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The Things We Know but Cannot Explain: an Inquiry into the Nature and Significance of Artistic Knowledge as a Subset of the Larger Category of Tacit Knowledge

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A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy

The Things We Know but Cannot Explain: an Inquiry into the Nature and Significance of Artistic Knowledge as a Subset of the Larger Category of Tacit Knowledge

(Integrated Article)

by

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A thesis submitted in partial fulfillment
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Abstract

This dissertation is an inquiry into the nature and significance of artistic knowledge, as a subset of the larger category of tacit knowledge. Art, both in its production and reception, encompasses many diverse forms of knowledge, so by artistic knowledge I am referring to the intangible components of art that do not conform to traditional notions of codified, propositional or explicit knowledge.

Such forms of qualitative and subjective knowledge are undervalued within our current Western context, which is dominated by a rational, objective and scientific mode of thought. This is primarily due to the impossibility of quantifying such intangible knowledge, or measuring its results.

As someone with a background in both science and art I can see great value in both forms of knowledge and feel it is critical to find ways of combining different ways of knowing otherwise an awareness of the bigger picture and an interconnected view of the world is lost. The integrated articles included in this dissertation explore the application and potentials of artistic knowledge and arts-based research within science (Chapter 2: “The Idea of Colour”), design (Chapter 3: “Design of the Absurd”), and art history (Chapter 4: “An Uncertain Experience”). Additionally, my own projects, *The One Pixel Camera*, *Locations*, and *A Series of Boring Videos: Watched, Watching, Watch* are discussed (Chapter 3: “Design of the Absurd, Chapter 5: “A Brief Statement on Locations" and Chapter 6: “How to Watch Video” respectively) as artworks that present single or very limited modes of knowledge transfer. On one level, these limitations might work to frustrate the viewer, but on another, they open up the potential for new forms of appreciation and new ways of knowing.

Keywords

Artistic Knowledge, Tacit Knowledge, Arts Based Research, Photography, Video Art, Intersections of Art and Science, Colour, Politics of Design, Documentation of Performance Art, The One Pixel Camera, Locations, A Series of Boring Videos.

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Methods Statement

This dissertation applies a multifaceted approach in order to contend with the ineffable nature of tacit knowledge. The goal, ironically, is to make the tacit explicit. As an exceedingly complicated task, due to the personal and internal qualities of tacit knowledge, it cannot be generalized to a universal account, nor accomplished through the presentation of quantifiable data. Consequently, multiple perspectives and approaches have been used in order to converge on a new understanding of the significance of tacit knowledge, and to explore ways in which it can be combined with explicit forms of knowledge where both function on an even playing field.

I acknowledge that this dissertation does not provide a full analysis of the complicated nuances of tacit and explicit knowledge. For the purposes of better illustrating the specific issues presented in this dissertation I felt it necessary to approach the problem as a binary, in a dualistic and polemic manner.

To accomplish this goal I incorporate three main strategies: I draw from theorists in a variety of fields that discuss the merits of tacit knowledge; I present a series of artworks that produce simple or very limited modes of knowledge transfer in order to lead the viewer towards a greater appreciation of tacit knowledge; and I include case studies that demonstrate situations where tacit knowledge can augment explicit knowing and enhance overall cognition.

The case studies include examples from the early days of modern science when tacit ways of knowing were still appreciated; it illustrates how the designed objects around us and the tools we use affect us and control our actions on a subsidiary and tacit level; it looks at the work of artists who make use of tacit methods in order to produce a more profound awareness on the part of the viewer; it discusses samples from my own art practice and explains how I endeavor to transfer tacit knowledge through my artwork; and it includes a discussion of my experience documenting performance art events and how these mediated documents can work to tacitly convey an experience of the originating event. When assembled as a whole, these case studies encompass the role of tacit knowledge in the primary activities of art production and reception. In so doing, they present a specific analysis of the significance of artistic knowledge as it exists within the realm of tacit knowledge.

Preface

For a visual artist functioning within an academic context, the question of "artistic knowledge" is always an issue: what is it that artists, actually know and how can they share this knowledge with others? In fact, the very existence of a studio-based PhD program is a matter of contention, and there are many who would argue that ineffable artistic knowledge has no place in the academy. Others claim that applying an academic research approach to art production is detrimental to the very essence of art.[1]

The difficulty primarily stems from the impossibility of quantifying artistic knowledge and measuring its "results".[2] Artistic knowledge cannot be transferred through explicit, linguistic means, but instead is uniquely produced within the individual through their own personal engagement and embodied experience.

Artistic knowledge is aligned with philosopher Michael Polanyi's concept of *tacit* knowledge (personal knowledge that cannot be articulated through verbal means), which exists in contrast to what he refers to as *explicit* knowledge (formal, codified, linguistic knowledge).[3] It should also be noted, that tacit knowledge is by no means exclusive to art. It is the knowledge we use to navigate the world on a daily basis, it drives the realms of craft and design, and even plays a role in the sciences (especially in the early stages of hypothesis generation). However, due to its qualitative and subjective nature, it is given little credit and generally ignored as a valid or credible form of knowledge. I see this as problematic because much of what it is to be human is based in tacit understanding and most innovation, at its root, stems from some form of tacit or gut-based intuition.[4]

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1 See James Elkins' book *Artists with PhDs: On the new Doctoral Degree in Studio Art* for an extended discussion on this issue.

2 Art, both in its production and reception, encompasses many diverse forms of knowledge, so by artistic knowledge I am referring to those components of art that do not conform to traditional notions of codified, propositional, or explicit knowledge.

3 Further exploration of these concepts can be found in Chapter 1 of this dissertation.

4 An expanded discussion of these issues is also found in Chapter 1.

As someone with a background in both science and art, I can see great value in the knowledge and epistemological systems of both areas: science primarily aligned with explicit forms of knowing, and art with tacit. Historically, these areas were not so divided and it was common to encounter artist/scientists and mathematician/philosophers, but such hybrids are now quite rare. I feel it is critical to find ways of combining such fields and to resist the drive towards specialization and purification. Without an amalgamation of knowledge, an awareness of the bigger picture and an interconnected view of the world is lost. More than ever before, an integrated and comprehensive understanding of the world is needed—and it is this viewpoint that informs and drives my research and artistic production.

I would propose that art provides us with ways to increase the appreciation of tacit understanding and encourages us to accept composite ways of knowing that involve both tacit and explicit approaches. On one level, art is an effective means of transferring tacit knowledge: through a process of showing rather than telling, and by constructing specific *experiences* for the viewer. On another level, if done properly, art can make us aware of our own perception and the ways in which we construct our personal understandings of the world—thus demonstrating the significance and importance of tacit knowing in relation to these processes. How such knowledge can be applied in science, design, art history and to my own artwork will serve as the core of the discussion for the following series of integrated articles, which comprise my dissertation.

Chapter 1 – Introduction: Theoretical Background

Chapter 1 serves as an introduction to the overall scope of my research, presenting a theoretical background on different forms of knowledge and their significance, as well as defining my primary research questions:

1) What exactly are tacit forms of knowing?
2) Why are tacit ways of knowing important, and why should we care?
3) What can be done to increase awareness, acceptance and appreciation of this type of knowledge within contemporary culture?

Chapter 2 – The Idea of Colour: Newton's Skeleton, Goethe's Gentle Empiricism and Olafur Eliasson's *Room for One Colour*

Chapter 2 looks at the specific case of colour perception, where neither an explicit scientific approach (Newton), nor an experiential tacit approach (Goethe), will result in a full understanding of the phenomena. Instead, a composite approach is required. This chapter will explore the advantages and limitations of both approaches, as well as considering comingled alternatives, such as Alva Noë's model of Active Perception. Additionally, experiential artworks, such as Olafur Eliasson's *Room for One Colour*, will be examined as a means for the viewer to gain a greater tacit understanding of phenomena such as colour, while at the same time developing a deeper understanding about the nature of our own perception.

Chapter 3 – Design of the Absurd: *The One Pixel Camera*

Chapter 3 considers tacit knowledge within the realm of design, how the manufactured objects and infrastructure around us contain hidden politics and prescribe specific behaviors through features of their design. Through the process of design, certain actions are made to be *intuitively obvious*, while the possibility of other actions is entirely eliminated. To explore the tacit politics of design, this chapter will draw from the writings of Bruno Latour, Langdon Winner and Vilém Flusser. Additionally, my own artwork, *The One Pixel Camera Project*, will be discussed as an absurdist "performance" of technology that works to make the hidden politics of design more tangible to the viewer, on an intuitive level, through the production of an apparatus with an incredibly restrictive design.

Chapter 4 – An Uncertain Experience: the Production and Viewing of Photographic Documentation from Performance Art Events

The tradition of performance art is premised on the "authentic" tacit experience of being present in the live audience. However, due to the limitations of time and space, such an ideal

experience is rarely possible, so photographic documentation serves as its best proxy—especially for art-historical purposes. Drawing from theorists such as Peggy Phelan, Amelia Jones and Philip Auslander, as well as my own personal experience photographing performance art, this chapter explores the dynamic between the experience of being there live and the "experience" of viewing the photographic document. Additionally, the role played by the photographer is considered in terms of how photographic decisions subjectively shape the eventual visual document and how both the photographer's body and the mere presence of the camera alter the dynamic of the originating performance event.

This chapter argues that the eventual performance document is not an "objective" document produced by a fly-on-the-wall entity. Rather than lamenting it as a weakness, I propose that the viewer might view the mediation of the photographer in a positive light: as a transfer of tacit knowledge that presents an experience of the photographer's experience. Through such an approach, the experience of the photograph becomes a richer and more embodied experience in itself.

Chapter 5 – A Brief Statement on *Locations*

This chapter presents a brief description of my *Locations* project. *Locations* consists of a series of images depicting banal, yet enigmatic landscapes; there is a logic and a rationale behind the images, and the selection of locales, but this will remain intentionally unstated. *Locations* is meant to function in contrast to the *One Pixel Camera Project* : where the *One Pixel Camera Project* is reliant on the use of explicit captions, *Locations* does away with captioning altogether leaving only the uncoded content of the images to explain and provide meaning in the work.

Chapter 6 – How to Watch Video: The Benefits of Becoming Bored

Chapter 5 looks at my project, *A Series of Boring Videos*, which consists of three videos: *Watched* (2011), *Watching* (2012) and *Watch* (2014). Each video pertains to a specific idiom of boredom: "a watched pot never boils", "watching paint dry" and "to watch grass grow",

respectively. Beyond a simple tongue-in-cheek literalization of these adages, the videos are meant to encourage the viewer to engage in a close and considered look at what, in actual fact, are very complex physical, chemical, biological and psychological phenomena.

This type of close viewing yields an intuitive and tacit understanding of the phenomena depicted, and ideally a greater awareness of the process of perception itself. The chapter explores the potential of "boredom," as a way of pushing past literal and explicit understanding, and exhibition strategies that may encourage viewers to engage with the work in an extended and profound way.

Chapter 7 – Documentation of *The Things You Know but Cannot Explain* (McIntosh Gallery, June 12 - July 12, 2014)

A visual chapter depicting the exhibition of artwork produced as part of my research: *The One Pixel Camera*, *Locations*, and *A Series of Boring Videos: Watched, Watching, Watch*. The exhibition explores the ways in which we construct our understanding of the world, through combinations of tacit and explicit forms of knowledge. Each of the works in this exhibition present single, or very limited, modes of knowledge transfer. On one level, these limitations might work to frustrate the viewer; on another, they open up the potential for new forms of appreciation and new ways of knowing.

Chapter 8 – Conclusion

Chapter 8 offers an overview of the various chapters and a discussion of how they specifically relate to the research questions posed in the introduction. It includes a further analysis of the ways art and arts-based research can inspire further acceptance of tacit ways of knowing and work towards a more integrated and comprehensive understanding of the world.

Works Cited

Elkins, James. *Artists with PhDs: On the new Doctoral Degree in Studio Art*. Washington, D.C.: New Academia Publishing, 2009. Print.

Chapter 1

1 Introduction: Theoretical Background

The dominant mode of thought for our current age, in the western world, is one based in rationality; objectivity; universality; deductive logic; explicit, denotative language; abstraction; a reduction of things to their constituent parts; and an emphasis on utility. It primarily emerged during the time of the Enlightenment, following Descartes' distrust of the senses and separation of the body from the mind, although it can also be found to have roots in the Platonic emphasis on reason and ideas (Forms) over experience of the material world.

This mode of thought has developed and increased in dominance over the years, reaching a pinnacle in modernism, continuing on through post-modernity and persisting in the present moment. In many ways, this trajectory of thought has served us well and brought about many scientific and technological advancements, as well as greatly increasing our material standard of living; however, it has not come without a price. Philosopher and psychiatrist Iain McGilchrist characterizes our modern era as having "an excess of consciousness and an over-explicitness in relation to what needs to remain intuitive and implicit; depersonalisation and alienation from the body and empathic feeling; disruption of context; fragmentation of experience; and the loss of 'betweenness' " (397).

We live in an age based on a logical, mechanical model of the world, where much of what it is to be human is lost, rejected or downplayed in significance. As described by philosopher Michel Serres: "We have lost, without recourse, the memory of a heard, seen, perceived world, experienced by a body devoid of language." (339) We pass over our subjectivity and our intuition, focusing on the parts with little concern for the whole. Feelings, senses and tacit understandings are viewed as untrustworthy; the qualitative mode of understanding is replaced by the quantitative, in which everything must be measured and categorized in order to determine its utility and value. We are no longer situated in context, not even within our own bodies, and have come to view the world from above: from nowhere. For Serres, a new theory of knowledge is required, one that "brings together the exact and the human sciences" for "It is only on this condition that we shall escape our collective death" (Serres 51).

The philosopher Michael Polanyi uses the term "explicit knowledge" to describe this rational, logical mode of thought. However, Polanyi does not value explicit knowledge above all else. He instead sees it as a pole on a continuum of knowing, along axes of activity and awareness, with "tacit knowledge"—personal intuitive knowledge that cannot be articulated through verbal means—as the opposite pole. For the purpose of simplicity, I will often make use of his terms "explicit" and "tacit"[1] as shorthand to describe the two ways of knowing described above. I am aware that the discussion of tacit and explicit is more complex and nuanced than addressed in this dissertation; however, I felt it necessary to approach this discussion as a binary in order better illustrate the issues presented.

In terms of my own research, I am interested in the ignored and undervalued tacit ways of knowing, which are often associated with the arts. This is not to say that they should serve as a replacement for logical, analytical thought, but rather that they should work in combination to form a greater, more complete and holistic understanding of the world and ourselves within it. Specifically I am interested in looking at the following questions:

1. What exactly are tacit forms of knowing?
2. Why are tacit ways of knowing important, and why should we care?
3. What can be done to increase awareness, acceptance and appreciation of this type of knowledge within contemporary culture?

When I started this research, I was specifically interested in the intersection, interactions, and differences between art, science and technology and in interrogating how these fields have shaped our perception and understanding of the world. Over time and through my research process, I came to see that it was not just that these fields that changed our perception and understanding of the world, but also that our modes of perception and understanding significantly shaped and constructed these fields. With this in mind, my interest shifted from primarily looking at art and science to exploring the ways of knowing described above: how they interact with one another, how they can be combined, as well as how they are emphasized, promoted and constructed within the specific epistemologies of art and science.

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1 These terms are unpacked in greater detail later in this chapter.

1.1 Question 1: What exactly are these tacit forms of knowing?

Many theorists have written about the tensions between distinct types of knowledge and epistemologies, and about what happens when a single type of knowing comes to dominate a current worldview. For instance, Heidegger sees our modern age as one premised on a process of "enframing." Enframing describes an explicit way of viewing and thinking about the world from a reductive and rational perspective such that it is seen only for its utility, as resource or as "standing reserve." For Heidegger, this is a new way of picturing the world, brought about by the advent of the Industrial Revolution and specifically modern technology. Elsewhere, he describes a difference between "objects" and "things," not as different types of physical entities, but as different ways of perceiving and experiencing items in the world. An "object" is the mere objective, explicit understanding of an item, whereas a "thing" is something that contains meaning and is understood on a more tacit and subjective level. According to Heidegger, "Science's knowledge, which is compelling within its own sphere, the sphere of objects, already had annihilated things as things long before the atom bomb exploded" ("Thing" 168). However, it is not just science that strips meaning away from "things" — any overly explicit explanation will do the same. A simple example of this is the way explaining a joke ruins its impact.

Often, explicit ways of knowing are associated with the notion of objectivity. As Lorraine Daston and Peter Galison describe in their book *Objectivity*, this concept is not something that has always been around but rather a new epistemology that emerged in the mid-nineteenth century:

> Perhaps the most disorienting feature of the history of scientific objectivity was not, as we had originally assumed, the bare assertion that objectivity had a history, but rather the specifics of just when and how that history began. The shock was that the emergence of objectivity in the mid-nineteenth century did not coincide with any of the conventional accounts (which vary from discipline to discipline and among national traditions) of the origins of modernity: not with the scientific revolution, in the seventeenth century, the political revolutions of the late eighteenth century, or the industrial and technological revolutions of the turn of the twentieth century. (3)

According to their research, objectivity does not have a specific cause, but instead emerged alongside the modern concept of subjectivity, which also has a history of its own:

> ... objectivity and subjectivity emerged in tandem, and the explanation is the demarcation line between them. Like the similarly complimentary pair male/female, the details of what characteristics fall on one or another side of the boundary are less important than the extraordinarily elastic and resilient structure of the structure itself. (5)

For Daston and Galison, it is the identification and separation itself that created the distinct ways of knowing, which over time further divided to the point where objective, explicit ways of knowing became the *only* way to produce proper scientific knowledge.

Originally, even in science (or natural philosophy as it was once called), there was no distinction between objectivity and subjectivity. Science was based in extended and careful sensory observations and intuitive interpretations of what was contextually seen, smelt, tasted, felt or heard. From these interpretations, an ideal, archetypical and holistic understanding of natural phenomena could be achieved by the "sage-like" (371) figure of the natural scientist. In order to transfer this intuitive, tacit knowledge, the scientist would work in close collaboration with artists and illustrators. Through a process of "four-eyed sight" (Daston and Galison 88), they would work in tandem to produce drawings for scientific atlases depicting archetypical examples of the phenomena and organisms observed. For Daston and Galison, the emergence of objectivity is linked to differing notions of the "scientific self," which shifted over time as new "codes of epistemic virtue" came into play (18). This early form of "scientific self" involved a mixture of tacit and explicit knowledge, demonstrating what Daston and Galison coin as a "truth-to-nature" (58) code.

With the development of better instruments and technology, coupled with a rising distrust of the accuracy of "sage-like" intuition, a new form of scientific self emerged, whose goal was not to *interpret* nature as such, but instead to "let nature speak for itself" (120). The interpretive drawings of the artist slowly gave way to instrument-based measurements and, most significantly, photographs. Photographs associated with this mindset were produced in a mechanical and direct way that would *supposedly* eliminate all traces of mediation and

subjective interpretation. Through this, the code of "mechanical objectivity," (121) which claimed a direct and unmediated connection to nature itself, was born.

Of course, photographs can never be made without human interference and/or subjectivity. Over time, this mechanical objectivity viewpoint shifted and eventually even photographs were deemed untrustworthy. Only purely mathematical and logical structures could be considered valid material through which to produce scientific knowledge, thus removing science from the physical world and repositioning it in abstraction and purely explicit knowledge. Daston and Galison use the term "structural objectivity" to describe this phase of the scientific self, though it permeates far beyond the realm of science:

> Objectivity ... was not about sensation or even about things; it had nothing to with images, made or mental. It was about enduring structural relationships that survived mathematical transformations, scientific revolutions, shifts in linguistic development, cultural diversity, psychology evolution, the vagaries of history, and the quirks of individual physiology. (259)

This may seem like a bit of an endgame where all knowledge of the *actual* world and of our experience in the world has come to be ignored and passed over; however, all is not lost. Daston and Galison present a new type of scientific self that makes use of human subjectivity through a process of "trained judgement" (309). [2] In reaction to pure, structural objectivity, this emergent self makes use of "mechanically objective" images, but interprets such images through intuitive means. However, this form of intuition is not the same as that of the sage-like "truth-to-nature" scientific self, because it is taught and applied as a simple skill. Trained judgement does not return scientific knowing fully to the world and to ourselves, but the acceptance of such tacit knowledge within science does provide some hope.

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2 I can relate to this on a personal level by way of a past engineering job at Ontario Hydro that involved the reading and interpretation of images produced by an ultrasonic inspection system used on nuclear reactor pressure tubes. The images presented time as a physical dimension (relating to the time taken for the ultrasonic wave to travel, which corresponds to a distance in a round-about way). It took me about a month of exposure to this type of imagery before I was able to discern the significant features seen by other more experienced individuals in the lab.

Often this distinction between objectivity and subjectivity is seen as the primary difference between science and art; [3] however, as seen by Daston and Galison, objectivity itself not a fixed quantity and in earlier times was not even an aspect of science. Additionally, it should be fairly obvious that neither science nor art is based solely in either objectivity or subjectivity, but that *both* fields contain aspects of *both* ways of constructing knowledge. In his well-known essay, "The Two Cultures," C.P. Snow describes the difference between science and the humanities (arts) as one based not in epistemology, but rather in cultural difference. Each group is invested in its own, mutually exclusive, body of knowledge and presents an almost hegemonic disdain for the knowledge of the other, viewing it as something not worthy of consideration.

Such "cultural" differences are indicative of the modern drive towards specialization, purification and the separation of knowledge into distinct categories and fields. Bruno Latour describes this as a key component in what he terms the "Modern Constitution" ("Modern" 13); however, for Latour this process of purification is never entirely pure in itself and is always coupled with underlying networks of "mediators",[4] "hybrids" and works of translation, even though the existence of such hybrids and mediators are strongly denied:

> The essential point of the modern Constitution is that it renders the work of mediation that assembles hybrids invisible, unthinkable, unrepresentable. Does the lack of representation limit the work of mediation in any way? No, for the modern world would immediately cease to function. Like all other collectives it lives on that blending. (Latour, "Modern" 34)

Ironically, Latour also claims that it is the very act of purification that makes hybrids possible in the first place ("Modern" 12): without a separation into categories, how could a hybrid be

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3 By "art" in this case, both the humanities and creative arts will be included together even though they might be considered as separate classes of their own.

