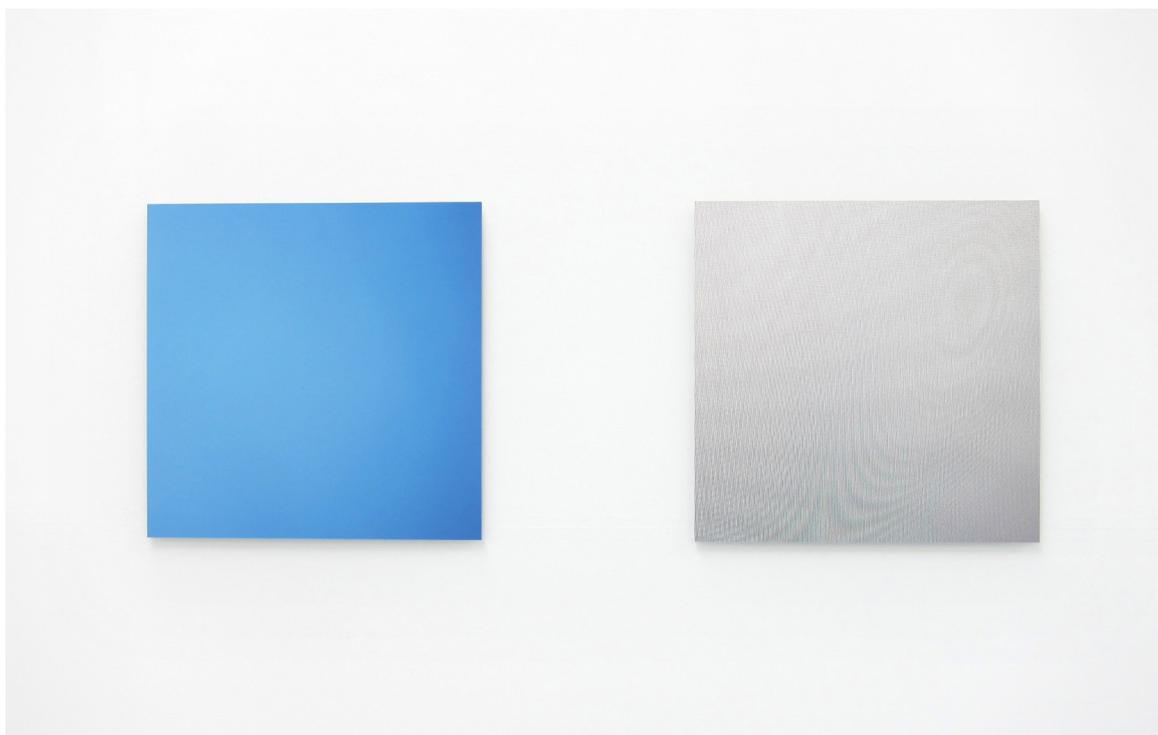
Figure c-3 *An Image of Nothing* and *White Screen III*, 2014, digital inkjet prints, 70x70cm
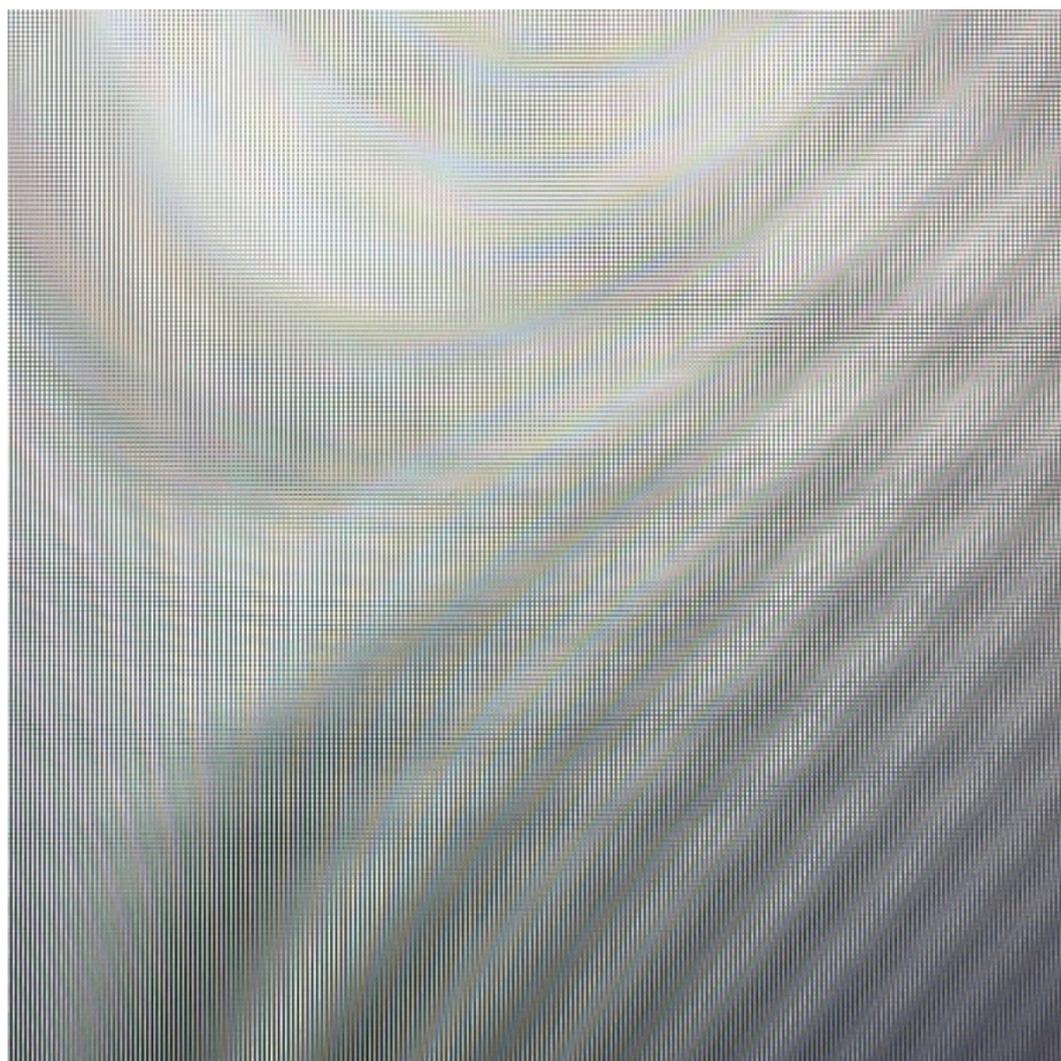