4 Mediators are actors ("entities that do things" [Latour "Masses" 163], be they human or nonhuman - e.g. instruments, visual representations, texts) that transfer information/knowledge/belief through a process of translation. Often this translation takes place between distinct ontological categories (nature/culture, science/politics) and transform, distort and modify the meaning of the elements they carry. This concept of mediators and mediation is explored further in Chapter 4: *An Uncertain Experience*.

a hybrid of separate categories? So, according to Latour, categories such as art and science, science and politics, subjectivity and objectivity, perhaps even explicit and tacit knowledge, are never fully separate, and much of their perceived separation belongs to a modern ideal that was never actually true.[5] It is also interesting to note that the mediators and hybrids described by Latour function on an "unthinkable, unrepresentable" tacit level.

Returning to the general discussion of different modes of knowing brings us to Iain McGilchrist. As both a philosopher and psychiatrist, he draws from philosophy, history, cognitive science, and neuroscience to present a very thorough and convincing argument not only for the existence of the two distinct types of knowledge, but also for the source of this divide. McGilchrist associates this divide with the evolved division of the brain into left and right hemispheres, claiming that, over time, the left hemisphere's way of knowing and functioning has come to dominate and take precedence over the right hemisphere's activity and way understanding of the world. It should be noted, however, that his analysis goes much further than the traditional notion of the "left brain = logical", "right brain = creative" split-brain cliché, as McGilchrist presents a model of the brain where the two hemispheres are strongly intermingled and dependent upon one another:

> Gradually, with unfolding [neurological] research, it becomes obvious that both hemispheres seemed to contribute to language, both to visuospatial imagery: both were involved in reason and emotion, which were inextricably involved with one another. In fact it didn't matter what it was our brains were engaged with doing, both hemispheres were in it up to the neck (or whatever a hemisphere has for a neck). (McGilchrist, "Unhappy" 8)

The general thesis of McGilchrist's argument is that the brains of humans and higher animals have evolved into two hemispheres in order to accommodate two distinct modes of perception/cognition: the left is focused on details and a short term view, whereas the right concerns itself with the bigger picture and a more long-term view. In the case of a simple animal, such as a bird, the left hemisphere is useful for detailed tasks such as picking out and

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5 As indicated through the title of his book: *We Have Never Been Modern*.

identifying seeds against a background of grit, whereas the right keeps an eye out on the general context and detects potential threats (or changes and difference in a more general sense) (McGilchrist, "Unhappy" 10). In humans, the roles of the two hemispheres are much more complicated, as McGilchrist explains in detail:

> The world of the left hemisphere, dependent on denotative language and abstraction, yields clarity and power to manipulate things that are known, fixed, static, isolated, decontextualized, explicit, disembodied, general in nature, but ultimately lifeless. The right hemisphere, by contrast, yields a world of individual, changing, evolving, interconnected, implicit, incarnate, living beings within the context of the lived world, but in a nature of things never fully graspable, always imperfectly known—and to this world it exists within a relationship of care. The knowledge that is mediated by the left hemisphere is knowledge within a closed system. It has the advantage of perfection, but such perfection is bought ultimately at the price of emptiness, or self-reference. It can mediate knowledge, but only in terms of a mechanical arrangement of things already known. It can never really 'break out' to know anything new, because its knowledge is of its own representations only. Where the thing itself is 'present' to the right hemisphere, it is only 're-presented' by the left hemisphere, now becomes an *idea* of a thing. Where the right hemisphere is conscious of the Other, whatever that may be, the left hemisphere consciousness is of itself. (McGilchrist, "Master" 174)

These distinct types of knowing are very useful in that they allow us to look at and understand things in a multiplicity of ways depending on purpose and context. To explain this, McGilchrist uses the example of viewing a mountain: "A mountain that is a landmark to a navigator, a source of wealth to the prospector, a many textured form to the painter, or to another the dwelling place of the gods, is changed by the attention given to it. There is no 'real' mountain which can be distinguished from these, no one way of thinking which reveals the true mountain" ("Master" 28). Additionally, the left and the right work in tandem to detect and identify worldly phenomena, such as in the case of colour perception: the right hemisphere would perceive and interpret a particular colour sensation, where the left hemisphere would identify and name it "blue."

The problem, according to McGilchrist, is that the left hemisphere has a tendency to dominate thinking and place greater value upon its own way of knowing. With the left's focus on utility and its ability to manipulate the world, its worth is easily quantified, which provides one with a sense of power "and power is very seductive" (McGilchrist "Unhappy" 27). Additionally, the left hemisphere, with its narrow and logical focus, has a tendency to reject anything that does not agree with its perspective: "it offers very simple explanations, that are in their own terms convincing, because what doesn't fit the plan is simply declared to be meaningless" (McGilchrist, "Unhappy" 27). Following this second rationale, one can see how the left hemisphere would easily reject the right hemisphere's way of knowing as intangible and without quantifiable utility.

McGilchrist's split-brain explanation echoes many of the ideas presented by other theorists mentioned in this essay. Heidegger's notion of "enframing" can be understood as the left hemisphere viewing the world in terms of its utility. And the difference between "mere objects" and "things" seems to tie easily to the left and right hemispheres' respective views.[6] The rise of objectivity, as described by Daston and Galison, correlates with the rise of left-hemisphere thinking and a gradual rejection of the right.

C.P. Snow does not specifically demonstrate a conflict between left and right ways of knowing, but each "culture" demonstrates a left hemisphere tendency to dismiss as meaningless anything that does not fit within its own model. Even Latour's mediators, whether they be air pumps[7], microscopes, maps, printing presses, types of varnish, market forces, or the use of language itself (Latour, "Iconophilic"), can be seen to transform and translate knowledge in tacit ways undetectable (or at least denied and ignored) by the left.

Even though McGilchrist demonstrates a gradual increase of left-hemisphere dominance in recent years, he also explains that this is not a permanent state of affairs and that the left's dominance has waxed and waned in a cyclic manner throughout the course of human history.

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6 In fact, in *The Master and His Emissary*, McGilchrist draws extensively on the philosophy of Heidegger in terms of these aspects and many others.

7 Relating to Boyle's air pump, which is discussed in-depth by Latour. For a discussion of the origin of the experimental method and a vision of knowledge based in "matters of fact," see Shapin and Schaffer.

He specifically discusses phases in history where right-hemisphere ways of knowing existed on an equal level with those of the left, such as the Classical period in Greece, the Italian Renaissance, and the Romantic era of the late 18th and early 19th centuries in Europe. Not surprisingly, these are profound periods of human history in which many of the greatest developments in terms of culture, literature, art, science and technology took place. Between these phases are long spans of left-hemisphere dominance, such as that seen in our current postmodern age. Perhaps we are now coming to the end of a cycle and it is time for a return to a more balanced way of knowing. Perhaps the fact that the problems associated with overly explicit knowledge are being discussed at all—and the corresponding slight re-emergence of subjectivity within scientific fields[8]—provides some indication that this might very well be the case.

In a manner similar to McGilchrist, philosopher Michael Polanyi posits two distinct types of knowledge: explicit and tacit. Polanyi does not position these as residing in particular hemispheres of the brain; for that matter, he concentrates little on their source at all. Instead, his emphasis is on what they are and how they function. Polanyi's notion of holistic and intangible tacit knowledge is akin to McGilchrist's right-hemisphere way of knowing, while explicit knowledge corresponds to the left. Like McGilchrist, Polanyi views these two ways of knowing as highly intertwined, with any sort of cognitive or bodily activity requiring both modes.

In a simple sense, explicit knowledge can be defined as a process of "knowing-that," while tacit knowledge is a matter of "knowing-how" (Gill 99). [9] Take, for example, the act of riding a bicycle: one might have the explicit knowledge *that* to turn left, one turns the handle bars left; however, having this explicit knowledge alone would not enable someone to make a bicycle actually turn left if they do not know *how* to turn left—something that can only be acquired tacitly through experience.

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8 For example, Daston and Galison's notion of trained judgement.

9 The terms "knowing-that" and "knowing-how" (or "know-how" and "know-that") are commonly used in the theory relating to Polanyi, and/or Tacit knowledge in general. It is most likely that they originated in the 1949 book, *The Concept of Mind* by Gilbert Ryle.

Tacit knowledge is based in emotion, intuition, bodily awareness, sensory observation, and all the ways in which we come to know and understand things that we cannot fully describe. It goes far beyond biomechanical knowledge, such as riding a bicycle, and includes things like being able to tell the difference between a C and D-minor musical tone, having a sense of when a meal could use a little more salt, knowing *how* to speak a language, being able to recognize an individual by looking at their face and being able to identify the emotional state of another person.

Often tacit knowledge consists of information that we are not even directly aware of possessing: "we can know things, and important things, that we cannot tell" (Polanyi, "Tacit" 22). Returning to the example of riding a bicycle, one does not explicitly think about the individual muscles that must be flexed in order to shift and sway, and maintain balance; for that matter one does not even have to think about which way to lean—it is just something one does and something one knows on a subsidiary level. In fact, if you spent your time explicitly thinking about your balance you would most likely fall, because your concentration would be focused on the specific parts of the activity rather than the activity as a whole. Tacit knowledge is a holistic knowledge and not a sum of reductive parts.

For Polanyi, tacit and explicit ways of knowing exist on perpendicular axes of activity and awareness along a diagonal continuum of cognitivity as demonstrated in the chart below:

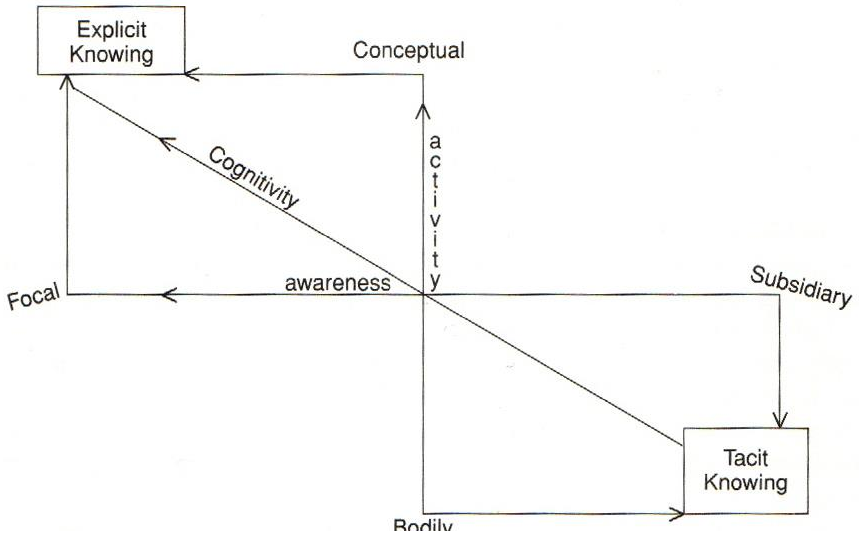

Figure 1: Tacit and explicit knowledge on axes of activity and awareness (Gill 34).

Because tacit knowledge functions on a subsidiary level, coupled with the fact knowers of such knowledge may not even be fully aware of it themselves, it is difficult to directly transfer tacit knowledge, particularly if one relies solely on explicit methods. Tacit knowledge is transferred primarily by imitation and mimicry, where one comes to "indwell" such knowledge through their own personal experience. Explicit instructions may aid in such an endeavour, but can never accomplish the task on their own. In his book on Michael Polanyi, Jerry H. Gill uses the example of his son learning to swim to explain the process of indwelling: "When my eldest son was five, he insisted that he could not go swimming until he first learned to swim. It took some persistence on my part to convince him that it is by swimming that one learns how to swim" (Gill 47). More specifically indwelling is:

> ... the interaction between subsidiary awareness and bodily activity that gives rise to tacit knowing. ... This interaction is accomplished by our bodily participation or dwelling in the particulars of which we are but subsidiarily or subliminally aware. These particulars are not initially encountered as meaningful units but as a random flow of unrelated elements of sensory data. The key to indwelling is to allow ourselves to participate in these particulars as if we already know what they mean. We do this by imitating the meaningful behaviour of those around us even though we do not understand them fully, because we expect to be able to do so. Moreover, such imitation is accomplished through our embodiment, through putting ourselves in the place of others and behaving as we see and hear them doing. (Gill 46)

Tacit knowing and indwelling constitute much of what we know and what makes us who we are, yet there is still a certain "cult of objectivity," persistent within contemporary western thinking, that rejects any knowledge claims that cannot be explicitly identified and articulated: "In fact, it is the cardinal rule of this view that if one cannot focus and articulate an idea or theory, one has no right to lay claim to knowledge at all" (Gill 48). Polanyi, like many of the others, takes great issue with this outlook and advocates for a return of tacit, embodied, right-hemisphere and subjective ways of knowing.

1.2 Question 2: Why are these tacit ways of knowing important and why should we care?

Now that we've covered the basics of tacit knowledge and explored some of the key theory, we can move on to discussing why its diminished significance is so detrimental. As previously stated, many great things have resulted from the emphasis on explicit ways of knowing, which have shown themselves to be incredibly powerful and useful. Yet focusing solely on explicit knowledge leads to incomplete and unfulfilling understandings. As a simple example, we can look to Descartes' overly explicit description of laughter which, according to him:

> ... results when blood coming from the right-hand cavity of the heart through the central arterial vein causes the lungs to swell up suddenly and repeatedly, forcing the air they contain to rush out through the windpipe, where it forms an inarticulate explosive sound. As the air is expelled, the lungs are swollen so much that they push against all the muscles of the diaphragm, chest and throat, thus causing movement in the facial muscles with which these organs are connected. And it is just the facial expression, together with the inarticulate and explosive sound, that we call 'laughter'. (qtd. in McGilchrist, "Master" 356)

This incredibly mechanical description does little (in fact, nothing at all) to explain the *experience* of laughter, its social/emotional causes, or its effect on others as an infectious expression of joy. Basically, it misses almost all of what really matters in terms of a laugh on a personal level. Ironically, his description is now understood to be blatantly wrong based on our current (explicit) understanding of physiology—which also goes to show that explicit forms of knowing are not infallible. This is not to say that such mechanical, explicit explanations are without worth. They provide great insight in terms of how much of our world works, but do not provide a very complete picture, particularly with regard to our *experience* of the world.

Returning to Michael Polanyi, he views tacit knowledge as the source of all meaning in things of which we are explicitly aware: "It is our subsidiary awareness of a thing that endows it with meaning: with a meaning that bears on an object of which we are focally aware. A meaningful relation of a subsidiary to a focal is formed by the action of a person

who integrates one to the other, and the relation persists by the fact that the person keeps up this integration" ("Knowing" 82). Without accepting and maintaining a combination of both tacit and explicit awareness, we lose the meaning behind things, and thus *things* become reduced to mere objects. It may be possible to live life without meaning, but is this really the kind of life one would want to live?

Iain McGilchrist sees the loss of meaning as a key concern related to the dominance of explicit (left-hemisphere) knowing, going so far as to view this loss of meaning as the root cause of our current state of unhappiness (McGilchrist, "Unhappy" 26). [10] He describes the role of the right hemisphere in the construction of meaning as follows:

> The right hemisphere's particular strength is in the understanding of meaning as a whole and in context. It is with the right hemisphere that we understand the moral of a story, as well as the point of a joke. It is able to construe intelligently what others mean, determining from intonation, and from pragmatics, not just from summation of meaning units, subject to the combinatorial rules of syntax, as a computer would. It is therefore particularly important wherever non-literal meaning needs to be understood — practically everywhere, therefore, in human discourse and particularly where irony, humour, indirection or sarcasm are involved. (McGilchrist, "Master" 70–71)

The meaning constructed and understood through the right hemisphere (tacit knowledge) is that which makes live worth living, what makes us human and not simply machines.

Furthering this concern, McGilchrist argues that we have come detached from our own bodies and that the body "has become a thing, a thing we possess, a mechanism, even if a mechanism for fun, a bit like a sports car with a smart sound system" ("Master" 438). Thus mentally separated from our bodies, how can we even attempt to begin to understand ourselves, or anything at all, from the position of the self? Strangely, the body is the one thing in this world from which we cannot truly walk away—yet our thinking is premised as if

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10 McGilchrist references studies over the past 50 years that indicate a significant decrease in overall happiness despite "staggering improvements in material well-being" (McGilchrist, "Unhappy" 26).

we have. McGilchrist sums up the direct result of the loss of meaning, intuition and the body as follows:

> Today all available sources of intuitive life—cultural tradition, the natural world, the body, religion and art—have been so conceptualized, devitalized and 'deconstructed' (ironised) by the world of words, mechanistic systems and theories constructed by the left hemisphere that their power to help us see beyond the hermetic world that is set up is largely drained from them. (McGilchrist, "Master" 244)

Without an acceptance and acknowledgement of intuitive, right-hemisphere thinking, most of what it is to be human is potentially lost.

On a more practical level (perhaps one could say to appease the left hemisphere's desire for utility) it can be shown that tacit knowledge has a use of its own and often functions as a key component in the generation of new explicit knowledge, even though is remains hidden and below the surface.

For Michael Polanyi, tacit knowledge lies at the base of all knowledge: even language. As a child, one does not learn a language through an explicit understanding of grammatical and syntactic structure, but instead through a tacit process of imitation and mimicry that leads to a personal indwelling of the language as a whole. For Polanyi, "the use of language is a tacit performance; the meaning of language arises, as many other kinds of meaning do, in tacitly integrating hitherto meaningless acts into a bearing on a focus that thereby becomes their meaning" ("Knowing" 196). It is only later that an explicit understanding can be achieved as one must have a sense of the whole before focusing in on the parts. Polanyi also theorizes a tacit base to all scientific activity by defining its necessary conditions as follows:

1. A belief that knowledge of reality is possible.
2. A personal commitment to the search for truth
3. An affirmation of the reliability of human cognitive capacities
4. A reliance on the imagination for the creation of a hypothesis
5. An acknowledgement that scientific truth is the result of social interaction and convention (Gill 53)

All of these aspects of science are reliant on a "personal coefficient" that lies outside the purely objective ideal presented by the dominant science epistemology and, as such, is firmly rooted in tacit forms of knowing.

This sentiment is echoed by Thomas Kuhn in describing the process by which a new scientific paradigm emerges. For Kuhn, it doesn't just matter that a new paradigm solves problems and answers question better than the old, but that it solves problems in a way that *feels* intuitively better:

> No ordinary sense of the term 'interpretation' fits these flashes of intuition through which a new paradigm is born. Though such intuitions depend upon experience, both anomalous and congruent, gained with the old paradigm, they are not logically or piecemeal linked to particular items of that experience as an interpretation would be. Instead, they gather up large portions of that experience and transform them to the rather different bundle of experience that will therefore be linked piecemeal to the new paradigm but not the old. (Kuhn, 123)

According to Kuhn, it is through intuitive and tacit means that a new paradigm comes to replace the old. This is not an instant process, as it takes time for members of the scientific community to arrive at similar intuitive conclusions and reach a consensus. In many cases, there will still be those that remain true to the old paradigm, perhaps because the new paradigm does not tacitly make sense to them, or perhaps because they have a vested interest in maintaining the older paradigm, e.g. the new paradigm may render many years of their personal research moot.

Michel Serres echoes Kuhn claim:

> Even in the sciences the imagination does the ground breaking. Do you want to talk about invention? It's impossible without the dazzling, obscure, and hard-to-define emotion called intuition. Intuition is, of all things in the world, the rarest, but most equally distributed among inventors — be they artists of scientists. Yes, intuition strikes the first blow. (Serres and Latour 99)

Yet even with such a strong dependency on intuition and tacit knowledge within science, it remains below the surface and is not promoted or acknowledged in terms of practice or pedagogy. “Science comes from an intuition and then it vanishes instantly” (Serres and Latour 122). Even where intuitive, subjective and sensation-based approaches become necessary—for instance, visually identifying difference between species—the process is deskilled and converted into an algorithm which can then be regulated, controlled and deemed acceptable on an objective basis.[11] In the words of Michel Serres “Science considers existence as a counterweight, a defect.” (Serres 282) As a result, there is a greatly reduced possibility of noticing and identifying anything that lies outside such an algorithm, thereby restricting the potential of noticing and discovering entirely new phenomena.

Physicist-turned-philosopher Arthur Zajonc sees this as a major concern, particularly with regard to recent developments in physics such as quantum mechanics, which defy expectations and common sense:

> There exists, however, even within the domain of physics, phenomena ... that simply *cannot* be thought of in mechanical terms without spectacular violations of logic or simple commons sense. Here enters the arrogance of the [scientific] tradition. What cannot be imagined mechanically cannot be imagined at all. One can compute and predict on the basis of computation, but one must forgo the old pleasure of understanding, or at least modify our traditional sense of what it means to understand. (Zajonc, “Light” 309)

In many cases it is possible to calculate results and do the math, but it is not possible to actually *know* what the equations mean or to fully understand what is going on. A classic example of this is seen in the Schrodinger’s Cat thought experiment, used to help explain the concept of quantum superposition: one can work through Schrodinger’s equation and get a result, but it is essentially impossible to imagine and accept a cat that is both alive *and* dead at the same time. As Richard Feynman, one of the principal figures involved in the

11 As in cases of “trained judgement” described by Daston and Galison.

development of quantum theory, stated in a lecture at Cornell University, "I think I can safely say that nobody understands quantum mechanics." (Feynman 129).