Figure c-4 *Sampled Screen I*, 2014, digital inkjet print, 90x90cm

Findings

Though the findings outlined below are theoretical in nature, they were arrived at by a practice-led methodology. Through the production and contemplation of certain kinds of images, my fine art practice both raises and responds to the guiding questions of this research. Generally speaking, I find that digital materiality is more than the sum of bits in silicon and electrical impulses in cable. It is also—and perhaps more importantly—the material effects of the networked condition.

In response to my first research question, through self-surveillance in the collection of GPS tracks and iPhone images, the consideration of digital materiality in the production of woodblocks, prints and textile artworks, and reflective writing on both, I recognize some effects of the contemporary networked condition. Pre-digital photographs and videos, understood as transparent in the sense meant by Kendall Walton, put viewers in perceptual contact with things distant from them in time and space. With the introduction of networked digital technology and the speed and accessibility it offers, that photographic transparency is not compromised, but compounded by a seeming instantaneity. One result of this is a loss of differentiation between times and spaces. Scale, in regard to distance and duration, loses its former fixity, and becomes fiction. *I propose it is this marriage of transparency and instantaneity that is at the root of certain notable cultural effects.*

The first of these effects is the blindness to digital materiality despite its prominence in the everyday lives of millions. In order to accommodate the above-described abstraction of scale, people turn to metaphorical language, describing digital objects and processes in terms of the immaterial, permanent, or magical. Crucially, this leads users of digital technologies away from a material consciousness of the medium, a claim that is supported by the work of Johanna Drucker[160] and Wendy Hui-Kyong Chun.[161]

The second effect is the confused and heightened sense of interconnection that Virilio describes as a synchronization of emotion. I assert that it is the maintenance of perceptual contact between people in times of emergency that makes the digital image into a conduit of pathos and catharsis on a global scale.

Another response to this first question is to do with new aesthetic conditions. *As image quality suffers for the sake of expedient connection, image quality itself is politicized*, a theory supported by Steyerl's defence of the 'poor image'.[162] First, I recognize that the compressed aesthetic, by disrupting photographic illusion, overtly signifies the speed of digital reproduction and the presence of the invisible structures enabling it. Second, because of the primacy of contact, discussed in Chapter 3, the pixelated expression of a compressed image— in contrast to the slickly manufactured products of corporate advertisement and governmental propaganda— bears an impression of credibility from its seeming lack of designed manipulation.

This brings me to the second question of this research, which deals with practical concerns over human will in relation to image technology. My first response is that *speed, smallness, manipulability, easy reproduction, and other characteristics of digital objects, work to destabilize individual human agency by promoting and sustaining the ignorance of the human user.* The technical complexities of digital objects do make it difficult for people to make informed decisions regarding their use. Computers are necessarily black boxes, obfuscating the technological processes and political conditions which constitute the network, and producing a global army of uninformed end-users enslaved to a program of images. Through practices of discreetly collecting and storing people's personal information, this obfuscation also enables the resignification of individuals by those in control of the network, as suggested by Mark Poster.[163] Individuals are reconstituted as data-based versions of themselves.

Certain material characteristics of digital objects encourage behaviours that sustain the ignorance of the user. The speed of image proliferation accelerates personal time, encouraging series of distraction over sustained contemplation. The continuous accessibility provided by digital technologies reinforces the human desire for

160   Drucker, Speclab.
161   Chun, "On Software," and "The Enduring Ephemeral."
162   Steyerl, The Wicked of the Screen, 31-45.
163   Poster, "Consumption," 409.

contact of over critical content, as noted by both Douglas Rushkoff[164] and Imar de Vries.[165] The transparency of digital images in the case of pictures of suffering, disaster and violence can elicit feelings of sympathy in place of gestures of dissent, as noted by Susan Sontag.[166] In relation to this, witnesses to injustice behave as passive recorders instead of agents of intervention.

My second and more optimistic response to this question is that, alternatively, *human agency may be reinforced by a practice of digital image-making through the development of a material consciousness of the digital image.* Such consciousness enables the user to recognize outward signs of digital materiality. In my experience of practice-led research, the seams of the image indicate the presence of invisible processes, leading to a finer understanding of their implications for fine art practice. This is most apparent in my development of a process for hand-making a digital image. *By performing an embodied process of digitization, I see ways in which the value system of the digital infiltrates its users' thinking. By the slow work of coding and crocheting pixel-stitch after pixel-stitch, conferring the meaning of embodied gesture onto each discrete component, I insert human value into a digital process, creating a working model of difference between the human and computer.*

In working with images from Google Earth and Street View, CCTV images, and smartphone photography, I recognize the mingling of networked surveillance with the private lives of individuals. These reflexively watchful forms become the ubiquitous images of everyday life. Motivated in no small part by the human desire for contact, participation in the program of images brings users to see not only their productions, but *themselves* as images for the future as opposed to agents of change in the present. *I recognize Flusser's functionalism updated for the 21st century in an image culture of circular and paralyzing self-consumption promoted by contemporary image technology.*

I respond to this recognition through a methodology of artistic tactical intervention inspired by Flusser's methodology of 'playing against the camera'.[167] By juxtaposing digital and manual processes in *Tracking Home*, *Two Steps*, and the *Diptrych* prints, I question how the material signature of an image might influence its interpretation. In the case of the *God's Eye* series, I use images produced by Google to interrogate a cultural myth Google itself perpetuates, i.e. its own mission statement. By performing the work of a computer in the making of *Scribal Drift*, I produce an unexpected model of difference: the emphatic physical presence of the human body in a process of laboured digital reproduction. In the production of a looping video of gif images in *Thanatophobia,* I address the conflict between desire and dissatisfaction with the limits of the perceptual contact of the digital image.