Zajonc sees a great need for a new approach to science and a new type of scientific pedagogy. He argues that this can be accomplished by looking backwards and embracing aspects of Goethe's scientific philosophy, which stresses the importance of personal observation and intuitive understanding of phenomena as archetype.[12] Zajonc explains that a Goethean approach should not replace the current objective and mechanical model, but that the two should be used in combination. For him, such a combined approach is necessary for developing any sort of actual understanding of the many strange phenomena predicted and observed in contemporary physics:

> Might not one develop, parallel to mathematical formulation, a phenomenological formulation which leads ultimately to encounters with the archetypical phenomena within each discipline of physics? Herein lies the intelligent schooling of intuition. Unlike the usual laboratory experiment designed to exemplify physical laws, there would be a structured series of experiments designed to lead the student to a perceptual encounter with the laws of physics! (Zajonc, "Goethe" 332)

He explains that merely showing phenomena to students will simply let them come to identify it in an explicit way; yet when given the opportunity to discover (through a process of personal wonder) on their own, students are able to "indwell" the phenomena and begin to understand it on a tacit level. Zajonc's hope is to develop a new form of science "not based on measurement, but on keen qualitative observations and intuition" ("Goethe" 332) that may help physics to reach a point where it can actually *understand* its own findings.

Another case where an objective, explicit approach fails is in cognitive science, in particular the study of consciousness. The difficulty lies in the simple fact that one cannot objectively observe or measure another's subjective experience. This turns consciousness into the "hard problem" of science, according to David Chalmers (2). To explain this further, Thomas

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12 Goethe is a prime example of Daston and Galison's "truth to nature" form of scientific self. See Chapter 2: *The Idea of Colour* for further exploration of Goethe's approach.

Nagel uses the example of attempting to understand the subjective experience of a bat exploring the world through the use of sonar: "In so far as I can imagine (which is not very far), it tells me only what it would be like for *me* to behave as a bat behaves. But that is not the question. I want to know what it is like for a *bat* to be a bat" (Nagel 439). For Nagel, "facts" such as those related to the subjective experience of a bat are never knowable in the true sense, as we can never truly experience another's experience; however, he also asks "what would be left of what it is to be a bat if one removed the viewpoint of the bat?" (443). To expand on this idea further, he also uses the example of a blind Martian that might come to understand a rainbow in detail by studying its objective properties, yet would never be able to know the human *experience* of seeing a rainbow.

The hard problem of consciousness is far from being solved. As Nagel points out, "at the present we are completely unequipped to think about the subjective character of experience without relying on imagination—without taking up the point of view of the experiential subject" (449). This, of course, is unreliable, but perhaps a new approach involving a combination of both tacit and explicit knowledge could be developed, forming what Nagel refers to as an "objective phenomenology" (449). While it may not be able to capture the true fullness of another being's experience, it would be able to "describe, at least in part, the subjective character of experience in a form comprehensible to beings incapable of having those experiences" (449); however, the nature of his proposed "objective phenomenology" is yet to be determined.

Beyond the utility of tacit knowledge in furthering scientific development, there are also a great many cases where artists—through the use of tacit and intuitive means—have pre-empted scientific discovery by many years. In his book *Proust was a Neuroscientist*,[13] Johan Lehrer describes such occurrences in relation to neuroscience, such as the French chef Escoffier, who discovered the taste sensation later named "umami"; Gertrude Stein, who through her idiosyncratic poetry presented an intuitive understanding of the underlying structure of language not "explicitly" explained until Noam Chomsky came along in the

13 Even though Lehrer has been recently discredited for his manufacturing of Bob Dylan quotes in his recent book *Imagine*, I am still happy to accept his arguments from *Proust was a Neuroscientist* for the purposes of this paper and for my own research.

1950s; and Marcel Proust, whose description of an intense sensory and affective memory recall inspired by his eating of a madeleine cake prefigured the scientific discovery of cytoplasmic polyadenylation element binding protein (CPEB) in the brain that is responsible for memory storage (Lehrer, 93–94).

As argued by Lehrer, there are many cases where significant discoveries have been made primarily through tacit means. It could even be argued that the restrictions and limitations of an objective epistemology may have slowed the process of making the same discoveries in the scientific realm. Often it is the case that an over-emphasis on explicit knowing may blind a person to what is obvious from a more tacit or right hemisphere approach. As McGilchrist explains, "Theory, in the conventional sense of the term, can restrict one's capacity to see things, and the only remedy is to be aware of it" (McGilchrist, "Master" 360). To end this section, I would like to leave you with a very tangible example of how concentrating on explicit (left hemisphere) knowing may blind us to what are otherwise very obvious and observable phenomena. An experiment was conducted by Simons and Chabris (McGilchrist, "Master" 163) where subjects were asked to watch a video of a tightly packed group of people passing a basketball back and forth. The participants were asked to count the number of passes made between people wearing white T-shirts, thus establishing a very left-hemisphere, quantifiable and explicit frame by which to observe the video. The task itself is not overly difficult and most participants obtained the correct answer; however, what they completely failed to notice was an external figure walking directly through the middle of the scene wearing a gorilla suit, even stopping in the centre and beating its chest for a few seconds.[14] This goes to show that by concentrating on a single form of knowledge, focusing in on the details and quantifiable information, one may miss a lot of the bigger picture.

14 You can view this video yourself on Daniel Simons' YouTube channel at: http://www.youtube.com/watch?v=vJG698U2Mvo

Figure 2: Still from the video used in by Simons and Chabris in their selective attention experiment.

1.3 Question 3: What can be done to increase awareness, acceptance and appreciation for this type of knowledge within our contemporary culture?

With regard to my third question, there is little scholarship relating to *how* one can increase an awareness and acceptance of tacit knowledge. Accordingly, it is this third question that will be the primary focus for the various articles included in this dissertation, as well as the inspiration for my own artistic production. Specifically I am interested in exploring the potential for art and arts-based research (forms of tacit knowledge in themselves) to aid in this endeavor. How exactly art can make a difference is the question that I will be exploring and experimenting with for the remainder of this dissertation. I make no claims that my research will result in a major paradigm shift in terms of ways of thinking; however, through my writing, I plan to extend the ideas of the theorists I study and, through my artwork, I intend to create intuitively understandable *experiences* that will draw attention to, and stress the importance of incorporating tacit knowledge into our accepted ways of knowing.

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Chapter 2

2 The Idea of Colour: Newton's Skeleton, Goethe's Gentle Empiricism and Olafur Eliasson's *Room for One Colour*

What is Colour? On the surface this may seem like a rather simplistic question — after all, colour is something we all know and experience on a daily basis — however, an understanding of what colour really *is*, is far from simple. Additionally, there is the question of *where* colour is actually located. Is it a property of an object, an aspect of the external world, a byproduct of our sensual mechanisms, or something constructed within the subjectivity of the mind? Current views of colour tend to follow in the Cartesian tradition of a mind/body split, focusing on colour as either an entirely external objective property or as a solely internal, subjective experience, but neither of these views presents a *whole* understanding of colour. In order to gain a more thorough understanding of colour, one must find a way to combine objective and subjective approaches.[1] The goal of this chapter is to outline the shortcomings associated with such one-sided approaches and to present possible solutions achieved by means of direct experience with colour phenomena and a knowledge of colour arrived at through observation *and* intuition. These possible solutions will be discussed in relation to the writings of theorists including Johann Wolfgang von Goethe, Walter Heitler, Henri Bortoft, Arthur Zajonc, Henri Bergson, and Alva Noë, as well as in relation to Olafur Eliasson's artwork *Room For One Colour* (1997).

Physicist Walter Heitler describes the general problem of sense perception:

> Sense perception can be understood neither by natural science as it is practiced today, which studies only "external objects," nor by psychology, which studies only "inner experience." The Cartesian split completely blocks the path to understanding. Only a mode of thought that overcomes this split and perceives the

1 Michael Polanyi's terms "explicit" and "tacit" could be used equally well to describe the types of knowledge and approaches required to understand colour. Explicit knowledge relates to objective, codified knowledge that can be directly transferred between individuals through textual, symbolic or verbal means. Tacit knowledge is the subjective knowledge that one comes to personally know through embodied experience and cannot be directly transferred between individuals.

> unity of "outside" and "inside" in all our everyday perceptions can gain insight into this problem. (59)

Heitler promotes an approach to perception based on Goethe's theory of colours (Goethe 1848), which Goethe developed in response to the mechanistic explanation of colour that Newton presented in *Opticks* (Newton). Goethe could not accept such a reductive view of colour and referred to Newton's theory of colour as the mere "skeleton of light" (Heitler 57).

Before turning to an in-depth examination of Goethe's theory of colour, let us begin by looking at Newton's theory and the general understanding of colour from a physics-based perspective. Newton began by observing the deflection of sunlight as it passed through a prism, producing a multi-coloured pattern on the far wall.[2] From this, he concluded (through mathematical means) that white light (sunlight) was in fact composed of many colours and that each of the constituent colours were bent (refracted) to varying degrees as they passed through the interface between two different transparent mediums (in this case the interface of air and glass).[3] He added further proof to his theory by using a second prism to recombine the separated multi-coloured light back into white light. In so doing, he paved the way for the contemporary scientific understanding of light as an electromagnetic wave, and colour as the result of perceiving different wavelengths[4] within the electromagnetic spectrum.[5]

For the most part, Newton's objective approach works very well in explaining and predicting how light of different wavelengths travels, interacts with other light, and is deflected. Newton's mathematical analysis of light has also led to the development of many significant optical technologies such as telescopes, cameras, DVD players, and optical telecommunication networks. However, there is a serious problem with Newton's theory, in

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2 Newton was not the first to observe this phenomenon, which was fairly well known at the time; however, he was the first to mechanically explain it through mathematical means.

3 Different in the sense that the two media have different indexes of refraction n, where n = speed of light in a vacuum/speed of light in medium, according to Snell's law.

4 Newton initially described colour as being associated with a "degree of refrangibility" it was only later that the concept of wavelength was developed (Bortoft 289)

5 Visible light (colour) only accounts for a very small portion of the overall electromagnetic spectrum, with the visible range lying within a range of wavelengths between 380 nm and 740 nm.

that it does little in the way of explaining colour itself: as a phenomenon and as something perceived.

Philosopher of science Henri Bortoft is critical of Newton for introducing a quantitative, mathematical theory of science that accounts only for primary, measurable qualities, such as magnitude and position, and entirely omits secondary experiential qualities like colour, taste, and sound. Bortoft describes the specific implication of this in relation to colour in his essay "Counterfeit and Authentic Wholes: Finding a Means for Dwelling in Nature."

> Hence, something that can be measured replaced the phenomena of color, and in this way color as color was eliminated from the scientific account of the world ... The physics of color could now be understood just as well by someone who was color-blind. (289)

When considered in relation to how colour is perceived by humans, Newton's theory[6] fails to address a number of significant aspects of colour perception: metamers, chromatic adaptation, simultaneous contrast, and afterimages.

Metamers are colours that emerge perceptually as a result of mixing two or more different wavelengths of light. For instance, mixing red and green wavelengths of light forms what is perceived as "yellow," and this yellow is perceptually indistinguishable from pure yellow light consisting of a single wavelength. However, from a purely physical perspective, such mixed light would still remain a mixture of red and green[7] — it is only through our perception that such a mixing occurs. *Chromatic adaptation* (also known as colour consistency) occurs when one moves from an environment illuminated with light of a certain colour temperature into an environment of a different colour temperature, for example, from bright sunlight to an interior room illuminated with standard tungsten light bulbs.[8] From a

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6 Including its more developed form as presented in contemporary physics.

7 This could be demonstrated by splitting the mixed light back into its constituent colours through the use of a prism or similar device.

8 The term colour temperature (also referred to as white-balance in photography) comes from the overall hue of light radiation emitted by an ideal black body at a specific temperature in degree Kelvin.

physical perspective, the light in the two environments is drastically different, with daylight producing an overall blue hue and the light bulbs a reddish-orange hue; however, our perception adapts by producing a "subjective white point," such that colours appear essentially the same in both environments.[9] *Simultaneous contrast* occurs when the appearance of one colour changes as a result of being surrounded by, or in close proximity to, another colour: for example, a region of grey surrounded by a red background will appear greenish. *Afterimages* result from staring at a bright light source or at a particular scene for a length of time.[10] Particularly significant is that afterimages appear in the absence of any direct external stimulus and hence are produced entirely within the eye.

These preceding aspects of colour perception are not accounted for through the external, Newtonian, physicalist approach to colour; however, from a psychology standpoint, they are understood and explained as a result of "inner experiences," in the way previously described by Walter Heitler. Psychology, or perhaps more specifically a mixture of physiology and neuroscience[11], explains such aspects of perception through a combination of the Trichromatic Theory and Opponent-Process theories of colour vision.

The Trichromatic Theory[12] is premised on the existence of three types of cone cells[13] within the retina, each of which is sensitive to a certain range of wavelengths of light.[14] Colour sensation results from the ratio of activity between the three types of cone cells. The Trichromatic Theory works to explain metamers as the result of mixed light (multiple wavelengths) exciting multiple types of cones at once in such a way as to produce the same

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9 This situation also demonstrates the capability of perception to adjust to different intensities of light, "dark adaptation"; although, this adaptation make take a few seconds to a few minutes to fully occur.

10 ~30 seconds

11 Accounting for both the physical/biological aspects as well as the mental/perceptual.

12 Initially pproposed by Thomas Young in 1802 and later refined by Hermann von Helmholtz in 1852. The Trichromatic Theory of colour vision is also referred to as Young-Hemholtz theory (Goldstein 122)

13 It should also be noted that the retina also contains rod cells, which are more sensitive to and become active in low light; however, rod cells are only capable of perceiving light and dark and do not produce any sensation of colour.

14 S type cones cells peak at a sensitivity of 420 nm, M type at 560 nm, and L type at 640 nm.

ratio of excitation to that of a single wavelength of light (a pure colour), thus producing identical sensations of colour.

The Opponent-Process Theory[15] works in combination with the Trichromatic Theory, occurring downstream in the chain of excitation, after the cone cells, in higher-order bipolar cells.[16] These bipolar cells function as three separate mechanisms (or channels, to use an electrical signal metaphor), with each one sensitive to a particular continuum of sensation: light/dark, red/green, and blue/yellow. These mechanisms work via a buildup or breakdown of a specific chemical in the retina, so, for example, a yellow sensation would cause a buildup of a chemical whereas a blue sensation would result in a decrease. Due to the fact that these mechanisms work in a push/pull manner, and because they are not instantaneous (having a slight lag), they work to explain afterimages as a fatigue in a particular pathway due to an excess of its opponent sensation. The Opponent process also works to explain simultaneous contrast,[17] the occurrence of colour blindness,[18] and the impossibility for humans to perceive colours such as reddish-green and bluish-yellow.[19]

This leaves us to address chromatic adaptation, which is where things get more complicated. To understand chromatic adaptation we must go further inward, continuing on the trajectory from an understanding of colour in the external, objective world (via physics), to the subjective realm involving the body and sensory organs, and on to the further subjective realm of colour as a product of the mind, because colour adaptation is something that happens due to the functioning of the mind. At this point, we are confronted with the classic

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15 Originally proposed by Ewald Hering in 1878 (Goldstein 125)

16 These bipolar cells are a specialized and specific type of neuron.

17 Through an overwhelming of a particular opponent sensation.

18 Which usually occur as a malfunction of one of these mechanisms leading to a failure to perceive the colours of that particular mechanism e.g. red-green colour blindness.

19 It is thought possible to trick the brain into perceiving a brief *hallucination* of the so-called "impossible" or "forbidden" colours, reddish-green and bluish-yellow, through a process of "perceptual fading", perceptual filling-in" or "binocular fusion" (e.g. where one eye is constrained to see a yellow field and the other a blue field) (Crane and Piatarida 1078); however, there are other scientists that claim these reported *hallucinations* are not true experiences of forbidden colours, but instead are simply a failure in verbal reporting (which is necessary to report personal phenomenological experience) on the part of experimental subjects, in that they lacked the appropriate vocabulary to describe the colour they perceived (Hsieh and Tse 2256).

Cartesian mind/body split as explicitly stated in Descartes' own treatise on light and colour, *Optics*:

> We know for certain that it is the soul which has sensory awareness, and not the body….We know, lastly, that it is through the nerves that the impression formed by objects in the external part of the body reach the soul through the brain. (Descartes 120)

Of course, the term "the soul" has fallen out of favor in recent years, but if we replace it with the term "consciousness," we see that this is still the commonly held view of the mind.

So, returning to our earlier question, "where is colour located?" we can see that according to an objective, physics-based perspective, colour exists as electromagnetic waves, of varying wavelength, existing out in the material world. Yet this perspective does not account for the way in which we actually perceive colour, and is not in direct correlation to our experience of colour (as seen in the phenomena of metamers, chromatic adaptation, etc.). From the alternative, subjective point of view, colour experience is something that is formed in the mind as a result of passive stimulation in the visual organs. The source of such stimulation is essentially irrelevant and in fact, the material existence of the stimulation's source may even be called into question (as with Descartes' distrust of the senses), which can lead to a very reductive input-output picture of perception, as described by philosopher Alva Noë:

> [According to the input-output picture] perception is input from world to mind, action is output from mind to world, thought is the mediating process. If the input-output picture is right, then it must be possible, at least in principle, to disassociate capacities for perception, action and thought. ("Action" 3)

Noë is highly critical of the input-output picture and sees it as presenting a limited and incomplete understanding of perception. In fact, his recent book *Action in Perception* is essentially an argument against such a picture in favor of a view of perception as a skillful and active engagement between body, the mind, and the material world. Noë takes his cue from Goethe's *Theory of Colours* and even begins *Action in Perception* with a Goethian quote, which seems like a reasonable segue into the earlier promise of a return to Goethe:

> It is really vain to express the nature of something. We notice effects and a complete account of these effects would perhaps comprise the nature of this thing. We attempt in vain to describe the character of a man; but a description of his actions and his deeds will create for us a picture of his character. — Goethe, *The Theory of Colour* (qtd. In Noë, "Action" 1)

Goethe, although best known today for his literary contributions, was also very active in scientific research. Of particular significance was his foray into developing a theory of colour as a polemic against Newton's theory.[20] Goethe began his exploration of colour after he experienced purple afterimages following an intense and lengthy observation of yellow crocuses. From this experience, he concluded that "while on one hand the eye perceives color, on the other hand, it produces complementary colors as after-images of those perceived" (Cottrell 263). This led Goethe to view Newton's theory as overly mechanistic and fixed in a strictly mathematical perspective, therefore incapable of explaining the *sensation* of colour occurring through the actions of the eye and brain. For Goethe, colour exists only through sensation, and to ignore sensation is to ignore colour itself.

Goethe's method was premised on direct observation and engagement with the phenomena of colour as a *whole* occurring over an extended period of time (as described in the passage quoted above), as opposed to Newton's method, which only involved individual instances of crucial and defining experimental events. Goethe's theory described a pushing and pulling of light through darkness and of darkness through light (where darkness was considered a *presence* of a type of light instead of an absence of light), with colour emerging from the meetings of light and darkness. Unfortunately, Goethe's theory did not yield the same repeatable and predictable results as Newton's, which is why it is little known and even less accepted today. However, it was the first theory to significantly acknowledge the physiology of colour perception, it was the first to include a symmetrically opposed (complementary) colour wheel[21] (which came to be used by many influential artists of the day, including

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20 As presented in *Opticks*, 1704

21 Goethe's colour wheel is based on red yellow and blue (RYB) functioning as primary colours. Even though this collection of primary colours is still taught in some art school painting classes, it has pretty much been replaced by contemporary models of additive (applied to the mixing of light) and subtractive

J.M.W. Turner), and it prefigured the opponent-process theory of colour vision developed by Ewald Hering in 1878.[22]

The 20th and 21st centuries have seen a renewed interest in Goethe's *Theory of Colours* on the part of contemporary theorists including Arthur Zajonc, Walter Heitler, Alva Noë, Henri Bortoft, Ludwig Wittgenstein, and Jonathan Crary, to name but a few. However, their interest lies not so much in the "results" of Goethe's theory, but more in his application of intuitive experience and an approach to science coming from the position of a human, present-in and engaging-with the world. Goethe termed his approach "Anschauung," which "may be held to signify the *intuitive knowledge gained through contemplation of the visible aspect*" (Bortoft 291). Through his process of "gentle empiricism," Goethe in his own words believed that "every new object, well contemplated, opens up a new organ within us," and that "the intimate intertwining of the human being into nature in this way does much to overcome the experience of alienation common to 'objective' Enlightenment science" (qtd. In Zajonc, "Goethe and the Science of his Time" 27). Goethe considered this experiential, intuitive approach to be a new form of "theory" harkening back to the original meaning of the word, derived from the Greek *theoria*, "to behold" (Zajonc, "Light" 311), and was critical of overly intellectual approaches to theory that would impose structures not actually present in the thing itself. As stated by Goethe, "How difficult it is ... to refrain from replacing the thing with its sign, to keep the object alive before us instead of killing it with the word" (qtd. in Seamon 3). However, it is important to remember that Goethe did not reject or oppose science outright: rather, he wanted to transform it to include "the reality of 'intuitive' experiences of natural laws as complementary to the more formal mathematical formulation of such laws" (Zajonc, "Goethe's Theory of Color" 327). Goethe may have referred to Newton's theory as the "skeleton of light" (Heitler 57), but the skeleton is still part of the *whole* and it is the whole that interested Goethe.

(applied to the mixing of light absorbing pigments) colour, which use red green blue (RGB) and cyan yellow magenta (CMY) as primary colours respectively.

22 Although Ewald Hering's theory was not widely accepted until further experiments performed in the 1950s and 60s produced similar results (Goldstein 126–129).