Flusser's 'playing against' presents the potential for a tactics of visibility, one that could have a chance at success in the radical visibility of 21st century everyday life and art practice. As de Certeau's tactics were unable to overcome strategies, so does the agency expressed in my practice constitute a compromise between program of authority and individual will. By re-presenting digital images in prints, textiles and projection, not to mention their subsequent documentation, I contribute to the program of images. But even this is an opportunity to achieve a distinct freedom. By acknowledging the compromise necessary for tactical creativity, I am able to accept my own responsibility in its propagation. The interpretation presented here and embodied in practice, constitutes a unique combination and application of the theories of Flusser and de Certeau in the context of fine art and studies of everyday life.

Implications

In asserting that instantaneity and transparency combine to effect a loss of differentiation between spaces and times, I suggest that the rise of global affect, consistent with Paul Virilio's description, depends on the transparency of the photographic image, and therefore materiality. I believe this constitutes new reason to

164   Rushkoff, Program or Be Programmed, 105.
165   de Vries, "The vanishing points," 84.
166   Sontag, Regarding the Pain of Others, 91.
167   Flusser, Toward a Philosophy, 80.

reconsider theories of photographic realism, and to consider digital materiality in the study of the image and practice of image making.

As modes of surveillance become the images of everyday life, it is apparent that the tactical use of digital media will always be compromised. This is in part due to the nature of tactics as folded into strategies, but more so in the case of the networked condition by the practical impossibility of invisibility consistent with Flusser's fears over a fascistically composed network. This research advocates the conscious pursuit of new ways of conceiving of tactics for the 21st century.

Finally, if the same characteristics of the digital image that destabilize human agency, can be employed to reinstate or reinforce that agency through a materially conscious practice, then that practice is a necessary means of balancing the compromising effects of the contemporary networked condition on human agency. This finding is consistent with Steyerl's image-object, Drucker's digital ontology, and Flusser's methodology of 'playing against', and is evidenced by a host of practices in the field, including my own. The implication is that future tactical approaches will need to centre on or at least include some element of visual practice in order to introduce human agency into the network.

Future Research

It is my intention in future research to more deeply consider questions raised in the course of this project, and to further develop my own material consciousness of the digital image. In the expressed necessity for new modes of tactical creativity, there is an opportunity for further research that interprets, contextualizes, and participates in contemporary critical practices from this perspective.

The transparency of digital images of violence heightens the dilemma, 'to look or not to look', by the weight of perceptual contact. Where Susan Sontag sees the sympathy initiated by an act of looking as assuaging feelings of responsibility[168], Thomas Hirschhorn claims that looking at such images is difficult precisely because it is an acknowledgment of culpability.[169] In considering these potentially conflicting theories, I see the opportunity to examine the rhetoric of sympathy in the perpetuation of and revulsion toward networked images of distant violence. I touched on this briefly in Chapter 3, but it bears lengthier consideration.

Limitations

Due to the nature of practice-led fine art research, the limitations of this project are closely aligned with my own perspective, skills and experience. Because my research takes a subjective approach to investigating the role of technology in everyday life, these limitations include my technical illiteracy and end-user status, as well as my western, white, middle class identity.

Recognizing these as potentially problematic, I approach reflection on everyday life from a self-conscious perspective. This involves focusing on process within a practice of image-making, using my own work as a loose case study, and choosing forms for writing that foreground my subjectivity. This allows me to give a specific account of how an end-user of digital technology might understand the networked condition.

My intentions for future research include addressing these limitations. In considering the Sontag-Hirschhorn question, I am asked to confront my own culpability in destructive aspects of the networked condition. By participating in a tactical creative practice, including the possibility of furthering my technical knowledge of computing, I may extend this research beyond my end-user understanding.

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168   Sontag, Regarding the Pain of Others, 91.
169   Hirschhorn, Critical Laboratory, 103-104.

Conclusion

When the world is accelerated to the point of inversion, where is the time for developing a material consciousness? Artists' practices today often involve no hands-on manipulation of the materials that make their final work. I do not reject this means of production as a legitimate practice in art. I see, however, that it may in part be a symptom of the anxiety of moving at a pace any slower than thought itself—fingers drumming on the desktop, waiting for an image to download. If I were to relinquish the labour of making, I might become the end user in my own practice. I am disturbed enough at the thought of my digital illiteracy. I suspect I seek a material consciousness of the digital, especially through manual techniques such as woodblock and crocheting, as a retreat from that condition of dependence and vulnerability. I appreciate the resistances I meet in practice as the measure of my own engagement, whether the rough edged impression of woodblock cut with a dull knife, or the time-consuming reassembly of the fractured fragments of a digital file too big to be saved on my hard drive. Beyond my personal experience of research, I recognize that the production of artwork and written documents may find a place and a purpose for such resistances in stimulating and informing creative practice to navigate the networked vision of everyday life in the 21st century.

Appendix 1 Thumbnails - Large format images can be found on the accompanying DVD (Appendix 3)

Practical Work 2010

1. Traced Places:
Abbeville Road
Marker on Tracing
Paper
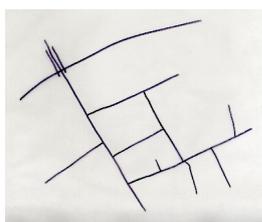
2. Traced Places:
Battersea Campus
Marker on Tracing
Paper

3. Traced Places: BG to
Brixton
Marker on Tracing
Paper
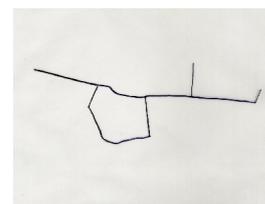
4. Traced Places:
Ramilles Close
Marker on Tracing
Paper
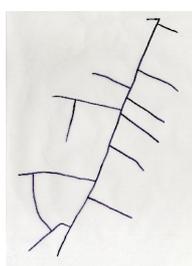
5. Traced Places:
Brixton Hill South
Marker on Tracing
Paper
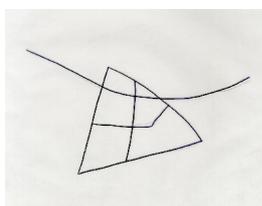
6. Traced Places:
Brixton
Marker on Tracing
Paper

7. Traced Places:
Camden Town
Marker on Tracing
Paper
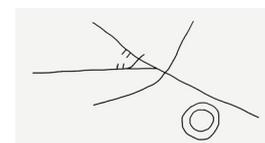
8. Traced Places: Chalk
Farm
Marker on Tracing
Paper
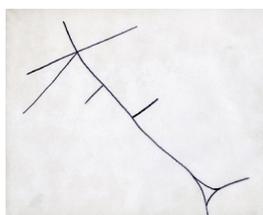
9. Traced Places:
Clapham Common
Marker on Tracing
Paper

10. Traced Places:
Clapham Junction
Marker on Tracing
Paper

11. Traced Places:
Green Park
Marker on Tracing
Paper

12. Traced Places:
Home to Bedford Road
Marker on Tracing
Paper

13. Traced Places: HSK
to RCA
Marker on Tracing
Paper
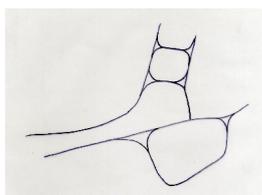
14. Traced Places: Hyde
Park Corner
Marker on Tracing
Paper
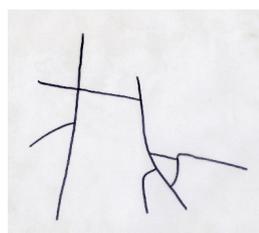
15. Traced Places: Kings
Ave to Home
Marker on Tracing
Paper
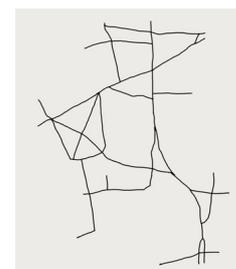
16. Traced Places:
Leicester Square
Marker on Tracing
Paper

Practical Work 2010

17. Traced Places:
Lyham to Acre Lane
Marker on Tracing
Paper
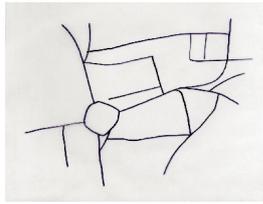
18. Traced Places: Old
Street
Marker on Tracing
Paper

19. Traced Places:
Oxford Street
Marker on Tracing
Paper
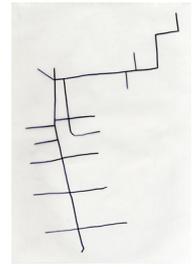
20. Traced Places: RCA
to GR
Marker on Tracing
Paper
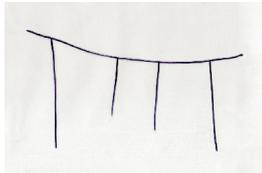
21. Traced Places: RCA
to 59
Marker on Tracing
Paper
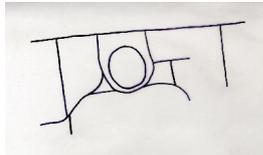
22. Traced Places: RCA
Marker on Tracing
Paper
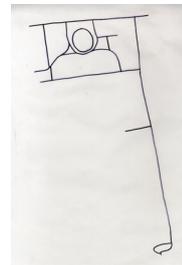
23. Traced Places: SK
to RCA
Marker on Tracing
Paper

24. Traced Places:
Southbank
Marker on Tracing
Paper
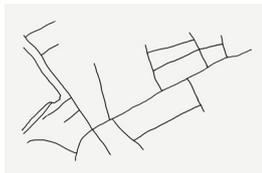
25. Traced Places: The
Cut
Marker on Tracing
Paper
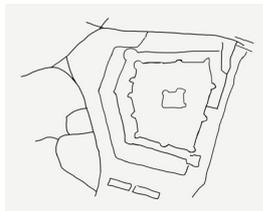
26. Traced Places:
Tower
Marker on Tracing
Paper
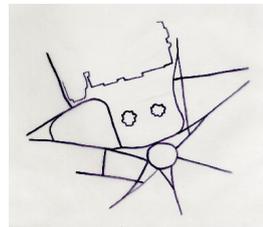
27. Traced Places:
Trafalgar Square
Marker on Tracing
Paper

28. Traced Places: Ute's
to Victoria Park
Marker on Tracing
Paper

29. Traced Places:
Victoria Station
Marker on Tracing
Paper
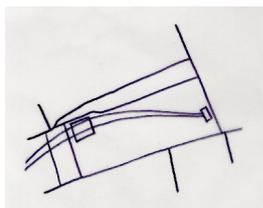
30. Traced Places:
Whitechapel
Marker on Tracing
Paper