An understanding of "authentic wholeness" was indeed Goethe's goal. The science of his time (much like our own time) was focused almost entirely on measurement, exactitude, and quantification of primary qualities (number, magnitude, position). Any unquantifiable, secondary qualities (colour, taste, smell, feel) were rejected, ignored, or relegated to the realm of insignificant subjectivity, thus producing a less-than-*whole* understanding of almost anything that was to be studied. Goethe referred to authentic wholeness as a form of pure or archetypical phenomena and used the neologism "ur-phenomenon" (*Urphänomen*) to denote "the essential core of a thing that makes it what it is and what it becomes" (Seamon 4). The ur-phenomena, or authentic wholeness, is not simply a sum of parts (a totality) because for Goethe no part is independent of the whole. Philosopher Henri Bortoft uses the analogy of a text to explain this further:[23]

> The whole is present throughout all of the text, so that it is present in any region of the text. It is the presence of the whole in any region of the text that constitutes the meaning of that region of the text. Indeed, we can sometimes find that it is just the understanding of a single passage that suddenly illuminates for us the whole meaning of the text. (Bortoft 280)

Ur-phenomena are not immediately obvious and it is only through an extended duration of *experience* that one might achieve such an intuitive understanding, in much the same way as one acquires understanding and meaning through the *experience* of a text. Ur-phenomena are emergent processes of theory development considered by Goethe to involve three significant stages, as described by Arthur Zajonc:

> (1) *the empirical phenomenon*, which everyone finds in nature, and which is then raised through experiments to the level of (2) *the scientific phenomenon*, by producing it under circumstances and conditions different from those in which it was first observed, and in a sequence that is more or less successful. The final result is (3) *the pure phenomenon* [ur-phenomenon], which now stands before us as the

23 Bortoft also uses the analogy of a hologram that when broken still retains the original image in each of its broken shards, but for the purpose of this essay the text analogy is more accessible.

> result of all our observations and experiments. The pure phenomenon can never be isolated but appears in a continuous sequence of events. (Zajonc, "Light" 311)

It is important to note that for Goethe the ur-phenomenon is always developing and in flux. In Goethe's own words, "in all that we have observed we should always remember that the phenomenon must not be thought of as fixed or complete, but rather as evolving, growing, and open in many ways to modification" (qtd. in Amrine 43). As such, Goethe's ur-phenomenon colour represents a process of *becoming*, in stark contrast to Newton's theory, which is regarded as fixed and complete.

Goethe's approach to a theory of colour may not be an accurate understanding of colour mechanics, but it does allow for a combination of objective and subjective approaches, thus eliminating the limitations of each approach when used in isolation. It also works to break down the mind/body, subject/object Cartesian split and encourages direct engagement with the world to produce a form of theory based in experience of the phenomenon itself. In Goethe's words:

> The highest is to understand that all facts are really theory. The blue of the sky reveals to us the basic law of color. Search nothing beyond the phenomena, they themselves are the theory. (qtd. in Seamon 4)

In this approach, Goethe in many ways became a precursor to the philosophical school of phenomenology as well as to the burgeoning field of affect theory[24] and paved the way to a further, more engaged and active understanding of colour that includes the subjectivity of the body and mind in addition to the objective material world.

An active understanding of colour (and of perception in general) involving both mind and body is also the goal for Alva Noë:

> We need to finally break with the dogma that you are something inside of you — whether we think of this as the brain or an immaterial soul — and we need finally

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24 See *The Transmission of Affect*, by Teresa Brennan and *The Affect Theory Reader* edited by Melissa Gregg and Gregory J. Seigworth for more information on this field.

> take seriously the possibility that the conscious mind is achieved by persons and other animals thanks to their dynamic exchange with the world around them (a dynamic exchange that no doubt depends on the brain, *among other things*). (Noë, "Limits of Neuroscience" 2)

Or, as expressed more concisely, "Experience isn't something that happens to us. It is something we do; it is a temporally extended process of skillful probing" (Noë, "Action" 216). According to Noë, vision (and colour experience) is not a simple input-output process where the brain simply receives stimulation from the external world via the retina. Instead, it involves movement of the body and "sensory motor skills" functioning in a touch-like manner where vision becomes, in the words of Maurice Merleau-Ponty, "palpitation with the eyes" (qtd. in Noë, "Action" 73). In much the same way as one might haptically perceive the whole form of a bottle through an assortment of contact points made with one's fingers and the movement of the hand over time, one visually perceives through the movement of one's eyes and body in relation to the environment, constructing a *virtual* image through the use of memory, both of the movement itself and of past perceptual experience. This virtual image is not a complete and accurate "picture" of the world, but a sampling of what is relevant, much like the process of reading a page of text: one does not "see" the whole page at once, but only a select few characters or words at a time, yet one is still able to gather the content and an overall meaning of the page through the movement of one's eyes over time.

Noë describes the virtual image as follows:

> …phenomenologically speaking, virtual presence is a kind of presence, not a kind of non-presence or illusory presence. My sense of the perceptual presence of items at the periphery of my visual field, or of partially occluded items, is not a sense that I actually see these features, but that I have access to them, due to the fact that my relation to them is mediated by patterns of sensorimotor contingency. (Noë, "Action" 216)

In many ways, his idea of a virtual presence is reminiscent of Henri Bergson's notion of *the virtual*. Bergson developed his idea of the virtual mainly in relation to an experiential perception of time as *duration,* where time is not absolute and may seem to contract or

expand (depending on one's degree of interest or mood) as well as combining with memory of the past as a form of the present. As describes by Gilles Deleuze in his text on Bergson:

> …duration was presented as the virtual or the subjective, because it was less that which cannot be divided than that which changes its nature by being divided. We must understand that the virtual is not something actual but is for that no less a mode of being, and is, moreover, in a way, being itself; neither duration, nor life, nor movement is actual, but that in which all actuality, all reality is distinguished and comprehended and takes root. (Deleuze 28)

Although Bergson primarily uses *the virtual* in relation to duration, duration becomes a broad concept that can be used to describe a change of nature and of quality. In Bergson's words, "Between light and darkness, between colors, between nuances, difference is absolute. The passage from one to the other is itself also an absolutely real phenomenon"(qtd. in Deleuze 28). This would include the perception of a difference in colour, relating to Goethe's idea of colour as emerging from the transition between light and dark.

Returning to the virtual, or virtual presence, in relation to the perception of colour, Noë acknowledges that such an approach presents an anthropocentric view of colour, in the sense that colours exists for us only because we can see them. However, he is emphatic that this does not mean that there are no colours in the world, just that there is no *experience* of colour in a world without a perceiver: For Noë, "any adequate understanding of such a phenomenon as the experience of the color of a rose needs to account for both its subjectivity and its objectivity. For both its experience directedness and its world directedness" ("Brain" 7). He uses the example of a pigeon, which is a pentachromat, having five types of cones cells in contrast to our three.[25] Pigeons have the capability of perceiving colours that are imperceptible to us; the fact that we cannot see such colours does not imply that they do not exist, merely that they lie outside of our perceptual system.[26]

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25 As explained earlier with regard to the trichromatic theory of colour vision.

26 This also allows for so-called the "impossible colours," reddish-green and bluish-yellow, to actually be real, just existing outside of our perceptual system. It also allows for the potential of colours in the ultraviolet or infrared regions of the electromagnetic spectrum.

This active approach to perception posited by Noë also results from, and works to explain, a number of physiological and perceptual effects. Experiential blindness or "blindsight" is a form of consciousness blindness named by Lawrence Weiskrantz in the early 1970s (Lehrer, "Proust" 183) where the patient is able to "see" in the sense that the retina still transfers its stimulation due to light to the brain, but is missing an awareness of sight and is unable to form a virtual presence of vision; hence, the patient is unable to actually "see" and is essentially blind. This phenomenon presents a strong argument against the input-output approach to visual perception that simply considers stimulation of the retina as all that is required for vision. According to Noë, "The existence of experiential blindness is of great importance. It demonstrates that merely to be given visual impressions is not yet to be made to see. To see, one must have visual impressions that one *understands*" (Noë, "Action" 6). The enactive approach also functions to explain "cyclopean vision," where the input from our two separate eyes is *understood* by the brain and combined into a single virtual presence,[27] as well as our accommodation to the inverted retinal image. It also explains the aforementioned phenomenon of "chromatic adaptation" (or colour consistency), which will be explored later in further detail.

Noë's enactive approach to colour begins with the understanding that colour is not something inherent to an object and the idea that we do not directly interact and engage with the object itself in order to perceive it. Colour is a product of illumination and the ways in which the object reflects, refracts, and disturbs the light-filled environment, a process referred to by Noë as the "ambient optical array." It is the disturbances and ripples in this array that we actually perceive, much like the way we would perceive the sound of a car backfiring (as a disturbance in the ambient acoustic field):[28]

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27 Descartes explains cyclopean vision as functioning in the same manner as a blind individual feeling their way through the world using two sticks or canes and that even with two such appendages their perception of the environment would still be singular (Noë "Action" 6).

28 It should also be remembered that not only do we perceive the ambient optical array (and ambient acoustic array) but that we are also immersed in this array and are thus part of it, and, as such, our presence and actions affect the environment array itself (for example, we cast a shadow or our body acts to baffle the sound).

> To hear that the car is backfiring a block or so over there is thus to hear a disturbance and to understand, implicitly, that the sound of that disturbance would change as your spatial relation to the sound source changed. (Noë, "Action" 161)

From knowledge gained through past experience, we develop sensorimotor skills that allow us to understand the relationship of the *apparent* sound received by our body to that of the *actual* sound source (the car). This functions in a way similar to visual perspective where, for instance, we can recognize the *apparent* elliptical shape of a plate as an *actual* circular object by drawing upon our understanding of perspectival effects (obtained through past perceptual experience) as well as our *active* movement in relation to the object.

In the case of colour, over time we develop a "sensorimotor profile" of colour based on our experience and understanding of how colour changes as a result of different illumination or different "colour critical conditions":

> To experience something as red, then, is to experience not merely how it looks here and now, but how it would look as color-critical conditions vary. Only a perceiver with an understanding of these laws of transformation — who grasps the color aspect profile — can experience a determinate color. To experience a color you must grasp its color aspect profile, that is, its sensorimotor profile. (Noë, "Action" 132)

The development of such a sensorimotor profile is an automatic, subconscious, and tacit process that explains the chromatic adaptation that occurs when, for instance, one moves from a daylight colour-critical condition to an indoor, tungsten light situation and still sees colours as essentially the same: a shirt that appeared red in the daylight may now be *apparently* perceived as brown, but still virtually perceived as red. The sensorimotor profile concept also allows for us to see a wall as a single colour, when in fact the *apparent* colour of the wall shifts through varying hues and brightness levels as the light falls unevenly on its surface; however, it should be noted that through concentration one is still able to see the wall as a mix of hues if one so desires, much like one can "see" a round plate as elliptical.

The trick with colour perception is that unlike the perspectival case of a plate that appears elliptical, for which there is a real physical and circular object,[29] there is no *actual* colour to serve as a datum. To know red, one must see red — unlike the plate whose circular shape can be known through touch.[30] Goethe proposed that to really understand colour as a phenomenon (ideally as an ur-phenomenon), one must be actively engaged with and carefully observant of colour phenomena over an extended period of time, and must also be aware that this understanding will change and evolve with further experience. To assist with this process, Goethe set out an ordered set of experiential experiments that readers could try for themselves, claiming that if one conducts these experiments with "constant and rigorous effort" (qtd. in Seamon 5) they could come to know, through their own experience, "the underlying process through which all colour appears." (Seamon 5)

And in a similar fashion, Noë explains that "how you experience the flower or the sculpture depends on your perceptual knowledge and on the skill with which you bring this knowledge to bear on what you encounter" (Noë, "Action" 32). So, to really understand what colour *is*, *o*ne must carefully observe and engage with colour under a wide and varied range of colour-critical conditions. Through this process one may also become aware of the nature of perception itself. Such an understanding will not be arrived at through rational thought or conveyed information, but instead will come about due to the intuitive knowledge acquired through direct experience. Such tacit knowledge could be developed through Goethe's series of experiments, as laid out in *Theory of Colours*, or through a personally driven endeavor to experience unusual and uncommon colour-critical situations.

A possible avenue to pursue in such an endeavor to *understand* colour would be to look at and experience the work of visual artists. Visual art is a field primarily based in the type of indirect, experiential, and intuitive transfers of knowledge promoted by Goethe, and often the content of such knowledge is an extended understanding of our own perception. A prime example of this is Olafur Eliasson's installation-based artwork *Room for One Colour*(1997),

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29 Noë refers to the "actual" physical characteristic of the object independent of perspective as "P-properties."

30 It is interesting to note that certain colours beyond our visual range, such as infra-red, can be felt as heat even though they cannot be seen.

which specifically deals with the human perception of colour through the presentation of a novel, colour-critical situation.

The installation *Room for One Colour* varies slightly depending on the specific site of installation, but the basic parameters remain consistent: an empty space (a room or a hallway) solely illuminated by low-pressure sodium vapour lamps. Low-pressure sodium vapour lamps have the unusual quality of emitting, essentially, a single wavelength of light,[31] thus producing a monochromatic colour sensation of yellow. When sunlight (which contains most colours present in the visible spectrum),[32] and other type of mixed wavelength light (tungsten, fluorescent, etc.) strike a surface, certain wavelengths are absorbed while others are reflected back: it is in this manner that the sensation of multiple colours is produced as the various reflected wavelengths strike one's retina. In the case of the monochromatic sodium-vapour lamp light, there is only one wavelength to reflect back, so only surfaces that reflect pure yellow show up as bright, in contrast to dark (non-yellow-reflecting surfaces), and there is no variation of colour at all. The result is a yellow and black perceptual environment that through the additional mechanics of colour adaptation (which essentially sets a subjective white point for the yellow illumination), becomes a black and white environment reminiscent of black-and-white cinema — only now it is a "film" in which one is actively engaged, immersed in and interacting with.[33] The experience presents an unusual and rare colour-critical condition (to use Noë's terminology), one wherein objects react and interact differently with the ambient optical-array to produce a novel and uncanny set of conditions, making one much more aware of the complexity, flexibility, and nuances of colour perception. As described by Eliasson:

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31 589.3 nanometers

32 The missing colours correspond to the Fraunhofer lines, which result from spectral absorption of various elements in the sun.

33 It should be noted that Eliasson did not invent this type of lighting, but that it is a commonly used for street lighting applications. However, in such applications, the light levels are low and one might easily assume that the produced monochrome perception is a result of low-light rod cell (instead of cone cell) perception, which is monochrome due to the mechanics of the retina. In *Room for One Colour*, the light levels are intense enough that such an assumption would be near impossible to make.

> The experience of being in a monochrome space thus, of course, varies with each visitor, but the most obvious impact of the yellow light is the realization that perception is acquired: the representational filter, or the sudden feeling that our vision simply is not objective, is brought into our awareness and with that our ability to see ourselves in a different light. (Eliasson 75)

The awareness of a different colour-critical condition becomes most apparent at the boundary conditions of the installation where, through one's own movement or through observation of the movement of others, one is able to directly witness the process of colour elimination upon entering the environment, or a return to colouration upon egress. Such an awareness expands one's colour sensorimotor profile and increases one's intuitive understanding of the phenomenon (potentially the ur-phenomenon) of colour, but most importantly, it makes one aware of the virtual and subjective nature of perception. Eliasson explains:

> This points to the fact that color doesn't exist in itself but only when looked at. The unique fact that color only materializes when light bounces off a surface onto our retinas shows us that the analysis of colors is, in fact, about the ability to analyze ourselves. (Eliasson 76)

Eliasson's project achieves what Noë feels experiential artwork should accomplish. For Noë, "The task of phenomenology, and of *experiential* art, ought to be not so much to depict or represent or describe experience, but rather to catch experience in the act of making the world available" (Noë, "Action" 176) — it is about the process of perceiving our own perception. Through this experience, Eliasson makes us aware that our understanding of colour involves much more than an explicit knowledge of the Newtonian "skeleton of light"[34] or the memorized colour names and colour-mixing combinations[35] one learns in a colour-theory course. It shows us that colour, like much of our knowledge, also involves a substantial subjective, intuitive way of knowing that stems from our experience, and that this

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34 The term Goethe used to describe Newton's theory of light (Heitler 57).

35 For instance green and red make yellow in the additive RGB model or cyan and yellow make green in the subtractive CMYK model, or blue and yellow make green in the antiquated, subtractive RYB model.

subjective way of knowing is continuously evolving as our personal experience expands, as we encounter new phenomena like those presented in *Room for One Colour*. Eliasson's artwork reminds us that we should not undervalue and cannot neglect this way of knowing.

My own project, *The One Pixel Camera*, also deals with the complexities of colour perception, but coming at it from a very different angle. By averaging the scene to a single, average point of data, *The One Pixel Camera* presents an absurdly reductive, mechanistic and objective approach to colour perception in order to contrast and highlight the nuances of our embodied experience of colour. *The One Pixel Camera* epitomizes the input-output model of perception that Noé is critical of, and its "perception" lacks any indication of detail, shading or form. The resultant images accurately represent some aspects of the scene, but come very far from conveying anything like the human experience of the situation occurring before the lens.

Returning to the original questions posed at the beginning of this essay — "where is colour located?" and "what *is* colour?" — we can see through the various approaches to colour that it is not located simply in one area, be it in the object itself, the external world, the senses, or the mind, but is in fact a contingent combination of all four regions. As for "what colour *is*", this is a much more complicated question, due to the dispersed and partially subjective nature of colour. In fact, I would argue that this is a question unanswerable through the use of words and rational thought alone. Instead, it is a question dependent upon a mixture of both rational/objective *and* intuitive/subjective ways of knowing. However, this mixture cannot take the form of a homogeneous purée; instead it must be a heterogeneous composite, like that of reinforced concrete,[36] where the steel rebar takes on the tensile forces while the concrete resists the compressive load. In this way, each aspect of the composite maintains its specific qualities and strengths, while having its weaknesses compensated for by the other. The two aspects are additive, becoming a new form with the combined strengths of both.

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36 Goethe's phrase the mere "skeleton of light" (Heitler 57) used to describe Newton's theory can also be used to construct another example of a composite: a body. The "skeleton" needs the fleshy intuitive muscle to move and the muscle needs the skeleton for support. Both must maintain their own form within the composite because a purée would result in a nonviable and bloody mess.

Goethe, and Eliasson, remind us of the importance of a subjective/intuitive way of knowing within our composite understanding of the world — even if we are not fully aware of such seemingly intangible knowledge. As Goethe wrote, “I may rejoice that I have ideas without knowing it, and can even see them with my own eyes” (qtd. in Daston and Galison 69). Ultimately, I would agree that colour is just such an unknowable yet intuitively accessible idea.

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Chapter 3

3 Design of the Absurd: *The One Pixel Camera*

When considering the impact of a new technology one cannot view it merely as a neutral tool,[1] nor should one consider it a "black box"[2] that simply allows for new possibilities in terms of function. The technological artifact—the thing itself—has a political quality, with certain prescriptive and restrictive behaviors encoded within its mechanism that establish patterns of power and authority: affecting us on an almost invisible, intuitive, tacit and subjective level. This chapter will discuss the political qualities of technological artifacts, looking at how they can both replace human action, and come to shape and constrain human behavior. I will examine the programmed behaviors present in photographic technologies, specifically in contemporary camera phones, and will explore sites of resistance to such embedded technological politics. Finally, I will discuss my recent artwork *The One Pixel Camera* as a form of arts-based research in this area.

In his essay "Do Artifacts Have Politics?" Langdon Winner is critical of what he describes as the two primary approaches used in the analysis of technology: technological determinism and social constructivism.[3] Technological determinism views technology as the dominant driving force in society and considers all social change as a direct result of technological development. The problem with this approach, according to Winner, is that beyond being naïve and reductive, it assumes that technology emerges independently from a laboratory bubble uninfluenced by any social, political, or economic forces. Unfortunately, technological determinism still seems to be the dominant commonsense understanding of the

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1 As exemplified by the old firearm advocate adage "guns don't kill people, people kill people".

2 "Black box" is a term used in science and engineering referring to a way of considering a device based on its inputs and outputs alone. The contents of the "box," how it functions, and any information related to its history or the external influences that impacted its design are deemed irrelevant. The term is also readily used in Science and Technology Studies (STS), in general as the thing to be opened up and analyzed, and specifically in Actor-Network Theory to indicate a portion of the network (which could potentially be an individual technological artifact or a system of distribution, etc.) that has become stable and in no great need of consideration (beyond inputs and outputs). Vilém Flusser also uses the term "black box" as a way to describe a view of the camera that does not account for its internal functionality.

3 Also known as the Social Construction of Technology (SCOT). Key theorists in this area include Thomas P. Hughes, Wiebe Bijker and Trevor Pinch.

relationship between technology and society. The second approach, social constructivism, acknowledges that external influences are *always* a major factor in any technological development. Winner agrees with this approach for the most part; however, he see the social constructivists' emphasis on social origins and stakeholders as problematic in that it leaves out the *things* themselves: the technological artifacts. As an alternative, Winner proposes a theory of technological politics, which he describes as follows:

> Its starting point is a decision to take technical artifacts seriously. Rather than insist that we immediately reduce everything to the interplay of social forces, the theory of technological politics suggests that we pay attention to the characteristics of technical objects and the meaning of those characteristics. A necessary complement to, rather than a replacement for, theories of the social determination of technology, this approach identifies certain technologies as political phenomena in their own right. (Winner, "Artifacts" 20)

To illustrate his theory, he uses the example of a series of overpasses in Long Island, New York designed by Robert Moses and built between 1920 and 1970. These seemingly mundane technological artifacts are in fact highly political in that they were designed with intentionally low clearances so as not to allow buses to pass beneath. The implications of this, is that the poor, and, more specifically, blacks, who relied on buses and public transportation were prevented from traveling to large areas of New York State. This kept certain sites, such as Moses's widely acclaimed public park at Jones Beach, exclusive to "automobile-owning whites of 'upper' and 'comfortable middle' class status" (Winner, "Artifacts" 21).

This first example shows clear intention behind the design decisions that came to imbue the artifact with political qualities,[4] but this is not always the case; often, seemingly benign design decisions or a simple lack of consideration can have political implications. Winner uses a second and more general case: the organized movement of people with disabilities in

4 Winner backs-up the argument that these bridges were deliberately built with low clearances though citing evidence of Moses's social-class bias (Winner, "Artifacts" 21), including the fact that Moses also explicitly vetoed a proposed railway extension to Jones Beach.

the 1970s. The disabled community "pointed out the countless ways in which machines, instruments, and structures of common use—buses, buildings, sidewalks, plumbing fixtures and so forth—made it impossible for many handicapped persons to move freely about, a condition that systematically excluded them from public life" (Winner, "Artifacts" 22). It was not that disabled individuals were being intentionally discriminated against, but rather that they were not deemed to be part of a *relevant* social group when designers were considering the parameters for their designs. Regardless of intention, the various artifacts (doors, sidewalks, buses, etc.) were indeed political in their active restriction and prevention of daily activity and, as such, were (and still are) a great matter of concern for the disabled.

However, acknowledgement of the artifacts themselves is not entirely absent from all areas of social constructivism. Technological artifacts do receive serious attention in the offshoot known as Actor-Network Theory.[5] In his essay "Where are the Missing Masses? The Sociology of a Few Mundane Artifacts", Bruno Latour, one of the principal founders of Actor-Network Theory,[6] looks at the simple objects around us—such as door closers, speed bumps, and parking barricades—that are designed to replace human action and authority, prescribing certain behaviors while restricting others. For Latour, these objects function with agency as non-human actors within larger sociopolitical networks.[7]

He uses the example of the seat belt alarm in his car, which, through the penalty of an unbearable, high-pitched pinging, keeps him from his desire to break the law and drive away unbuckled. In so doing, this mindless device exerts a degree of power and authority, and imposes a prescribed morality on his course of action. Latour also explains that this power could easily be magnified through the simple addition of an interlock that would inhibit the

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5 In a later essay, *Upon Opening the Black Box and Finding it Empty*, Winner expresses an expanded criticism of social constructivism on the grounds that it displays "an almost total disregard for the social consequences of technical choice." He writes that "what the introduction of new artifacts means for people's sense of self, for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society—these are not matters of explicit concern" (Winner, "Opening" 368). Interestingly, Bruno Latour responds to this criticism in his 2004 essay *Why has Critique Run out of Steam? From Matters of Fact to Matters of Concern*, in which he questions his own involvement with Social Constructivism on similar grounds and worries that his own methods are now being used by "interested" parties to debunk inconvenient scientific knowledge such as that related to global warming.

6 Along with Michel Callon and John Law.

7 In Actor-Network Theory, "actors" are defined as "entities that *do* things." (Latour, "Masses" 163)

car from running while the seat belt was unbuckled, thus eliminating all possibility of his breaking the law no matter how great his desire to do so (Latour "Masses" 151-152). For Latour, these technological artifacts, these non-human actors, contain agency and power, and, as such, cannot be left out of any sociological analysis.

When speaking of technological artifacts, the discussion is not restricted to "hard" things in the physical realm. A technological artifact, much like a technology, can also be "soft": a system, a methodology, a technique, a set of instructions—and, most significant in today's digital environment, software. However, the analysis of software, like other technological artifacts, tends to follow the technological determinist framework, focusing on "effects rather than causes" (Manovich, "Software" 9). In his recent book, *Software takes Command*, Lev Manovich claims that "even today … when people are constantly interacting with and updating dozens of apps on their mobile phones and other computer devices, software as a theoretical category is still invisible to most academics, artists, and cultural professionals interested in IT and its cultural and social effects" (Manovich, "Software" 9). With a special interest in media design software, Manovich, like both Latour and Winner, expresses an urgent need to look at "How … software shapes the media being created, making some design choices seem natural and easy to execute, while hiding other design possibilities (Manovich, "Cultural" 14)—in other words, the politics and tacitly prescribed behaviors embedded within software itself.

Within the field of photography, the role played by the camera in creating an image has long been acknowledged. As Andre Bazin writes in *The Ontology of the Photographic Image*:

> For the first time, between originating object and its reproduction there intervenes only the instrumentality of a non-living agent. For the first time an image of the world is formed automatically, without the creative intervention of man" (7).

But what is the nature of this automation; how does it function; what does it allow; what does it restrict; where did it come from; who designed it; and what interests might it serve? These are not common questions within photographic discourse, which tends to be deeply embedded in a technological determinist worldview.

Vilém Flusser takes a different approach; in addition to analyzing the "technical image"[8] coming from the camera and the "information" contained within that image, he also places great importance upon the "apparatus" itself and, most significantly, what he refers to as the "program" of the camera.[9] The program, according to Flusser, is the sum of all design features and functionality within the camera that comprise its "automatic" nature, which in turn dictate, prescribe, and limit the types of images that the camera, and hence the photographer, is able to produce.[10] For Flusser, it is essential that the significance of the program not be overlooked:

> The encoding of technical images, however, is what is going on in the interior of this black box and consequently any criticism of technical images must be aimed at an elucidation of its inner workings. As long as there is no way of engaging in such criticism of technical images, we shall remain illiterate. (Flusser, "Towards" 16)

This program may consist of software, as in the case of a digital camera,[11] although it can just as easily involve physical and mechanical elements, like the "programs" seen in Winner's bridges and Latour's seat-belt alarm.

As a simple example of how a camera's program might tacitly prescribe a certain type of image-making, consider the placement and orientation of the camera's viewfinder. Most SLR

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8 Flusser draws a distinction between the "technical image" and the "traditional image." A technical image is an image produced by an apparatus, whereas traditional images are produced by a human as an abstraction of the concrete world. (Flusser, "Towards 14).

9 For Flusser, "technical image", "information", "apparatus" and "program" are the four components which one must take into consideration in the theoretical analysis of photography "…the interpretation of the technical image becomes an act of grasping the transcendent—functional and circular interactions between the four essential and non-causal determinants of the photographic universe: *image*, *apparatus*, *program* and *information*. (Flusser, "Towards" 91).

10 He links the origins of these features to their potential for serving political and economic interests: "The camera functions on behalf of the photographic industry, which functions on behalf of the industrial complex, which functions on behalf of the socio-economic apparatus and so on (Flusser (Towards" 30).

11 *Towards a Philosophy of Photography* was written in 1983, when most cameras were still entirely mechanical, so it is unlikely that Flusser was directly alluding to software through his use of the term "program"; However, it is possible that he was looking ahead, as he does make mention of the day when photography will be "taken over by electromagnetic technology" (Flusser, "Towards" 50).

and DSLR camera have a through-lens, eye-level finder, whereas older medium-format cameras tend to have a waist-level finder (Figure 1). Through these simple arrangements of viewing elements, it becomes "intuitively obvious" and "tacitly convenient" that the camera be used in a particular manner. This in turn affects the perspective of the image, which can come to alter the viewer's reading, and thus the meaning, of the image; for instance, the difference between looking up at a subject versus looking down upon a subject may alter the viewer's perception of a power dynamic.[12] It is possible to use the camera in a manner not intended by its design, but it takes a degree of effort and ingenuity to circumvent, or at least bend, the program (Figure 2). Not surprisingly, Flusser encourages such circumvention and advocates for the photographer to take on an experimental role and to push the limits of the program in order to produce what he refers to as "interesting images," in contrast to redundant images" that result from merely following the program's prescription.[13]

Waist Level Viewfinder on Medium Format TLR

Eye Level Viewfinder on 35mm SLR

Figure 3: Cameras used as prescribed by the "program"

12 Of course, the photographer's height also comes into play to some degree here.

13 According to Flusser, photography critics consider the "best" photographs to be "those in which photographers win out against the camera's program in the sense of their human intentions, i.e. subordinate the camera to human intention" (Flusser, "Towards" 47).

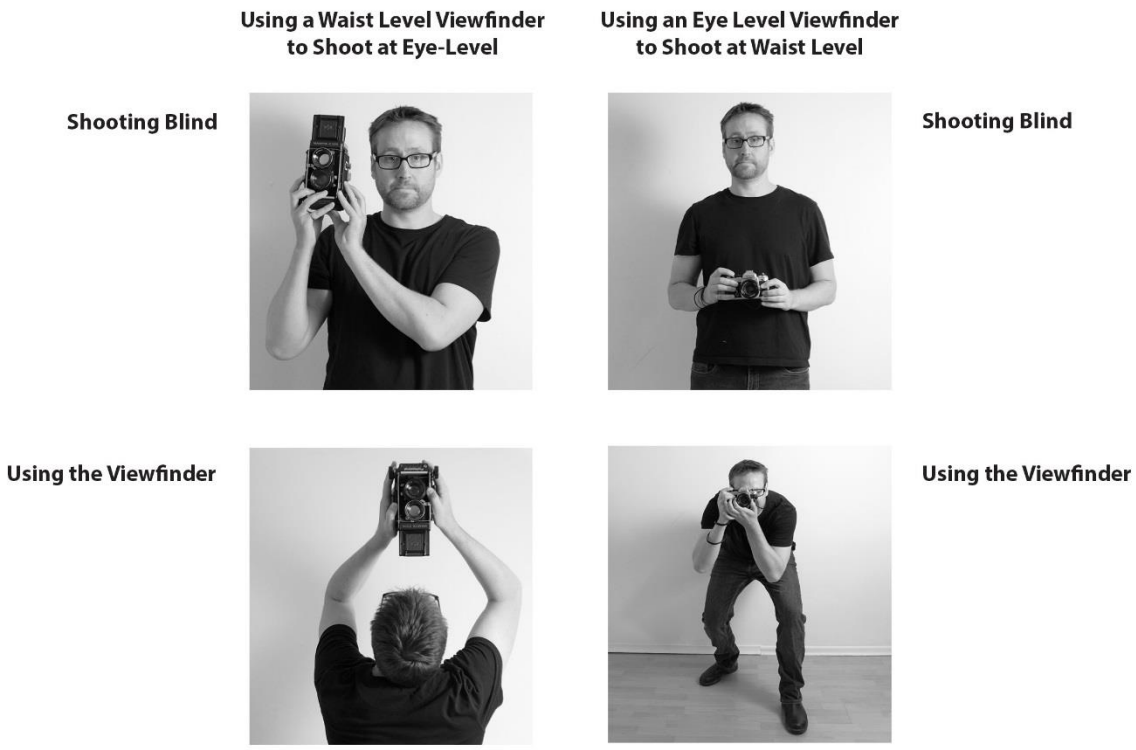

Figure 4: Circumventing the camera's "program"

Extending the discussion related to Flusser's program of the camera, we can bring it into the present moment by looking at contemporary camera-phone technologies, which have drastically altered the way photographs are produced, used and distributed. There have been a number of ethnographic studies looking at camera-phone usage in detail;[14] however, most of this analysis shows little concern for the social and political forces that might be in play.[15] Nonetheless, these studies do shed some light on the emergent activities and new possibilities opened up by these small, portable, discreet cameras that have the ability to communicate with other devices. For the most part, these studies do not see the camera phone as taking over the role of traditional photography, which Ballagas et al. describe as being to produce

14 Examples of such studies include *The Ubiquitous Camera: An In-Depth Study of Camera Phone Use*, Kindberg et al.; *Taking and Sharing Pictures with Phonecams: An Ethnographic Study*, Ballagas et al.; and *Everyday Contexts of Camera Phone Use: Steps towards Technosocial Ethnographic Frameworks*, Okabe and Ito.

15 Kindberg et al. also claim that most of this research "focuses on the sending of images rather than on the range of ways in which people use their camera phones" (43); however, even the studies that do look at the phones themselves pay little attention to their social and political influence and implications.

archival documents.[16] Instead, they see entirely new areas of photographic activity opening up, which they separate into categories of "communication," "spontaneous," and "covert."

According to Ballagas, the "communication" category involves a form of everyday image-based communication used in lieu of text or speech. Rather than describing what you are doing to an absent friend, you can simply send them a picture—or you might send a picture of an empty milk jug to a partner as a way of reminding them to stop at the store on the way home.

The "spontaneous" category stems from the fact that most people almost always have a camera on them; as such, they are more readily able to capture any random, strange, funny, or shocking situations they may encounter. This has also led to new forms of citizen journalism, which has become quite prevalent in recent years.

The "covert" category takes advantage of the less-invasive look of the camera phone, as compared to a traditional camera, and the simple fact that it is difficult to tell whether the device is being used as a phone or as a camera at any given moment. This can lead to touching, candid images of friends and family, hidden-camera journalism, and, of course, a slew of less-than desirable and problematic activities.

Another interesting arena of activity discussed in these studies is related to the use of the phone itself to share photos: not in the sense of sending an image or uploading to a website, but rather the idea of using the phone itself as a digital wallet—a viewing platform by which to share and distribute images on a personal and physical level.

As stated earlier, these studies focus primarily on the effects of the technology rather than its causes, or even the mechanics that bring about such behaviors. Returning to the earlier look at viewfinder placement, the camera phone typically has a small screen that allows the user to view from a distance, away from the eye and away from the face. Such viewing arrangements tend to facilitate a particular type of mirror-based self-portraiture, which has

16 However, this analysis was grounded in part on the low-quality and low-resolution of camera phone images, with increasing improvements in camera phone quality, future studies might very well come to a different conclusion.

come to be commonly known as the "selfie."[17] Of course, the selfie existed in the past,[18] but it has become much more prevalent since the emergence of camera phones with this viewing arrangement[19]. The recent addition of screen-side cameras intended for video-chat purposes encourages this even further, as one can now see oneself in the viewfinder without the use of a mirror.

Admittedly, the emergence of the selfie is not a major political problem, with the possible exception of the issues surrounding underage "sexting." Nor is it an example of power being intentionally embedded in an artifact to tacitly control and prescribe human activity. However, there are other design features present in camera phones that can become problematic and highly political. An example of this can be seen in the proposed 2009 U.S. Bill H.R. 414, known as the *Camera Phone Predator Alert Act*, which sought to mandate that all camera phones sold in the U.S. emit a "tone or other sound audible within a reasonable radius" during image capture, with no option available for the user to disable this sound (King). This act was directed at covert and predatory camera phone use in private spaces such as change rooms and bathrooms, and voyeuristic activities like "upskirt" photography. Even though such acts are illegal and should in no way be condoned, the bill demonstrates an authoritarian mode of policing achieved through a technological artifact, much like Latour's seat belt alarm. Beyond the irony and nostalgia of adding a mechanical shutter sound to a silent digital camera, this action also restricts a large field of legitimate photographic activity. There are many intimate occasions such as weddings, plays, poetry readings, quiet musical recitals, and even performance art festivals that would be compromised by the interruption of a loud click or tone. Additionally, there are times when a silent covert camera may be necessary for journalistic or artistic purpose. Fortunately, this legislation did not pass; nonetheless, almost all camera phone manufacturers include an audible click by default, and

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17 The term "selfie" has recently been added to the Oxford English Dictionary, defining it as a "photograph that one has taken of oneself, typically one taken with a smartphone or webcam and uploaded to a social media website" (Eler 1).

18 But would have to be shot blind because putting the camera viewfinder to one's eye would block their face.

19 Of course, the rise of social media and the simple fact that the "selfie" is now a known cultural phenomenon also play a significant role in its popularity; however, the physical design parameters, which facilitate the process and make it tacitly convenient, cannot be neglected. Even with the rise of social media, if such images took any real effort to produce, I expect very few would exist.

the user must demonstrate a degree of technical savvy and take extensive measures should they want to turn it off.[20]

An even more invasive and troubling account is seen in the recent patent application by Apple Inc.: Patent 8254902, *Apparatus and methods for enforcement of policies upon wireless devices*. Grounded in a desire to eliminate disturbances such as those caused by pesky camera phone "clicks"[21] and to reduce the potential for copyright infringement, this patent covers a technology, to be embedded within the phone itself, that upon receiving a transmitted kill signal, would put the phone into a mandatory sleep mode without the owner of the phone's consent. In this way, all cell phones within a certain geographic area could be instantly disabled at the touch of a button. This would serve to eliminate the possibility of illegal taping in movie theatres or at concerts, enforce the shutting-down of phones on airplanes, restrict external communication during exams, and, as stated in the patent application, ensure that camera phones cannot be used in and around "covert police or government operations that may require complete 'blackout' conditions," which, of course, opens up the possibility of government censorship and the elimination of "inconvenient" citizen journalism during anything from an out-of-control protest to an occurrence of police brutality.[22] Moreover, this policing of image recording would be accomplished by proxy through the inanimate device that you hold in your hand.

This particular functionality still remains in patent form, but it is likely to be invisibly added to future iPhone models. This may sound a bit conspiratorial and perhaps to a degree it is. I would hope that governments establish fair policies regarding technologies such as Apple's kill switch, but you never know. Nonetheless, I strongly agree with Winner, Latour, Manovich, and Flusser in thinking that the political aspects of technology and how technological artifacts come to affect our actions in an intuitive and tacit manner is

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20 This often involves replacing the "click" sound file with a blank sound file or sourcing an alternative camera app. Some phones do allow a full mute mode which will disable the click, but this also disables all other sounds and the user must remember to activate it prior to taking the image and then deactivated when finished.

21 As well as cell phone ring tones and blinding camera flashes.

22 This would also eliminate the possibility on-the-fly reporting through texting or tweets.

unacknowledged for the most part by both the general public and academia, and that this is something in great need of serious consideration.

Fortunately, sites of resistance to technological politics and embedded prescriptive behaviors are emerging at a grassroots level, found most notably in the free and open-source software initiatives, hacker culture, and the maker movement. The concept of free and open-source software began in 1983 with Richard Stallman, who felt that the user should have the ability to share, copy, and, most importantly, have access to the code so that they might modify the software for their own purposes. In other words, Stallman felt that software should be free—"free as in freedom, not as in free beer" ("What is Free Software?"). With this goal in mind, he created the GNU operating system[23] as an alternative to Unix. Along with it, he created the GNU General Public license (GPL), which laid out a set of criteria that would ensure that his software remain "free". This license, and variations thereof, are used to this day as a way of designating software as free and/or open source.

In a similar fashion, the intertwined hacker and maker cultures also take a DIY approach to technology, by building things from scratch, tearing things apart, and modifying things to have them function according to their own desire. In this sense, these groups work to acknowledge, analyze, and circumvent the politics and tacitly prescribed behaviors embedded within technological artifacts. Even the simple act of jamming an object in a door frame to prevent an automatic door closer from locking you out, as described by Latour ("Masses" 159), could be considered a form of hacking—as would his commissioning of a mechanic to disable the annoying and authoritarian seat-belt alarm ("Masses" 152).[24] Similarly, there are numerous ways to hack camera phones, through methods such as

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23 GNU is a recursive acronym: "Gnu's Not Unix".

24 I had a similar problem with a seatbelt alarm that would go off when I placed a heavy backpack on the passenger seat of my car. Through some internet research, I was able to find a rather convoluted and un-intuitive hack that involved 1) Opening the driver's side door and starting the car without placing pressure on the driver's side seat; 2) Pressing the Odo/Trip button on the dashboard until it reads "Odo"; 3) Turning the ignition switch off and then back on while holding the Odo/Trip button for 10 seconds; 4) While still holding the Odo/Trip button, fastening the driver's side seatbelt, which causes the display to change to "B-on"; 5) Releasing the Odo/Trip button, which should then change to "B-off"; and 6) Turning the ignition off, unbuckling the seatbelt, and sitting in the seat. Only after completing these steps and starting the car with the brake pedal depressed would the seat belt alarm be deactivated. As strange as it sounds, it actually worked.

jailbreaking,[25] rooting,[26] writing or installing custom "apps,"[27] and using an assortment of novel physical add-on devices.[28] However, circumvention and hacks often involve a high degree of technical know-how, time, and/or money and are not always feasible or even a possibility.

Such acts of resistance can also be aligned with what Matt Ratto from the University of Toronto refers to as "Critical Making." Critical making, according to Ratto, is a method of furthering our critical and conceptual understanding of technology through joint material production:

> The use of the term critical making to describe our work signals a desire to theoretically and pragmatically connect two modes of engagement with the world that are often held separate—critical thinking, typically understood as conceptually and linguistically based, and physical 'making,' goal-based material work…. Our goal is therefore to use material forms of engagement with technologies to supplement and extend critical reflection and, in doing so, to reconnect our lived experiences with technologies to social and conceptual critique. (Ratto 253)

In a sense, this methodology opens up the possibility for developing a tacit and intuitive understanding of a technological artifact—and how it might prescribe certain actions and activities—through an embodied process of making. Such practical engagement with the

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25 A method by which to bypass the digital rights management (DRM) policies put in place by Apple, thus allowing for non-authorized software to be installed and for the user to gain root access to the operating system so that they might have more control over the functioning of the device. Writes Keller, "iPhone hackers first coined the term 'jailbreaking' in reference to breaking the iPhone out of Apple's iTunes 'jail.'"

26 A method to gain "root" or "super-user" access on an Android-based device. Rooting is related to "jailbreaking," but less complex, and, unlike jailbreaking, rooting is not required to run custom apps.

27 This still involves "jailbreaking" for iPhones and is more feasible to accomplish on open-source Android-based products, which do not require a "jailbreak" to run custom software or apps.

28 See the online Photojojo store (http://photojojo.com/store/) for various examples including add-on lenses, filters, external flashes, tripods and even specialized mounts to allow for the use of regular SLR lenses.

artifact itself would then come to augment the theoretical understanding of a technology as it exists in textual form.

With this notion of critical making in mind, and because I am working on a studio-based PhD, my investigation into the politics of technological artifacts also includes arts-based research in the form of my project, *The One Pixel Camera* (Figure 3 and Figure 4).