31. Traced Trips:
Commute 1A
Marker on Tracing
Paper
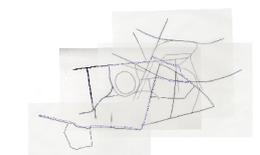
32. Traced Trips:
Commute 1B
Marker on Tracing
Paper

Practical Work 2010

33. Traced Trips:
Commute 2A
Marker on Tracing
Paper
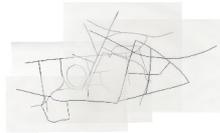
34. Traced Trips:
Commute 2B
Marker on Tracing
Paper
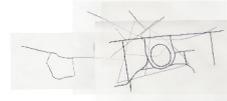
35. Traced Trips:
Commute 3A
Marker on Tracing
Paper

36. Traced Trips:
Commute 3B
Marker on Tracing
Paper
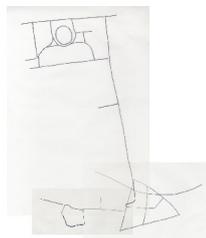
37. Traced Trips:
Commute 4A
Marker on Tracing
Paper
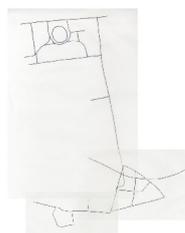
38. Traced Trips:
Commute 4B
Marker on Tracing
Paper

39. Traced Trips:
Commute 1A To and
From
Marker on Tracing
Paper

40. Traced Trips: 4 Days
of Returns
Marker on Tracing
Paper
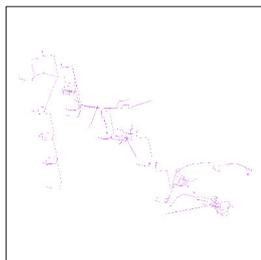
41. 29 Nov to 23 Dec
Path
Digital Tracing

42. *COB (underwater) I*
digital inkjet print
28x36cm

43. *COB (underwater) II*
digital inkjet print
28x36cm

44. *Folded Present I*
digital inkjet print
12x20cm

45. *Folded Present II*
digital inkjet print
10x24cm

46. *COB: Linear Loop I*
digital inkjet print
20x140cm

47. *COB: Linear Loop II*
digital inkjet print
20x153cm

48. *COB: Linear Loop II*
digital inkjet print
11x140cm

Practical Work 2011

49. *COB: Linear Loop 100*
digital inkjet prints
dimensions variable

50. Study
pen and tracing paper
21x30cm
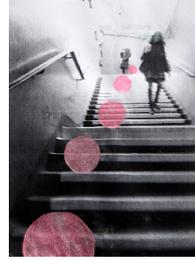
51. Study
laser print and mixed
media
15x21cm
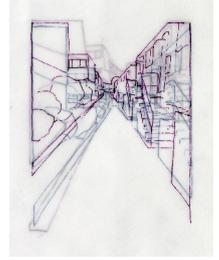
52. Study
pen and tracing paper
9x11cm
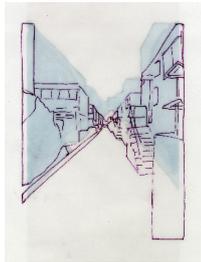
53. Study
pen, marker, tracing
paper
9x11cm
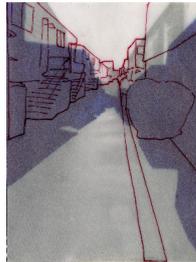
54. Study
laser print, pen, marker,
tracing paper
9x11cm
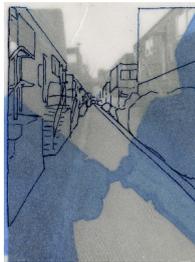
55. Study
laser print, pen, marker,
tracing paper
9x11cm

56. Study
pen and tracing paper
21x30

57. *RC 5 Jan*
digital inkjet print
18x75cm

58. *RC 15 Jan*
digital inkjet print
18x55cm

59. *BG Stop, Again*
digital inkjet print
23x31cm
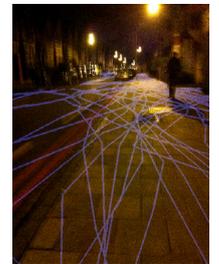
60. *Blenheim Gardens,
Again*
digital inkjet print
23x31cm

61. *Brixton, Again*
digital inkjet print
23x31cm

62. *Brixton in the Rain,
Again*
digital inkjet print
23x31cm

63. *Green Park, Again*
digital inkjet print
23x31cm

64. *Jay Mews, Again*
digital inkjet print
23x31cm

Practical Work 2011

65. *Ramilles Close, Again*
digital inkjet print
23x31cm

66. *Reflection I*
digital inkjet print
23x31cm

67. *Reflection II*
digital inkjet print
23x31

68. Stop
digital inkjet print
10x14cm

69. *Caught*
digital inkjet print
28x43cm

70. *Brixton Stairs*
digital inkjet print
35x48

71. *Cut*
digital inkjet print
24x55cm

72. *Down the Stairs*
digital inkjet print
33x48cm

73. Up the Stairs
digital inkjet print
33x48cm

74. *Kensington Gore*
digital inkjet print
28x43cm
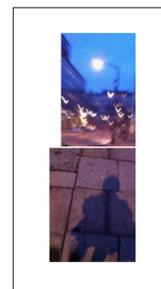
75. *PC Road*
digital inkjet print
20x37cm

76. *Turn*
digital inkjet print
28x43cm

77. *Interstitial Frame*
digital inkjet print
11x14cm
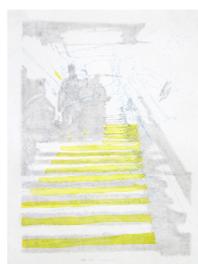
78. *Green Park, 5 February 2011*
graphite, marker, gouache
57x76cm

79. *Green Park, 7 February 2011*
graphite, marker, gouache
57x76cm

80. *Home in the Evening*
graphite and marker
57x76cm

Practical Work 2011

81. *On the 9*
graphite, marker,
gouache
57x76cm

82. *Brixton Stairs*
graphite, marker,
gouache
57x76cm

83. *Tracking Home*
inked woodblocks
81x122cm each

84. *Tracking Home*,
detail

85. *Tracking Home*,
detail

86. *Tracking Home*,
detail

87. *Tracking Home I*
woodblock print
99x152cm

88. *Tracking Home II*
woodblock print
99x152cm

89. *Tracking Home III*
woodblock print
99x152cm

Practical Work 2012

90. *Tunnelling*
gouache, marker,
graphite
84x119cm

91. *Threshold*
gouache, marker,
graphite
84x119cm

92. *Bus Stop*
gouache, marker,
graphite
84x119cm

93. *Platforms*
goache, marker,
graphite
84x119cm

94. *Tunnelling II*
gouache, marker,
graphite
54x54cm

95. *3 COB's*
digital inkjet print
20x46cm

96. *The Distance Home*
digital inkjet print
24x45cm

97. *Diptrych I*
digital inkjet and
woodblock print
61x144cm

98. *Diptrych I*, detail

99. *Diptrych II*
digital inkjet and
woodblock print
61x61cm

100. *Two Steps*
woodblock prints
122x173cm each

101. *Two Steps,* detail

102. *Two Steps*, detail
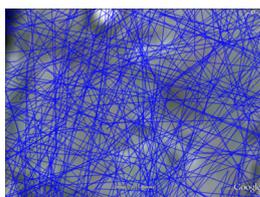
103. *The Fiction of the
Nest*
words and images
(PDF in Appendix 3)

Practical Work 2013
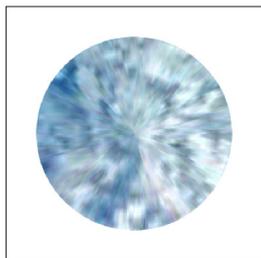
104. *God's Eye I*
digital inkjet print
80x80cm

105. *God's Eye I*, detail

106. *God's Eye II*
digital inkjet print
80x80cm

107. *God's Eye II,* detail

108. *God's Eye III*
digital inkjet print
80x80cm

109. *God's Eye III*, detail

110. *God's Eye IV*
digital inkjet print
80x80cm

111. *God's Eye IV*,
detail

112. *God's Eye V*
digital inkjet print
80x80cm

113. *God's Eye V*, detail
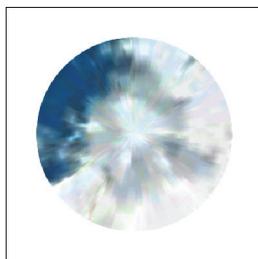
114. *God's Eye VI*
digital inkjet print
80x80cm

115. *God's Eye VI*,
detail
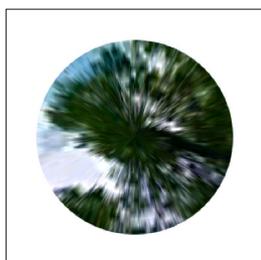
116. *God's Eye VII*
digital inkjet print
80x80cm

117. *God's Eye VII,*
detail
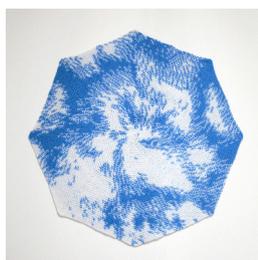
118. *Octagon Sky*
handmade digital
image object in
crocheted yarn
80x80cm
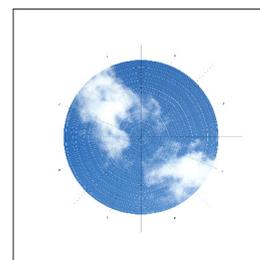
119. *Scribal Drift:
Sampled Source*
digital inkjet print
60x60cm

Practical Work 2013
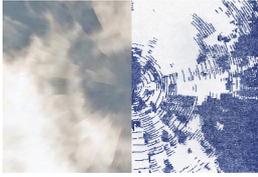
120. *Cloud Diptrych, v. 1*
digital inkjet and woodblock print
61x86cm

121. *Cloud Diptrych, v. 2*
digital inkjet and woodblock print
61x86cm
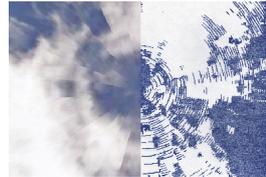
122. *Cloud Diptrych, v. 3*
digital inkjet and woodblock print
61x86cm

123. *Addendum Sky: Sampled Source*
digital image

124. *Addendum Sky*
handmade digital image object in crocheted yarn
114x200cm

125. *Addendum Sky*, installed

126. *Addendum Sky, detail*

127. *Addendum Sky*, installed

128. *Voices at the Table*
short lecture-performance

Practical Work 2014

129. *Scribal Drift* (floor), *An Image of Nothing* (back left) and *White Screen III* (back right)

130. *Scribal Drift* installation of handmade digital image objects in crocheted yarn

131. *Scribal Drift*

132. *Scribal Drift*
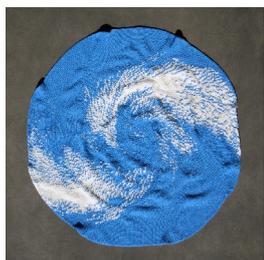
133. *Scribal Drift* first iteration approximately 120cm wide