Figure 5: ***The One Pixel Camera***

Internal Components

1. An industrial colour sensor
2. A Zeiss lens from an old process camera
3. Ground-glass for "image" formation
4. A microcontroller programmed to acquire sensor data
5. A miniature Linux-based computer that runs the python code which functions as an operating platform for the camera
6. A small flat-screen display to act as viewfinder and interface
7. A speaker to produce an audible "click"
8. A circuit for power distribution
9. A battery for untethered use in the field

Figure 6: Interior view of ***The One Pixel Camera***

For me, arts-based research is distinct from research-based art in that I am not performing research simply to facilitate the making of an art object, but that the process of design and the subsequent use of the produced thing become a form of research in itself.[29]

Grounded in an absurdist position,[30] the goal of this project was to make a camera that would only allow for image capture at a resolution of a single pixel, thereby producing a camera with embedded politics and an incredibly restrictive design that tacitly prescribes and limits the types of images that can be produced. The politics in the case of *The One Pixel Camera* exist in the form of the camera governing my actions and exerting its power by not allowing me to produce a "normal" photograph that actually *looks like something*. By developing a camera with my own program—both figuratively, in Flusser's sense, and literally, in that I actually wrote the code that runs the camera—and through using that programmed camera myself, I am able to directly see and experience how even the smallest design decisions greatly affect the ways in which the camera can be used. I have displaced my own agency into the camera, which now polices my actions and limits photographic activity, allowing only for the production of coloured squares.[31] It is now up to me to attempt to circumvent my own politics and embedded prescriptive behaviors.

Overall, the project exists as three main components: 1) The camera itself, which functions as a sculptural object or potentially an interactive artwork[32]; 2) The images produced by the

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29 A more detailed definition of arts-based research and how it differs from research-based art is presented in the Chapter 8 of this dissertation.

30 Here I am applying the term "absurdist" in accordance to the notion of the "Theatre of the Absurd" as coined by Martin Esslin, to describe a theatrical movement involving plays written by Samuel Beckett, Arthur Adamov, and Eugene Ionesco. "Absurd is that which has no purpose, or goal, or objective" (Esslin 4) and "the spectators of the Theatre of the Absurd are thus confronted with a grotesque heightened picture of their own world: a world without faith, meaning, or genuine freedom of will." (Esslin 6). In a similar sense, use of *The One Pixel Camera* is futile, for it will never actually capture an image. Additionally, it presents a heightened and exaggerated version of technological politics and tacitly prescribed behaviors.

31 A connection could be made between the one pixel images and the discussion in Chapter 1: *The Idea of Colour*. These coloured pixels present a different way to understand the colour present in a given situation: even in this absurd reduction of colour to an average, we can still intuit a faint character of the scene.

32 Viewer engagement and interaction with the artwork will depend upon the specifics of the exhibition venue.

camera, labelled with explicit captions indicating subject matter; and 3) Photographs of the camera in use as documentation of my "performing" the program of the camera.

So far, I have been using the camera to produce a series of images depicting clichéd and conventional photographic subject material such as sunsets, family events, outdoor activities, portraits, personal belongings, and tourist locations (Figs. 5 – 7). For each of these images, documentation of the process was also recorded (Fig. 8).

Figure 7: *Sunset at Grand Bend* (2013), one pixel image, archival pigment print 15" x 15".[33]

33 Printed at a resolution of 0.0667 pixels per inch (ppi).

Figure 8: ***Giselle Holding the Fish She Just Caught*** **(2013), one pixel image, archival pigment print 15” x 15”.**

Figure 9: ***Niagara Falls*** **(2013), one pixel image, archival pigment print 15” x 15”.**

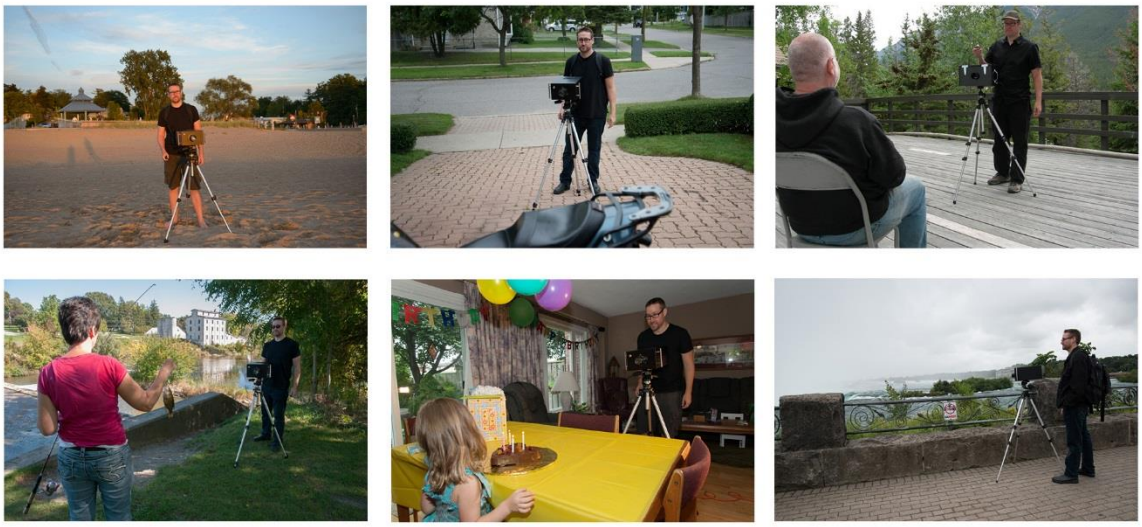

Figure 10: Performance documentation of *The One Pixel Camera* in use

I have found that it is possible to work with the camera if I accept its limitations[34] and attempt to turn them to my advantage[35]. Through my experience working with *The One Pixel Camera*, I have acquired a limited ability to ever-so-slightly tune qualities in the resultant single-pixel images. By applying an understanding of light and knowing the colour of the subject matter before the lens, I am now able achieve moderate control over the final appearance/colour of the image. However, my bending of the camera's "program" is still very minimal and no matter how hard I try, I will never produce an image that actually *looks like something* or is anything more than an index of light and a representation of reflected colour.

By going through the complete process from designing a technological artifact with intentional politics and a predetermined set of tacitly prescribed behaviors, through to the

34 The limitations of the camera go beyond the single pixel sensor. The large size, weight of the camera necessitate the use of the tripod and the waist-level viewfinder prescribes a certain viewing angle/position—even though the viewfinder isn't overly useful in terms of framing, it still serves only to give an indication of colour in the final image.

35 Although, I will not allow myself to "hack" the camera as this would work to defeat the whole notion, and testing out, of self-imposed design limitations, which is the overall goal of the project as absurd as it may be.

attempt to use this same artifact with full knowledge of its embedded politics, I have gained a more thorough and intuitive understanding of how technological politics function. This exploration has been a personal one, but I expect that through the presentation of *The One Pixel Camera* along with the resultant one pixel images and documentation of the camera in use, others may come to establish a more enhanced and intuitive understanding of their own.

The final one pixel images may also open up other conversations about the nature of photography,[36] but within the framework of our current discussion, it is the process of design and of use that I see as the crux of the work. My hope is that this project will work to draw greater attention to the notion that the devices and objects around us contain embedded politics and that they affect us on a tacit and intuitive level: prescribing certain actions and behaviors while restricting others, thereby effecting seemingly invisible structures of power and control.

It is not the case that all technological politics are problematic. I expect even Latour would agree that his annoying seatbelt alarm is in essence a positive thing backed by good intentions. The issue here is the lack of attention and consideration paid to such politics. We are increasingly surrounded by technological devices that cause us to drastically alter the way we live, yet we accommodate with little question or concern — whereas we would actively resist similarly profound changes had they been mandated through policy or law. We tend to focus on the explicitly stated and obvious forms of politics while ignoring those that function below the surface, on a tacit and intuitive level. *The One Pixel Camera Project* attempts to make these tacit politics more tangible for the viewer, by working on an intuitive and practical level itself, rather than through abstracted theory.

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36 *The One Pixel Camera* project also reduces the camera and image to a primary essence—a pure index of light and the base unit or "quantum" of the digital image: the pixel. Angela Bulloch, an artist who also works with the pixel describes it as "the smallest units of technological images, which cannot and are not supposed to be seen when one is under the spell of the culture industry's images"(Diederichsen 12). In a similar fashion, Craig Dworkin, writing about Jason Salavon's *The Top Grossing Film of All Time 1 x1* (which reduces the film *Titanic* to a grid-ordered, frame-by-frame display of each frame in the film, blurred to its average pixel colour), states that "one of the long-standing problems with thinking of visual works in structural terms has been that they seem to lack discrete units of double articulation; the formal structure of painting, for instance, had nothing neatly analogous to Western writing's system of alphabetic letters and words. Digital imaging and analysis, however, provides the necessary unit of articulation: the pixel" (Dworkin 96). However, this is beyond the scope of the current discussion.

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Chapter 4

4 An Uncertain Experience: the Production and Viewing of Photographic Documentation from Performance Art Events

As I recall, it was the fall of 2001 when I witnessed my first performance art event. The performance took place at Art System, a gallery loosely affiliated with the Ontario College of Art and Design and located on the second story of a commercial space on Spadina Avenue in Toronto. Art System had gained a fair bit of notoriety at the time, partially due to it being run by Jubal Brown—an artist best known for throwing-up in primary-coloured vomit on paintings in both the AGO and the MOMA (DePalma "Student," "No Stomach")—and partly for the gallery's public support of a video by Jesse Power depicting a cat being tortured, skinned alive, and eventually killed through strangulation (Smith; Stevens). With this in mind, I went to the event with an expectation that something shocking and sensational would occur.

I am unable to remember the name of the artist or the title of the exhibition, but can share a detailed description of the performance—as I remember it—and my visceral response to the experience of *having-been-there* myself. The piece began with a male performer entering the room wearing a dilapidated blond wig, a white tutu, and a pair of translucent white tights through which a large adult diaper was visible. "Flashdance... What a Feeling" by Irene Cara began to play and the performer proceeded to dance in a pseudo-sexual fashion.[1] As he continued to dance, you could see his facial expression contort; these contortions were explained when, at the end of the song, he reached into the diaper and pulled out a handful of fecal matter (or at least a substance that strongly resembled fecal matter). He then placed this handful, along with a few more, in a skillet on a hotplate, where he fried the mass up, with the addition of some spicy black-bean sauce. After a few minutes of cooking, he took out a spoon and began to eat the newly produced "meal," then paused for a moment to offer a sample to the audience. I opted out of this opportunity to add a taste sensation to my

1 A song made famous through the film *Flashdance* (Lyne).

phenomenological experience of the event, but there was one woman in the audience who took him up on his offer. I believe she was calling his bluff, perhaps thinking that the meal was in some way simulated, but ended up gagging and spitting out the contents onto the floor. Following this foray into scatological cuisine, the "artist" produced a spiral-shaped piece of metal attached to a wooden handle, which he placed on the hotplate, allowing it to heat up. Lying down on a couch, he removed the tutu, and his assistant took the red-hot metal and applied it to the bare flesh of his back, branding him with an abstract spiral pattern. The performer then stood up and walked out of the room, and the audience cautiously applauded.

Through my experience of witnessing this live performance, I can claim to *know* the event in a certain way—having been there myself to acquire the full sensory experience, in the moment, as the events unfolded. Through my word-of-mouth description, you have now gained an explicit and "factual" knowledge of the event, yet are also able to draw from your own tacit experience and imagine something of what it was like to be there: the smell of frying shit and burning flesh, the sounds of the audience members' gasps and the performer's scream as the red-hot iron made contact with his flesh. However, both of these modes of knowledge are based upon my specific memory and my ability to accurately recall what actually happened. As such, they are quite suspect and prone to error, and can never be held to be an "objective" or true version of the event.

The question of how one can actually *know* an experiential and ephemeral thing such as a performance art event becomes central to our understanding of the art form. Due to the limitations of time and space, it is rarely possible to experience the performance as a live event. Even when it is possible, one's memory of the event may be selective, or may shift and grow vague over time. Photographic and video documentation provide a potential solution to this,[2] but many artists and theorists resist the use of documentation because it works against the supposedly "authentic" live experience and the ephemeral ideal of performance, or simply because they feel that the photographic record does not tell the "whole truth" and represents a biased viewpoint contaminated by the subjectivity of the

2 This chapter will primarily focus on photographic documentation because that is where my personal experience lies.

photographer. This essay will explore such debates through an analysis of texts by key figures such as Peggy Phelan, Amelia Jones, and Philip Auslander, as well as drawing upon my own personal experience documenting performance art over many years. The goal of the chapter will be to present a notion of viewing photographic documentation as a phenomenological experience in itself where (to paraphrase Maurice Merleau-Ponty) one does not see the image, but instead sees *according to* the image.[3] Additionally, this essay will take into consideration the typically neglected role of the photographer. Where others have seen the photographer as problematic, complicating understandings of the performance event that would seek to see it as a self-contained work, I argue in favour of an embracing of the photographer's subjectivity, both in terms of how their aesthetic decisions shape the eventual visual document and how the photographer's body and the mere presence of the camera alter and influence the dynamic of the originating performance event. Through consideration of the photographer's mediation in this manner, the photographic documentation becomes an experience of an individual's experience rather than a mere document.

As a genre, performance art is complicated to define, especially seeing as it is not associated with a specific medium or a particular artistic movement.[4] It is distinct from theatre in that is it not based upon the live demonstration of a skilled technique (e.g. acting, singing, dancing, or playing a musical instrument),[5] but rather upon the artist temporarily transforming their body (and occasionally the bodies of those in the audience) into an art object. Additionally, there is often an element of chance where, unlike the repeated performances of theatre, the

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3 Of the cave paintings in Lascaux, Merleau-Ponty writes: "I would be at great pains to say *where* is the painting I am looking at. For I do not look at it as I do a thing; I do not fix it in place. My gaze wanders in it as in the halos of Being. It is more accurate to say that I see according to it, or with it, than I *see* it" (164).

4 In the words of Frazer Ward, "Rather, performance has surfaced and disappeared throughout the twentieth century as a kind of undercurrent, periodically bubbling up within – or in some relation to – various avant-garde movements: the Soviet Avant-gardes, Futurism, Dada, the Bauhaus, neo-Dada, Fluxus, Pop, Minimalism, perhaps even Abstract Expressionism if we consider the arena-like quality of Jackson Pollock's canvases rolled out on the studio floor" (38).

5 An extended discussion on the significance of skill within theatre can be found in *What is Performance*, the introduction to Marvin Carlson's *Performance: a Critical Introduction*.

event is not fully predetermined, but simply based on a loose set of parameters,[6] or a constructed situation. In such cases, events are allowed to unfold on their own, under the influence of the audience's response and interaction—thus the work also becomes a form of social experiment.

In her attempt to define performance art, RoseLee Goldberg states that "it is the very presence of the performance artist in real time, of live performers 'stopping time,' that gives the medium its central position" ("From Futurism" 248–249).[7] However, this description does not fully account for performances without an audience, such as Vito Acconci's *Step Piece* (1970), which was performed privately in his apartment every morning for a period of four months; extreme durational performances that would far exceed the audience's attention span, such as Linda Montano and Tehching Hsieh's *Art/Life: One Year Performance (a.k.a. Rope Piece)* (4 July 1983–3 July 1984), in which the artists spent a full year tied together at the waist by an eight-foot length of rope; or actions performed specifically for the camera, such as Yves Klein's *Leap into the Void* (1960), which involved a photomontage of two separate images. Anne Marsh provides a more general description of performance art as: "a form of art that happens at a particular time in a particular place where the artist engages in some sort of activity, usually before an audience" (qtd. in Ward 36), which through its vagueness seems to function fairly well, but at the same time could include many things that would probably not be considered performance art proper. Overall, performance art is a difficult category to pin down, but for the purposes of this essay, performance art will be considered as a form of art that involves space, time, the performer's body, and some sort of relationship between performer and audience.

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6 A prime example of parameters being laid out for an otherwise open-ended performance can be seen in the Fluxus-produced *Event Scores*: "taut little propositions, exercises, or word-objects, usually printed on small, often disposable, cards or sheets of paper. For example:

Disappearing Music For Face

smile

stop to smile

C. Shiomi, February 1964" (Doris 99).

7 Goldberg maintains that "the definition of performance art is open-ended" ("Performance" 12) so her "attempt" as I have described it tries to get at some essential quality that unites performative works without delimiting their scope.

Regardless of the subtle variations in definition, many theorists, such as Peggy Phelan, see the live and ephemeral nature of performance art as essential to the genre's form:

> Performance's only life is in the present. Performance cannot be saved, recorded, documented or otherwise participate in the circulation of representations *of* representations: once it does so, it becomes something other than performance. (146)

Phelan promotes the idea of an "authentic" way of knowing the performance piece that is only possible through the visceral, fully sensorial, live experience, and the idea that the performance is meant to disappear, living on only in the memory of the select few who were present at the event. As romantic as this view may be, it is limiting, both in terms of the work being seen by a large a large audience and for it to have any life at all after the initial engagement. Performance artist Laurie Anderson describes her own experience with this same ideal:

> I myself used to be very proud that I didn't document my work. I felt that, since much of it was about time and memory, that was the way it should be recorded—in the memories of the viewers—with all the inevitable distortions, associations and elaborations. Gradually I changed my mind about making records of events because people would say things like, "I really loved that orange dog you had in the show!" And I never had an orange dog ever. I started to keep track of things after that. I just didn't want it to disappear. (6–7)[8]

Much like my own recollection of the performance at Art System, there are bound to be gaps in the memories of those who were present, and memory is prone to morphing and shifting over time, thus distorting pivotal aspects of the original piece.

In some cases, performance works are re-performed as a way to renew the possibility of an "authentic experience" and to revive the living memory of the work; however, due to the

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8 Marina Abramović has expressed a similar change of heart: early on, she says, "we decided that we wouldn't make any documentation of our work. It would only exist afterward by word of mouth" (qtd. in Chalmers 33). "At a certain point," writes Chalmers, "she simply changed her mind about documentation" (Chalmers 33).

element of chance involved in most performance art, these re-performances unfold in a divergent manner and occur under drastically different circumstances. Even the occurrence of the event during a different historical moment has the potential to drastically alter the audience's reaction, the meaning of the work and the overall experience of the piece, so one does not acquire an "authentic experience" of the original event, but rather an experience of a new performance that is essentially a "cover" of the original (Chalmers 25). Notable examples of this practice would include Marina Abramović's *Seven Easy Pieces* (2005), where she re-performed performance works by a number of well-known artists,[9] and the BBC Symphony Orchestra's re-performance of John Cage's *4'33"* ("Radio 3").[10]

For most viewers, including the art historian Amelia Jones, photographic documentation is the only way through which to acquire knowledge related to the experience of the event without having been there, especially for events that occurred before one's birth. The photographic record may not present the same full-fledged and fleshy phenomenological experience as the live event, but according to Jones "neither has a privileged relationship to the historic 'truth' of the performance" (11).[11]

Jones proposes that when we consider the photographic documentation along with other supplementary materials,[12] we can come to form, in the words of Jacques Derrida, "the mirage of the thing itself, of immediate presence, or originary perception" (qtd. in Jones 14). Additionally, Jones argues that, much like the relationship between audience and performer,

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9 *Seven Easy Pieces* consisted of re-performances of Bruce Nauman's *Body Pressure* (1974), Vito Acconci's *Seedbed* (1972), VALIE EXPORT's *Action Pants: Genital Panic* (1969), Gina Pane's *The Conditioning, first action of Self-Portrait(s)* (1973), Joseph Beuys' *How to Explain Pictures to a Dead Hare* (1965) and Abramović's own *Lips of Thomas* (1975) – along with a new piece titled *Entering the Other Side* (2005).

10 *4'33"* could be considered a "musical" performance rather than a piece of performance art; however, I would argue that it is indeed performance art because it depends upon the artist's body being present in the space while actively *not-playing* their instrument.

11 Jones extends this idea, proposing that the subsequent view may in fact be the more thorough understanding of the work: "While the viewer of a live performance may seem to have certain advantages in understanding such a context, on a certain level she may find it more difficult to comprehend the histories/narrative/processes she is experiencing until later, when she too can look back and evaluate them in hindsight….it is hard to identify the patterns of history while one is embedded in them" (12).

12 The other supplementary materials Jones mentions include "the spoken narrative, the video and other visuals within the piece, the video, film, photograph and text documenting it for posterity" (14).

the exchange between viewer and document is intersubjective,[13] albeit in a mediated way. But then for Jones, "there is no possibility of an unmediated relationship to any kind of cultural product, including body art" (12). Using Carolee Schneeman's *Interior Scroll* (1975) as a specific example, Jones states that "having direct physical contact with an artist who pulls a scroll from her vaginal canal does not ensure "knowledge" of her subjectivity or intentionality any more than does looking at a film or picture of this activity" (13). For Jones, the very notion of an "authentic" live experience is no more than an idealistic fantasy or a "modernist dream" (17).

Philip Auslander takes this idea further by proposing that the live event is, for the most part, incidental.[14] For Auslander, the "performance" lies within the documentation itself, specifically within the relationship between viewer and image: "Perhaps the authenticity of the performance document resides in its relationship to its beholder rather than to an ostensibly originary event: perhaps its authority is phenomenological rather than ontological" ("Performativity" 9). In emphasizing the relationship between the viewer and the image over the relationship between the performance and its documentation, he allows for what he refers to as *theatrical* documentation or performed photography,[15] such as Yves Klein's *Leap into the Void* (1960), to be considered as valid performances in their own right. Using the example of Klein's *Leap,* Auslander states:

> [T]o argue that Klein's leap was not a performance because it only took place within photographic space would be equivalent to arguing that the Beatles did not perform the music on their *Sgt. Pepper's Lonely Hearts Club Band* album because

13 Jones writes, "While the live situation may enable the phenomenological relations of flesh-to flesh engagement, the documentary exchange (viewer/reader <->document) is equally intersubjective" (12).

14 "In other words, while the presence of an initial audience may be important to performers, it is merely incidental to the performance as documented" (Auslander "Performativity" 7).