134. *Scribal Drift* second iteration approximately 120cm wide

135. *Scribal Drift* third iteration approximately 120cm wide

136. *Scribal Drift* fourth iteration approximately 120cm wide

137. *Scribal Drift* fifth iteration approximately 120cm wide

138. *An Image of Nothing* and *White Screen III* digital inkjet prints 70x70cm each

139. *An Image of Nothing* digital inkjet print 70x70cm
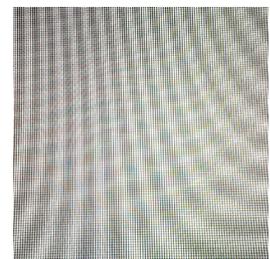
140. *White Screen I* digital inkjet print 70x70cm

141. *White Screen II* digital inkjet print 70x70cm
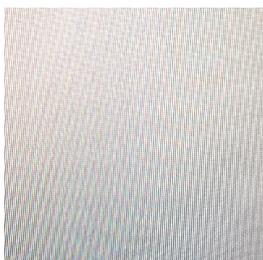
142. *White Screen III* digital inkjet print 70x70cm
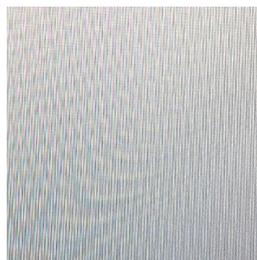
143. *White Screen IV* digital inkjet print 70x70cm
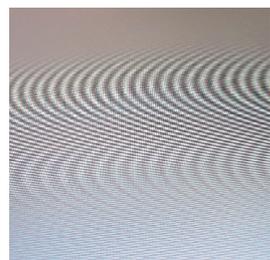
144. *White Screen V* digital inkjet print 70x70cm

Practical Work 2014
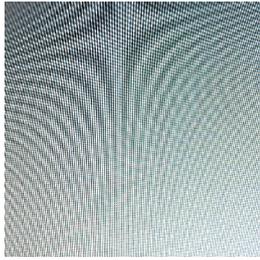
145. *White Screen VI*
digital inkjet print
70x70cm
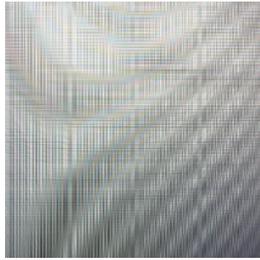
146. *Sampled Screen I*
digital inkjet print
90x90cm

147. *Sampled Screen II*
digital inkjet print
90x90cm
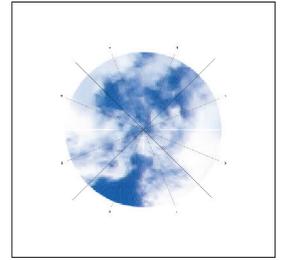
148. *Auxillary: Sampled Source*
digital inkjet print
60x60cm

149. GIF clip from
Thanatophobia,
looping digital
projection

150. GIF clip from
untitled projection

Appendix 2   Text for Sound

IMG0089.jpg

I leave the house, lock the door, and press the Home button on the phone to wake it. I swipe the arrow to unlock the phone. I touch the GPS application, touch its Dashboard feature, and touch the Start button. I wait to see the clock start, then press the Home button to exit the application. I begin walking toward Blenheim Gardens. I touch the Camera application. I touch the rectangular, round-edged shutter button which features an illustration of a camera. I touch the button three times as I walk, slowing my pace on the last touch. I cannot see the screen because there is a woman coming toward me. I don't want her to see what I'm doing, so I hold the phone close to my chest, blindly shooting with my thumb. This manner of taking photos one-handed is physically awkward. The device is not light for its size and is prone to fall forward when I hold it in this way. My wrist cramps when I do this for very long.

I walk off the estate and onto the street, crossing diagonally in the direction of a psychedelically painted bar with a large Rottweiler on the roof. I press the Home button, swipe the arrow, and touch the Camera application. Still walking, I know the application will not boot quickly enough for me to take a photo of the dog today. I touch the shutter button as I pass between the post office on the left and a red letter box on the right. I touch the shutter two more times as I pass a postal worker pushing a cart and cross a side street. I press the Home button to exit the application and place the phone in my jacket pocket. I walk another block. Just before reaching Brixton Hill, I take the phone from my jacket pocket, press the Home button to wake it, swipe the arrow to unlock it, and touch the Camera application. I touch the shutter button six times, three as I round the corner, three times more as I run to catch the 118 just coming to a stop about twenty yards away. I press the Home button to exit the application and slip the phone into my bag as I step onto the bus. I take a standing position near the exit doors, leaning with my back against the glass so that I face forward for a three-stop ride to Brixton Station. I take the phone from my bag, press the Home button, swipe the arrow and touch the Camera application. With the phone tucked against my chest, my hand and wrist contorted, I touch the shutter button twice, then press the Home button to exit the application. I take the phone away from my chest to look at the screen's neat rows of square buttons with their evenly rounded corners. I touch the Notes application, then touch the brown plus sign button in the upper right hand corner to begin a new note. I look behind me and count the number of people on the bus. I hold the device in my left hand and type with the index and middle fingers of my right:

118 to Brixton Hill 9 seared three others standing one carriage

There is no time for punctuation or editing. I accept any auto corrections to my two-finger fumbling. I press the Home button to exit the application, then touch the Camera application. I turn toward the glass doors and with the phone tucked to my chest, I touch the shutter button twice as the bus passes a nightclub then a side street. I touch the button once more as the bus passes a group of people on the sidewalk. The driver applies the brakes, I lose my balance momentarily, and so press the Home button to prevent other passengers from seeing the Camera application in use.

The bus comes to a stop in front of the department store opposite the Underground. Still facing the doors, I touch the Camera application and tuck the camera to my chest in my right hand. As the doors slide open I step out, touching the shutter button with my thumb three times before I make a full right turn. I step to the right of a man walking ahead of me, hoping for a clearing of people. I touch the shutter button four times as I weave through people walking in all directions. I hear the beeping of the crosswalk, turn right and touch

the shutter button three times as I cross the street and descend the stairs into the station. I press the Home button and put the phone in my pocket before entering the stiles. Walking to the escalator, I take the phone from my pocket, press the Home button, swipe the arrow and touch the Camera application. Standing on the right of the escalator, I tuck the phone to my chest and touch the shutter button three times with my thumb. Half way down the escalator, I step to the left and walk down the rest of the way, my right hand still holding the camera against my chest. My thumb touches the shutter twice as I descend the moving stairs, once as I turn toward the platform. It touches the shutter once as I jog to the car. It touches it once as I turn to take a seat on the car. I sit down, press the Home button and touch the Notes application. Holding the phone in my left hand and using the index and middle fingers of my right hand, I type:

Ran to catch dirty train to gp

I press the Home button and put the phone into my bag. The tube is not crowded, but I am facing a woman and do not want to take a frontal photograph of her.

The phone remains in my bag until the train leaves Victoria. Still seated, I take the phone from my bag, press the Home button and swipe the arrow. I stand and squeeze through passengers to face the doors. I hold a rail to the left of the doors with my left hand. With my right, I touch the Camera application and tuck the phone to my chest. I touch the shutter button with my thumb as the train comes to the platform and slows. The doors open and I step down, touch the shutter button, and turn to walk along the platform toward the exit. Weaving around slow moving travellers wielding rolling suitcases, I touch the button twice. I press the Home button, but do not put the phone away. Reaching the escalator, I press the Home button, swipe the arrow and touch the Camera application. I stand on the right side, holding the camera to my chest, but this time at an upward angle. I touch the shutter three times, step to the left and begin walking up the moving stairs. I touch the shutter twice as I reach the top of the escalator and turn left to walk toward the stiles. I press the Home button and place the phone in my right jacket pocket. Once I am through the stiles, I take the phone from my pocket, touch the Camera application and tuck the phone to my chest. I touch the shutter once as I descend a half flight of stairs. I touch the shutter twice in the corridor as I pass the public restrooms. I touch the shutter four times as I mount the stairs to exit the station, ascend the first flight, cross the landing, and ascend the second flight. I touch the shutter twice as I turn right and walk toward the bus stop. I press the Home button and place the phone in my right jacket pocket. The 22 is the first bus to arrive. I step onto the bus, take the phone from my pocket, press the Home button, and swipe the arrow. I take a seat in the second row. It is slightly elevated and I am on the aisle. There are no passengers behind me. I touch the Camera application and holding the phone in my left hand at my eye level, I touch the shutter button three times at varying lateral angles. I press the Home button and touch the Notes application. Using the index and middle fingers of my right hand, I type:

22 to hpc three others seated

I press the Home button and touch the Camera application. I turn the phone toward the window, and touch the shutter button with my right index finger. I touch the shutter five times as the bus travels parallel to a long, green hedge. The hedge features a few small breaks, revealing a brighter green. I press the Home button and place the phone in my left jacket pocket. I stand, touch the bell, walk to face the doors, take the phone from my pocket, touch the Camera application and tuck the phone to my chest. The bus stops at Hyde Park Corner. The doors slide open and I step out, my thumb touching the shutter twice as I jog to catch the 52. I touch the shutter once as I step onto the bus. I press the Home button and place the phone in my right jacket pocket. I take an aisle seat in the elevated second row. I take the phone from my pocket, press the Home button, swipe the arrow, touch the Notes application. Using the index and middle fingers of my right hand, I type:

52 to RCA six others seated two standing smelly as usual, paint chipped poles

I press the Home button, touch the Camera application, tuck the phone to my chest and touch the shutter button three times. There is a woman seated to my left. I cannot take photos out that window. Sliding my arm to my right side to keep the screen concealed, I turn my wrist 45 degrees to the right. My thumb touches the shutter 5 times. The bell rings. The woman to my left stands. I press the Home button, stand and step into the aisle. She passes in front of me. I resume my seat, turn to the window, touch the Camera application and holding the phone at eye level in my left hand, I touch the shutter seven times while the bus passes backlit images of androgynous teenagers, then apartment buildings and embassies. I press the Home button and put the phone in my jacket pocket. I reach across the aisle and ring the bell. I stand and walk to face the doors. I take the phone from my pocket, press the Home button, swipe the arrow, touch the Camera application and tuck the phone to my chest. I touch the shutter button three times as the bus passes a row of blue and gray bikes and comes to a halt. The doors slide open. I step out, touching the shutter button twice as I turn to the right. I touch the button once as I pass bicycles in racks on my left. I turn left and feel cobblestone beneath my feet, touch the button once, angle the phone toward the ground and touch the button once more. I press the Home button and touch the GPS application. I come the door of a building, reach with my left hand to open the door, and touch the End Track button with the thumb of my right. Walking into the hall of the building, I touch the Saved Data button at the bottom of the screen. It features a blue folder icon. The Options screen appears. I touch the arrow-shaped Back button at the top left of the screen. I touch the arrow-shaped Tracks button at the top left of the screen. There are three lines of text indicating three recorded tracks. I touch the round blue button to the right of the first. The track of this trip appears as a blue line on the map. I touch the rectangular Detail button at the top right of the screen. I touch the Options button. I touch the round-edged rectangular Export button. An e mail draft appears, my address in the To: field. I touch the blue, rectangular Send button in the upper right corner. A translucent window appears notifying me that "It may take several minutes to receive the data." I touch the wide, round-edged, rectangular OK button. I press the Home button. The phone vibrates as I put it in my left jacket pocket, indicating a received message.

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