15 *Theatrical* as opposed to *documentary*, the latter referring the traditional notion of performance documentation that serves as "proof" of the event and is considered to have an ontological and indexical relationship to the original performance (Auslander "Performativity" 1). The Theatrical category pertains to " 'performed photography' ranging from Marcel Duchamp's photos of himself as Rrose Selavy to Cindy Sherman's photographs of herself in various guises to Mathew Barney's *Cremaster* films" (Auslander "Performativity" 2).

> that performance exists only in the space of the recording: the group never actually performed the music as we hear it. ("Performativity" 9).

For Auslander, it does not matter whether the documentation is truthful, deceitful, or manipulated. The indexical relationship to the original event is mostly irrelevant—the performance exists within the viewer's imagination, in their current present as they recreate the event for their self, through an *experience* of the performance documents ("Hermeneutics" 95). This does not mean that the document holds no connection to the past—just that it does not afford the viewer direct access to the originating event. Instead, Auslander proposes that the photographic documentation functions "as a text from which we can imaginatively reactivate historical performances in the present, allowing us to understand experientially both the past and our present as they are disclosed in and through an ongoing dialogue with one another" ("Hermeneutics" 95).

Hans Belting also proposes a phenomenological, experiential approach to photographic documentation by considering the viewing of an image as an event in itself: "Images are neither on the wall (or on the screen) nor in the head alone. They do not exist by themselves, but they *happen*; they *take place*" (Belting, "Iconography" 302). Belting proposes a new way to consider photography that consists of three components: image, medium and the viewer's body.[16]

> We must address the image not only as a product of a given medium, be it photography, painting, or video, but also as a product of ourselves [our body], for we generate images of our own (dreams, imaginings, personal perceptions) that we play out against other images of the visible world. ("Anthropology" 2)

In essence, the viewer's body "performs the image" (Belting, "Iconography" 311) and the image event is a negotiation between the viewer's body and the medium. However, for Belting, there is no direct or "truthful" connection between the viewer and the image (or the originating event) as "no visible images reach us unmediated" ("Iconography" 304).

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16 Belting explains these terms further: "*Medium* here is to be understood not in the usual sense but in the sense of the agent by which the images are transmitted, while *body* means either the performing or the perceiving body on which images depend no less than on their respective media" (302).

In a similar fashion, Georges Didi-Huberman, writing about four specific images that depict the mass killing of Jews during the Holocaust,[17] acknowledges the problems that arise due to considering images as matters of fact and holding on to an expectation that they carry the complete and absolute "truth":

> [W]e often ask too much or too little of an image. Ask too much of it—"the whole truth" for example—and we will quickly be disappointed. … Or else we ask too little of images: by immediately relegating them to the sphere of simulacrum … we exclude them from the historic field as such. By immediately relegating them to the sphere of the document—something easier and more current—we sever them from their phenomenology, from their specificity, and from their very substance. In every case the result will be identical: the historian will continue to feel that … 'the images whatever their nature, cannot tell what happened.' (32–33)

Of course the cultural and historical stakes around images of the Holocaust far exceed the parameters of this discussion, but Didi-Huberman's discussion, like Auslander's and Belting's, helps us to consider photographs in a new way. Didi-Huberman argues that the power residing in such documentary images is situated not in their ability to depict events through any sort of direct indexical relationship, but instead in their capacity to aid and inspire our imagination—because, as he states, "To remember, one must imagine" (30) and "In order to know, we must imagine for ourselves" (1).

Didi-Huberman describes the process of viewing a photograph as a *quasi observation* that functions as an interpretation augmented by the "historical *imagination*—written documents, contemporary testimonies, other visual sources" (113–114). Much like Amelia Jones' notion of a "mirage," these elements combine to form a tacit *montage* of knowledge within one's imagination. However, he also states that "an image without imagination is quite simply an image that one didn't spend the time to work on" (116). Imagining, on the part of the viewer,

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17 These four images were produced by a member of the Jewish Sonderkommando, a group of Jews "recruited" to facilitate the gas chamber exterminations, and smuggled out in order to bear witness and provide testimony of the events taking place.

involves mental work, a consideration of external information and an acknowledgement of the various mediators involved in the production of the image in question.

In terms of such mediators, the most obvious and influential is the photographer. As Hans Belting states, "Our bodies function as media themselves, living media as opposed to fabricated media. Images rely on two symbolic acts which both involve our living body: the act of *fabrication* and the act of *perception*, the one being the purpose of the other." ("Anthropology" 3). The act of image fabrication is obviously contingent upon the living body of the performer who performs in front of the camera, but also upon the living body of the photographer *performing* behind the camera—which in turn is visible to, and has an effect upon, the performance occurring in front of the lens. Yet, the role played by the photographer in performance art documentation is rarely considered, let alone acknowledged. Typically, the photographer is viewed simply as a black box through which one gains access to a supposedly unmediated, objective, and mechanical depiction of the event.

This neglect is explicitly acknowledged by Kathy O'Dell in her essay "Behold!" which appears in the *Live Art on Camera* exhibition catalogue:

> Ironically, the photographer has been historically invisible in the contract-like agreement that pertains to the recording of live events, even though he or she may have been most engaged in the material sense. (35)

The *Live Art on Camera: Performance and Photography* exhibition attempted to "disallow such invisibility" of the photographer (O'Dell 35) and to present the idea of a hybrid identity for the performance art document.[18] As Stephen Foster explains in the catalogue's introduction, "the document of a performance is not the work and neither is it a document; in every case it holds a position somewhere between the two" (Foster v–vi). However, *Live Art on Camera* is a distinct outlier and with few exceptions,[19] the photographer's influence is almost never mentioned.

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18 The *Live Art on Camera: Performance and Photography* exhibition took place from September 18 to November 10, 2007 at the John Hansard Gallery in Southhampton UK.

19 These rare instances include Philip Auslander's inclusion of a quote by Gina Pane, where she recounts, "So, the photographer is not an external factor, he is positioned inside the action space with me, just a few centimeters away. There were times when he obstructed the [audiences] view!" (qtd in "Performativity" 3);

This general omission of the photographer's influence seems to reflect a desire for a form of mechanical objectivity,[20] where the use of the camera is seen to produce a direct and unmediated connection to the originating event/phenomena. Any acknowledgement of an author would introduce an element of subjectivity, thus defeating the objective ideal. This sentiment is demonstrated in the essay *In Our Image* by Morris Wright where he states: "In the anonymous photograph, the loss of the photographer often proves to be a gain. We see only the photograph" (540). Using the hypothetical example of photographs from Golgotha or the sacking of Rome, he explains further:

> I would personally prefer that the photograph be stamped *Photographer Unknown*. This would assure me, rightly or wrongly, that I was seeing a fragment of life, a moment of time, as it was. The photographer who has no hand to hide will conceal it with the least difficulty. (544)

Nevertheless, Wright implies that even though he wishes for the photographer's "hand" to be omitted, it is never truly absent, but merely *concealed*. Perhaps a better approach would be to simply embrace the subjectivity of the photographer, allowing for their "hand," which necessarily shapes the resulting images, to be *revealed* and considered as a mediator. In this way, the photographer's subjectivity could provide additional information that assists in the construction of a personal understanding of the event acquired through the use of one's imagination.

Based on my own experience documenting performance art, I can attest that I, as a photographer, am never an objective black box that merely takes in input from the event and spews out the "truth" from the other, nor am I ever an invisible fly on the wall. I would be more aptly described as the elephant in the room.

Babette Mangolte's essay, "Balancing Act Between Reason and Instinct: or How to Organize Volumes on a Flat Surface in Shooting Photographs, Films, and Videos of Performance," detailing her own experiences and approach to documenting performance art; as well as Philip Auslander's subsequent article "Towards a Hermeneutics of Performance Art Documentation," which drew heavily from Mangolte's article.

20 "By *mechanical objectivity* we mean the insistent drive to repress the willful intervention of the artist-author, and to put in its stead a set of procedures that would, as it were, move nature [the original event] to the page through a strict protocol, if not automatically" (Daston and Galison 121)

Over the years, I have photographed performances by Gale Allen, Guillaume Désanges (with Hélène Meise), Michael Dudeck, Redmond Entwistle, Michael Farnan, Francisco-Fernando Granados, Reena Katz, Sung Hwan Kim, Tanya Mars, Jon McCurley, Freya Olafson, Ignacio Peréz Peréz, Don Simmons, Zoe Stonyk, and Claudia Wittmann, as well as covering the 7a*11d International Festival of Performance Art and numerous events hosted by the FADO Performance Art Centre—and in every case, I have interfered and become implicated in the performance. I am well aware that my presence as a photographer is always an issue and it is always something that I discuss with the artist(s) before the performance begins. During this discussion, I review the challenges of getting decent images without interfering, in order to gauge where the performer's priorities lie: in the event itself or in its documentation. We agree upon parameters such as whether or not I can move around during the performance, whether I can move in front of audience members, if I can use a flash or not, and whether I should hold back from shooting during quiet periods lest the sound of the camera's click break the solemn quality of the moment. The results of this discussion vary, but in most cases, artists lean towards allowing me to do what is necessary in order to get good images, as they usually appreciate and acknowledge the significance of documentation for the viability of their work.

Figure 11: Gale Allen – *Free My Voice* (Hysteria Festival, Oct 22, 2009), photo by Dave Kemp

Figure 12: Guillaume Désanges – *A History of Performance in 20 Minutes: A Performance Lecture with Hélène Meisel* (Gallery TPW, June 10 , 2010), photos by Dave Kemp

Figure 13: Redmond Entwistle – *Satellite* (Gallery TPW, October 17, 2009), photo by Dave Kemp

Figure 14: Tanya Mars – *In Pursuit of Happiness* (Nuit Blanche, Sept. 30, 2006), photos by Dave Kemp

Figure 15: Sung Hwan Kim – *In the Room* (Gallery TPW, April 7, 2009), photo by Dave Kemp

Figure 16: Jon McCurley – *Double Double Land Land* (Gallery TPW, January 8, 2009), photos by Dave Kemp

Figure 17: Don Simmons – *Sweet Ecstasy: Plans for an Escape Route* (Rhubarb! Festival, February 7, 2009), photo by Dave Kemp

Figure 18: *7a*11D – International Festival of Performance Art* (October 2006) - Mebuyan (Left), Les Fermières Obsédées (Right), photos by Dave Kemp

Figure 19: Ignacio Peréz Peréz – *Open Barter Market* (Part of the *Escapist Action: Performance in Recession* festival, November 26, 2009), photos by Dave Kemp

An extreme example of my interference occurred when I was commissioned to photograph Michael Dudeck's performance *Parthenogenesis* at the Pari Nadimi Gallery in Toronto in 2009. Being a young performer, Dudeck wanted to obtain high-quality documentation in order to help establish his career, so he gave me free reign to do whatever was required. The performance involved a number of mannequins covered in hockey tape, gas masks, and deer antlers and scattered around a large room, functioning for the artist as shamanic objects with which he would interact in a ritualistic and sexualized manner. When the audience arrived, they lined up, in a conventional manner, with their backs against the outer walls, looking in toward the main space of the gallery. The only figures on display in the centre of the room were the artist (dressed in shamanic garb), the mannequins, and me (dressed all in black at the artist's request). Compounding my situation as a spectacle in the middle of the gallery was the fact that I had recently suffered a severe Judo injury,[21] which had left my knee stuck in a bent position and had me walking with a significant hobble for a number of months

21 I had a torn the meniscus in my right knee which had shifted to become jammed in the joint created a "locked knee" condition. This resulted in my knee being stuck in a bent position. Ironically, the identical injury occurred to my left knee in 2012 – also a result of Judo practice.

while I awaited surgery. So, as the performance progressed, the artist was followed by a limping, clicking, shadowy figure who was in no way part of the intended display, but had, through the need for documentation, become a part of the spectacle – thus drastically altering the audience's experience of the performance as a live event.

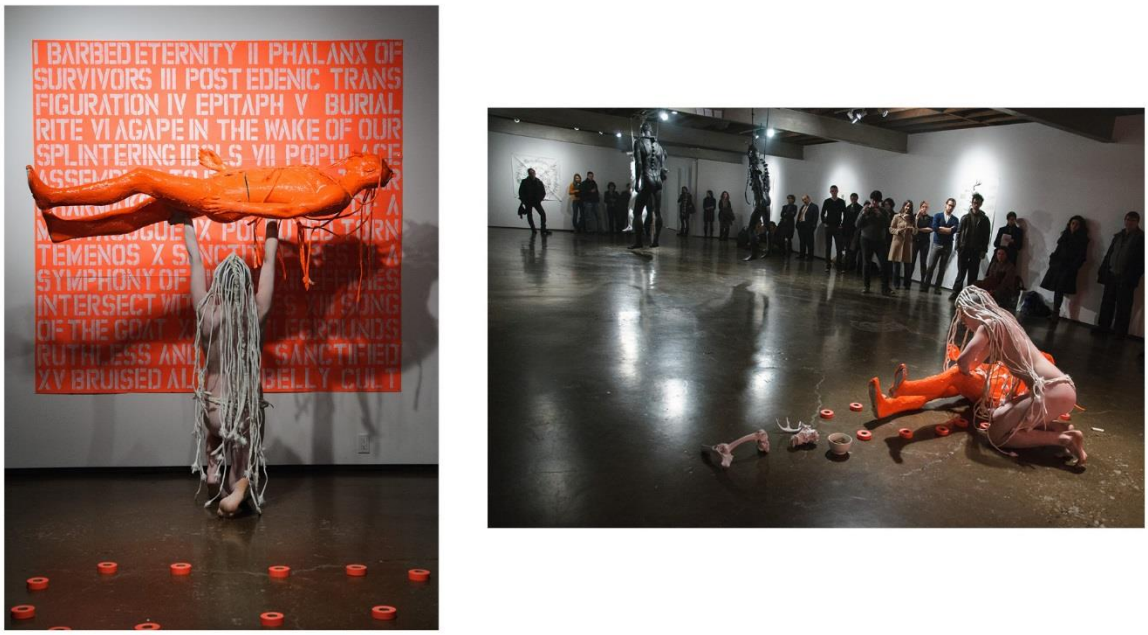

Figure 20: Michael Dudeck – *Parthenogenesis* (Pari Nadimi Gallery, Feb 5, 2009), photos by Dave Kemp[22]

In many ways, the photographer, through necessity, becomes a performer in their own right. In her analysis of Vito Acconci's *Following Piece* (1969), Margaret Iverson describes such a dynamic. In the performance, Acconci would follow a randomly selected stranger while remaining unobserved. The task/performance would end when the followee entered a private space. Acconci repeated this action every day for three weeks. Towards the end of this period, he commissioned a photographer to document his actions, which, as described by

22 Through looking at the two images together, you can imagine where I would have been standing in order to capture the image of the left.

Iverson, "lengthened the parade of followers by two: the photographer and the viewer of the photographer" (Iverson 99). By commissioning the photographer, Acconci opened up the possibility for an audience to experience his artwork, but at the same time altered the "essence" of the performance: he himself being visibly followed while following creates an entirely new dynamic.

This interference on the part of the photographer is not always a negative influence and at times can become a beneficial extension. Carolee Schneemann describes experiencing the photographer's flash as a form of positive feedback:

> Within the solo works, being blinded by a flash is a most positive interaction! In the pieces where I am working with projections I am in darkness, I don't see the audience. So when the flash goes off—it is vibrant, participatory—like some kind of lightning bugs, opening space within space. At that point I can tell, 'They've got it!' Absolutely the right moment! At the back of my reptilian brain I know that is the moment I needed them to capture: an energy communication. (Schneeman 9)

In a similar fashion, during a recent performance of *The 5th Annual Power Animal Party* by Michael Farnan, my presence, as the photographer, was reconfigured as I became a form of paparazzi that accentuated the "celebrity" status of his fictional character, AssFace, the Plastic Shaman to the Stars.[23]

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23 After the performance it was also suggested (in a jovial manner) that I could have manifested an even greater influence by also taking on the role of bouncer and helping to manage and potentially eject some excessively drunken audience members who became a disruptive presences towards the end of the performance; however, I held back in that particular role, deciding that ejecting audience members without explicit directions to do so went beyond my expected role as photographer.

Figure 21: Michael Farnan – *The 5th Annual Power Animal Party* (Gallery West, January 10, 2014), photo by Dave Kemp

Beyond the influence of the photographer's body within the space of the performance, the mere presence of the camera significantly alters the way in which events unfold. With an awareness that their image may be captured and scrutinized by others at a later date, both performers and people in the audience tend to act differently: they pose and make attempts to appear in a self-flattering way, or they alter their path and actions in order to avoid the camera's gaze altogether. As Henry M. Sayre states, "Clearly the very presence of the camera alters its object; it is the camera that defines and requires the moment's very staginess" and "our awareness of such posturing undermines the seeming objectivity of photography as a medium" (52–53). Similarly, in the words of Roland Barthes:

> In front of the lens, I am at the same time: the one I think I am, the one I want others to think I am, the one the photographer thinks I am, and the one he makes use of to exhibit his art. In other words, a strange action: I do not stop imitating

> myself, and because of this, each time I am (or let myself be) photographed, I invariably suffer from a sensation of inauthenticity, sometimes of imposture.
>
> (Barthes "Camera" 13)

Not only does the camera induce a degree of pretense in both performers and audience members, but it also functions to turn the event into a spectacle. The presence of the camera visually indicates that the situation occurring before the lens is worthy of documentation, hence is worthy of attention and, as such, passers-by take notice. A simple example of this is seen in the "documentary" *Exit Through the Gift Shop* in a scene where documentary filmmaker Thierry Guetta (Mr. Brainwash) is following graffiti artist Shepard Fairey as he makes a new piece of street art on a public wall (a performative act in itself).[24] As Fairey begins, he turns to Guetta, directing him to shoot from the other side of the street: "Don't film from that side, film from this side over here. You understand why, right? Because you're going to attract attention." But it is already too late and the police show up a few seconds later.

As for my own experience in this regard, the best example occurred while I was documenting the relational/public performance work *Each Hand as They are Called* by Reena Katz. This was an extended piece involving numerous public performances taking place in Toronto's Kensington Market over the course of one week in October of 2009. Included in Katz's piece was a series of minor performances involving the spontaneous appearance of a duo singing traditional Yiddish songs backwards. The time and location of these small, intimate performances were left to chance (determined by a roll of dice) in order to facilitate serendipitous encounters with unsuspecting members of the public. A number of these performances occurred exactly as intended, as quiet little surprises, but due to the need for documentation, a majority took place with me in tow as the photographer (as well as, in a few cases, a second individual with a video camera on a tripod), lying visibly in wait for the event to begin, thus diminishing the potential of a serendipitous and surprise encounter.

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24 It should be noted that the film is most likely a hoax and a parody constructed by Banksy as a critique on the commercialization of the art world and the character of Thierry Guetta (Mr. Brainwash) is most likely a constructed persona; however, it still serves as an excellent example of this type of interaction between artist and photo/video documentarian.

Figure 22: Reena Katz – *each hand as they are called* (Kensington Market, October 1-25, 2009), photos by Dave Kemp

My intent is not to be critical of these artists for choosing to obtain good documentation at some expense to the intimacy of their live performances. After all, the reality, as described by Jones and Auslander, is that the performance lives on and will be experienced primarily through its documentation. Therefore, satisfactory documentation is a crucial part of the performance's existence as an artwork.[25] My intent is simply to show that the photographer and the camera are always implicated in some way in the performance they document, and it is a trade-off that the performing artist must always carefully weigh.

Heisenberg's Uncertainty Principle is a useful analogy through which to think through the potential influence of the photographer on a performance art event:[26]

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25 This also opens up potential problems in terms of authorship and ownership, if one considers the documentation photograph as an art object that is to be bought and sold in the art market. Is this document a product of the artist, the photographer, or a collaborative production by both? In any case, who should receive the proceeds from such a sale? I once had an artist approach me indicating a desire to sell my documentation of his performance through his dealer in New York. He offered me a percentage of the sale, which seemed fair enough in my opinion, but I have yet to hear back – I am not sure if they were never put up for sale, never sold, or if his dealer simply convinced him that my role in making the actual images was incidental. An interesting example of this dynamic is described by Alice Maude-Roxby in her article on the "performance to camera" *collaborations* between the photographer Manuel Vason and various performance artists, for which copyright is collectively shared (Maude-Roxby 54).

26 It should be noted that Heisenberg's Uncertainty Principle pertains specifically to the quantum scale, so I reference it here only as an analogy – it is not the case that it actually comes into play in the observation of

> The mathematics of Heisenberg's theory implied that gathering information about one of a pair of complementary observables would cause you to lose information about the other. (Seife168)

So, should you measure the particle's position, you would lose information about its momentum. Conversely, if you measure its momentum, you increase the uncertainty of where it might be located.

> At its logical extreme, if you somehow were able to determine with 100 percent accuracy how much momentum a particle carries, you would know nothing about where it is. It could be anywhere in the universe." (Seife 169)

In much the same way, the experience of the live event is in balance with the experience of the documentation, as a pair of complementary observables. Having a pure, unadulterated, and "authentic" live experience would mean absolutely no interference on the part of the photographer—which would mean, in turn, that no documentation is produced and hence there exists no possibility for a viewer to experience the documentation after the fact. Conversely, a perfectly documented event would allow the photographer total control over all aspects of the performance without the presence or interference of an audience—this, in turn, would eliminate all possibility of a "live" experience as a member of the audience.[27] Klein's *Leap into the Void* would safely fall into this second category. Yet in most cases the photographer's effect lies somewhere along the continuum, with a degree of photographic influence distorting the live event and a degree of rawness or missed information within the documentation. However, the viewer can avoid seeing these necessary conditions of performance v. documentation as "deficiencies" or problems, by simply considering them as *part* of the event—and not to attempting to remove, ignore, or erase them as Morris Wright would suggest.

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a performance art event. On a more macro scale, such as observing a performance event, the more accurate scientific analogy would be the so-called *Observer Effect* (Sassoli de Bianchi 3), where any act of observation or measurement is seen to have an effect on the thing being observed or measured. For instance, if one places a thermometer in a glass of water to measure its temperature, the thermometer will have its own pre-established temperature, which will subtly heat-up or cool-down the water in the glass thus affecting the final reading to a small, but not always insignificant, degree.

27 Except perhaps for the performers and the photographer.

In his essay "How to Be Iconophilic in Art Science, and Religion?" Bruno Latour examines such mediators and proposes that viewers should approach images according to an *iconophilic* approach rather than as an *idolatry* of the image.[28] To illustrate this, Latour uses the example of a map as a mediator between a group of scientists in a Brazilian café and an actual location in the Amazon rainforest. The map allows the scientists to point to, designate, and "see" the very real spot they plan to visit the next morning.[29] The question Latour asks is: what do they actually "see"? If one embraces idolatry, they would claim that they see nothing but the piece of paper before them, since the designated landscape is absent. However, if one takes an iconophilic approach and considers the scientists as relating to the location "through a long series of intermediary steps" (419), they are indeed able to see *according to* the map and thus *imagine* the location for themselves. As explained by Latour, "Iconophilia is respect not for the image itself but the movement of the image" (421). It should also be noted that even though the map, or a photograph for that matter, is a *construction* achieved through intensive mediation, this does not make it a fiction or a simulacrum—there are still what Latour calls "immutable mobiles" that exist as informational constants that are "carried intact through the transformation of the media" (426). One example of an immutable mobile would be the *content* of a text, as opposed to its form—Shakespeare's *Hamlet*, for instance. Whether it is transformed from parchment to paper, from leather-bound hardcover to poorly glued pocket book, from screen to eBook, audio book to cinema—in all the cases, the *content* of *Hamlet* remains essentially constant. Even when translated into a different language, the plot and the spirit of the words remain faithful to the original source. According to Latour, through an iconophilia approach, one is able "to be a constructivist and a realist at the same time" (423).

In terms of images, the immutable mobiles are more difficult to determine, due to the uncoded nature of the information they present; however, there are still certain aspects that remain constant, for instance what the performer actually looked like.

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28 "[I]dolatry would be defined by attention to the visual per se." (Latour, 421)

29 Although not explicitly stated by Latour, it is assumed that they have not previously visited this location, so through the use of the map they are able to *imagine* a geography and a location that they have never seen.

Latour looks to Art History as a constructivist model—one from which other fields such as the sciences might learn—where the "mediators" are seen as adding to the overall quality and informative value of an image:

> [T]he beauty of a Rembrandt, for instance, could be accounted for by *multiplying* the mediators—going from the quality of the varnish, the types of market force, the name of all the successive buyers and sellers, the critical accounts evaluating the painting throughout history, the narrative of the theme and its successful transformations, the competition among painters, the slow invention of a taste, the laws of composition and the ways they were taught, the type of studio life, and so on in a bewildering gamut of heterogeneous elements that, *together*, composed the quality of a Rembrandt. In Art History the more mediators the better. (422)

However, and somewhat ironically, art historians do not apply this iconophilic view to performance art documentation. Instead, the common practice is to ignore the mediators and embrace idolatry. Viewing the document as a form of black-boxed, objective fact—then to criticize it for not living up to this imposed ideal. Perhaps this is because the performance art document is not considered as an artwork in its own right, thus is seen as unworthy of a constructivist interpretation. But as Stephen Foster writes, the performance art document is not a simply a document either: "it holds a position somewhere between the two" (Foster v–vi).

With this in mind, a constructivist view could potentially shed great light on the understanding of the performance as experienced by the viewer through such a document/artwork hybrid. As described by Kathy O'Dell, one of the few art historians to embrace such an approach:

> [T]he viewer's experience is one of narrative-in-reverse. An unconscious haptic response is mobilized as the viewer touches a photograph taken by a photographer who touched the trigger of the camera as the performer touched his or her own skin, used his or her own body both as an instrument of touch and as performance material. This chain of experience, working backward in time, subtly locks the viewer into a metaphoric complicity with the photographer/viewer, as well as with

> the performer. These links recreate the largely tacit bond that allowed the performer's actions to be played out in the first place. (qtd. in Maude-Roxby 51)

O'Dell acknowledges the series of transformations that occur in the construction of the image, described by her as a chain of touches. Through consideration of this chain, a greater understanding and an "intersubjective relationship," like that described by Amelia Jones (12), is constructed between the viewer of the performance art document and the original performer.

Another way to think of the performance art photographer would be to align them with the figure of the art critic or a writer reviewing an art exhibition—only in this case, the photographer is working in an uncoded, non-linguistic, and tacit form of interpretation.[30] In the same way that a writer chooses what to highlight and what to ignore, what to present in a positive light and what to pan, so does the photographer. Yet the photographer is typically not seen as a subject or as an author, but merely as an instrument: an intermediary black box through which information passes supposedly unaltered.

Babette Mangolte, one of the few performance art photographers to have written about her own practice, describes her approach as a "balancing act between instinct and reason" (1). She states that even though she was striving for objectivity,[31] she also valued her "instinctive reactions in confronting a performance" (3) and the significance of her intuition in interpreting the event:

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30 Performance art photographer Dona Ann McAdams describes her practice in exactly this way: "The performance photographs are an interpretation of the events on stage. They are my visceral responses to light, movement and frame. I compose in the camera and interpret movement and gesture." (McAdams 103)

31 Mangolte's text is actually somewhat conflicted, in that at certain points she makes the claim for pure objectivity – "Clearly in my mind, photography was not about passing judgment, on the contrary, it was about absolute objectivity" (2) – yet later she describes the importance of her subjective response and intuition – "for photography, all you need is intuition" (3) and then of her subjective decisions in terms of lens use, camera position, depth-of-field and composition (5). I believe her position is best summed-up in the statement "Although striving for objectivity in my documentation, I also valued my instinctive reactions in confronting the performance work" (3).

> While respecting the structure of the performance, I felt free to do some interpretation by merely using my own reactions, based on the specificity I saw in one work that was absent in another. (Mangolte 4)

In so doing, she is able to present a fair and accurate portrayal of events, yet one that still incorporates her own personal, instinctive, and visceral response. This leads to a richer phenomenological experience of the image itself, as viewers can then place themselves in her position, thus constructing a much more detailed and affective "mental image" (Magnolte 5) through the use of their own imagination.

We return to Peggy Phelan's claim that once performance art is documented it becomes something else (146). It may very well be the case that the full sensory experience of a performance event is not entirely transferred through the documentation, but only a select few are ever able to experience the performance in its initial form. This "something other" (Phelan 146) that it becomes, Jones reminds us, is what the vast majority of viewers experience as the *actual* artwork. Auslander extends this notion, claiming that the experience of the documentation is what actually matters in terms of an "authentic" experience and that the originating performance is merely a process by which to produce the artwork in the form of its documentation. Both Jones and Auslander also propose the possibility of a phenomenological experience and of an intersubjective relationship with the performer, by way of the image, through the use of one's imagination—and this sentiment is echoed by Hans Belting and Georges Didi-Huberman.

With the notion that the documentation functions, for the viewer, as an experience of an experience, the typically omitted role of the photographer rises to the forefront—because it is the photographer's experience that the viewer of the documentation experiences by proxy. The photographer is not a mechanical tool, or an objective black box that simply transfers information unaltered from input to output, but is instead a mediator who plays a role in shaping the imagery through technical decisions and subjective interpretation—as well as through their physical presence as a corporeal body implicated in the dynamics of the performance itself. Acknowledgment of this mediation on the part of the photographer should not be seen negatively by the viewer of a performance art document, or as a challenge to the documents's objectivity, but instead, as described by Latour, as a contributor to the

overall understanding of the document and as a way to augment the viewer's ability to imagine their self experiencing the event in the photographer's place.

As a way to better acknowledge the mediation of the photographer, the viewer might begin by considering the photographer as a form of critic, interpreting the event through non-linguistic and tacit means. Regardless of the specifics, the key point, to paraphrase Georges Didi-Huberman, is that we should not ask too much, or too little, of the images (32–33). The viewer cannot expect the photographic documentation of an event to contain the whole truth and the full sensory experience of the event, nor should they demand that it represent only an objective record of fact. Instead, they should allow for the subjective influence of the photographer to carry through as a form of personal storytelling, intermixed with immutable mobiles and indexes to historic fact, that when combined together help them to better imagine and experience the event for their self through the eyes of the photographer—by way of our encounter with the photograph.

4.1 Works Cited

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Chapter 5

5 A Brief Statement on *Locations*

In contrast to the *One Pixel Camera Project*,[1] which is reliant on the use of explicit captions as a form of *parergon*,[2] *Locations* (2014) does away with didactic text altogether,[3] leaving only the uncoded content of the images to explain and provide meaning in the work. *Locations* was inspired by a section of W.J.T. Mitchell's essay, "What is an Image", where Mitchell responds to Mark Twain's criticism that pictorial representation is dependent upon supplementary text to produce meaning and context. Twain presents his critique through Guido Reni's painting of Beatrice Cenci:

> A good legible label is usually worth, for information, a ton of significant attitude and expression in a historical picture. In Rome, people with fine sympathetic natures stand up and weep in front of the celebrated *Beatrice Cenci the Day Before Her Execution.* It shows what a label can do. If they did not know the picture, they would inspect it unmoved, and say, "Young Girl with Hay Fever; Young Girl with Her Head in a Bag." (qtd. in Mitchell, 527)

Mitchell counters, "But we might ask Twain how much the label would be worth, for information or for anything else, without this picture by Guido Reni" (528). Mitchell argues that the understanding of the painting is dependent upon a "confluence of pictorial and verbal traditions" (528), so that neither the label, nor the image tells the whole story in itself.

With the *One Pixel Camera Project* functioning analogously to a label without an image, I felt it was fitting to produce a series of images devoid of textual or explicit support. *Locations* consists of a series of images depicting banal, yet enigmatic landscapes; there is a

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1 See Chapter 3 of this dissertation, "Design of the Absurd: *The One Pixel Camera*," for an extended discussion of this project.

2 As described by Craig Dworkin with reference to Derrida: "something that at first glance appears to be an external supplement to the work, but that in fact participates as a necessary and essential part of the work itself." (23).

3 The ambiguous title, *Locations*, will be the only text presented with the work.

logic and rational behind the images and selected locales, but this will remain intentionally unstated.

Both projects involve a limited mode of knowledge transfer, a deliberate "blurring",[4] to induce an element of mystery and the unknown. In the case of *The One Pixel Camera Project,* the uncoded, pictorial image is blurred beyond all recognition, and in *Locations* it is the explicit, "verbal image" that becomes obscured.[5]

The images in the *Locations* series will be printed and framed exactly like those of *The One Pixel Camera*.[6] For my dissertation exhibition,[7] the two projects will face each other on opposite walls at the McIntosh Gallery in order to establish a visual conversation between the two bodies of artwork.

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4 As described by James Elkins: "Blur is a strategy for some fine-art photographers and painters, and a nuisance for some astronomers; yet for their different reasons, the two groups of images makers end up producing pictures that are intriguing because they show so little."(63).

5 Mitchell breaks the word "image" down into a family tree consisting of Graphic, Optical, Perceptual, Mental and *Verbal* images, proposing that all images be "understood as a kind of language." (504)

6 As 15"x15" square images, window-matted and presented in a plain white 20"x20" frame.

7 *The things you know but cannot explain*, Thursday June 12 to Saturday July 12, 2014.

Figure 23: from the series *Locations*, archival pigment print 15” x 15”

Figure 24: from the series *Locations*, archival pigment print 15” x 15”

Figure 25: from the series *Locations*, archival pigment print 15" x 15"

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Chapter 6

6 How to Watch Video: The Benefits of Becoming Bored

Over the years, I have worked with a fair bit of video,[1] but have always found its presentation within a gallery context to be both challenging and problematic. This difficulty primarily stems from a conflict between the intangible and durational nature of video, and the gallery or museum's mandate to present work as a static "art object".[2] My current project, *A Series of Boring Videos: Watched, Watching and Watch*, functions as a form of arts-based research that *qualitatively* explores the ways various presentation strategies inspire an extended and considered viewing experience.[3]

Each of the videos in *A Series of Boring Videos: Watched* (2011), *Watching* (2012), *Watch* (2013) pertains to a specific idiom of boredom: "a watched pot never boils", "watching paint dry" and "to watch grass grow", respectively. Beyond a simple tongue-in-cheek literalization of these adages, the videos are meant to encourage the viewer to engage in a close and considered look at what, in actual fact, are very complex physical, chemical, biological and psychological phenomena.[4]

This kind of close-viewing yields an intuitive and tacit type of knowledge that extends from personal experience. It is something that cannot be transferred through explicit statements, mathematical calculations or verbal descriptions.[5] In many ways, it is the type of knowledge through which we come to understand the world; yet, this way of knowing is simply not valued within science or the academic sphere because it cannot be adequately quantified or

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1 This is in terms of my own art production, my experience helping others to produce video, and the work I have done as a gallery installation technician.

2 I would argue that, because of its materiality and generally-static presence, an installation is a form of object. For the most part, an installation work is an assemblage of objects within a space.

3 See Chapter 7 for a more detailed account and definition of arts-based research.

4 As a bit of an aside, *Watched* is primarily a physical phenomenon, *Watching* centers on a chemical phenomenon and *Watch* is chiefly a biological phenomenon. Three major areas of science are represented.

5 This type of close and considered viewing is also what Goethe promotes as a way to understand the *Authentic Wholeness* or *Ur-Phenomenon* of the thing or event being observed. Further discussion of this concept and way of observing is included in Chapter 2 of this dissertation: *The Idea of Colour*.

demonstrated. It is true that, for *A Series of Boring Videos*, these phenomena are re-presented through the mediation of video, which may work against the ideal notion of "direct access" to said phenomena; however, through the processes of re-presentation and artistic mediation, the videos work to persuade the viewer to revisit these phenomena from a different angle—to see the situations with fresh eyes. In keeping with the arts-based research approach, they enable "others to vicariously re-experience the world" (Barone, 20).

Beyond simply drawing attention to these underappreciated phenomena, the videos also work to encourage a rethinking of how our perception functions, the ways understanding is generated and the role "boredom" plays in ushering us beyond an exclusively explicit way of knowing. Boredom, as a process through which one may enter a very different state of mind, is described by Siegfried Kracauer: "If, however, one has the patience specific to legitimate boredom, then one experiences a kind of bliss that is almost unearthly" (304) and, for those who "no longer know where their head is" due to the hustle and bustle of modern life, it is the "extraordinary, radical boredom that might be able to reunite them with their heads" (302). According to Kracauer, it is through boredom that one becomes *present* in the world and aware of one's own existence; however, due to the "ubiquitous abstract racket" of modern life, this can be a very difficult state to achieve.

This bored state of mind can also be attributed to an activation of the right hemisphere of the brain, where a personal, tacit and "felt" understanding of the bigger picture (context) takes place rather than an explicit naming and identifying of what one sees. This becomes a matter of knowing versus simply seeing.[6] In his essay, *The Computer as a Prosthetic Organ of Philosophy* (2003), David Rokeby provides a personal and detailed description of his experience of becoming bored:

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6 A further discussion of the role played by the right hemisphere of the mind is presented in Chapter 1 of this dissertation, through an analysis of Ian McGilchrist's book *The Master and His Emissary: The Divided Brain and the Making of the Western World.* A condensed version of McGilchrist's position is stated in his short lecture, *The Divided Brain*, which can be found online through *RSA Animate*.

> At art school, I had the great fortune of encountering some very challenging teachers. One day, one of my professors told the class that we would be looking out a window for the whole three-hour class. I was incensed. I stood at my assigned window and glared out through the pane. I saw cars, two buildings, a person on the street. Another person, another car, the sky, a cloud. For fifteen minutes I fumed, and muttered to myself. Suddenly I started to notice things. The flow of traffic down the street was like a river, each car seemingly drawn along by the next, connected. The blinds in each of the windows of the facing building were each a slightly different colour. The shadow of a maple tree in the wind shifted shape like some giant amoeba. For the remaining hours of the class I was electrified by the scene outside. After fifteen minutes, the "names" had started separating from the objects.
>
> Reflecting on this afterwards, it seemed to me that for the first 15-minute period, I had stopped seeing things as soon as I had positively identified them. At that point of identification, the word took the place of the sensed object in my consciousness and I no longer "saw" it. After fifteen minutes some part of me got very bored and shut down, some part of me let go, and the raw sense and perception data started flooding in again. (Rokeby)

I had a similar experience during my first year in art school, which in many ways served as the inspiration for *A Series of Boring Videos*. At the time, I had little money, and wound up moving back to my parent's place in Mississauga. This meant that I had a lengthy bus/subway commute to Ryerson University in downtown Toronto, where I was attending school. If perfectly timed, the trip could be done in 45 minutes; it generally took about an hour and a half and, on a bad day, could require up to two and a half hours. Being an art student, I was constantly toting a large quantity of equipment and materials (camera bags, tripods, hard cases full of lighting gear, portfolio cases, etc.) and this heavy and cumbersome load made rush-hour on the subway rather unpleasant. It was both impossible to find a seat, as a source of reprieve from the weight, and I was constantly bumping others or being bumped into because of the wide berth of my luggage.

To avoid this situation, I simply waited until rush hour was over and my favorite way to pass the time was by attending a regular experimental film series hosted by the Loop Collective in the Cinematheque Theatre at the Art Gallery of Ontario.[7] The series included films by artists such as Michael Snow, Stan Brakhage, Bruce Elder, Chris Welsby and Sergei Eisenstein, which tended to be very slow and often involved flashing colours, or some other form of lyrical structure, as opposed to a classic narrative. I have to admit that on my first visit, I found the films extremely dull but, seeing as I had nowhere else to go, I stuck with them. Like the experience of extended looking described by Rokeby, there was a certain point where everything changed and I began to see the films in a different way: they became quite wonderful as a sensual experience of light, colour and form. Beyond this enhanced awareness of the content on the screen—and perhaps more profoundly—I had become very aware of this shift in my own perception. I was able to perceive myself perceiving.

Quite fittingly, Stan Brakhage, whose films featured prominently in this film series, expresses a longing for a return to an idealized prelinguistic perceptual state of being present during infancy:

> Imagine an eye unruled by man-made laws of perspective, an eye unprejudiced by compositional logic, an eye which does not respond to the name of everything but which must know each object encountered in life through an adventure of perception. How many colors are there in a field of grass to the crawling baby unaware of "Green?" How many rainbows can light create for the untutored eye? How aware of variations in heat waves can that eye be? Imagine a world alive with incomprehensible objects and shimmering with an endless variety of movement and innumerable gradations of color. Imagine a world before the "beginning was the word." (Brakhage 31)

Brakhage acknowledges the impossibility of returning to such an unadulterated state once one has acquired language; however, this does not preclude “a pursuit of knowledge foreign to language” (Brakhage 31). I would argue that this is the primary goal of his filmic practice.

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7 For more information on the Loop Collective refer to http://www.loopcollective.com/

In a similar fashion, this is my intent with *A Series of Boring Videos*: to initiate a mental state in the viewer, through the process of "boredom", where one stops thinking explicitly—with language—and begins to appreciate something familiar in a different and more profound manner. In the process of entering a different state of perception, ideally the viewer would also become more aware of the process of their own perception itself, thus breaking down what Alva Noë describes as "the transparency of experience":

> When we try to make perceptual experience itself the object of our reflection, we tend to see through it (so to speak) to the object of experience. We encounter what is seen, not the qualities of the seeing itself. (124)

In order to make the qualities of "seeing itself" apparent, something beyond the mere presentation of an object or image must be at play. In David Rokeby's example and in my own experience at the experimental film nights, it was an *enforced* situation of intense looking, resulting in a state of "boredom," that freed us from this condition of *seeing through* our own perception.[8] Our minds grew tired and we became desensitised to the process of identifying the phenomena, thus moving on to an awareness of other features, not readily apparent at first, including an awareness of this very shift in our own perception. Noë sees artworks as a place where such a shift can occur. He specifically cites Richard Serra's large metal sculptures, such as *Running Arcs (For John Cage)*, where through a "temporally extended pattern of exploratory activity" (occurring through one's movement around and within the large metal forms) "Serra's work enables us to catch ourselves in the act of

8 I have made use of a similarly enforced state of viewership in my project *Taken: A Camera Obscura Van Project* (2003, 2007, and 2008). The project involved the very dim, inverted image within a camera obscura as a means to replicat aspects of George M. Stratton's retinal inversion experiments of 1896: *Some Preliminary Experiments on Vision Without Inversion of the Retinal Image* (Stratton). In order to perceive the dim obscura image, the viewer must remain in the dark for approximately five minutes so that his or her night vision can become fully active. This would be difficult to accomplish in a gallery space, as most viewers would simply grow tired and move on to the next work, thus missing the image's manifestation. In order to "enforce" a sufficient amount time spent with the piece, I installed the camera obscura in the back of a van, and took participants for a 20-minute journey. Beyond providing a captively enforced form of extended viewership, the van provided additional points of interest in the form of a moving obscura image and the visceral sensation of motion.

perceiving and can allow us thus to catch hold of the fact that experience is not a passive interior state, but a model of active engagement with the world" (128).[9]

Beyond the specific artworks[10] described by Noë, I would argue that there are instances where such "temporally extended pattern[s] of exploratory activity" occur. For example, consider visually engaging with the passing landscape while on a train, experiencing the slow fade of a sunset or observing the flicker of the flames in a campfire. For some reason, possibly rooted in cultural convention, these activities are seen as worthy of our consideration. They are situations when people seem willing to become truly "bored".[11] Unfortunately, such cases are rare and we seldom allow ourselves to get past the initial stage of explicit identification. This also holds true for the way we typically view artwork. Artist Paul Chan explains it is a common desire to *read* an artwork as if it were a written text:

> Many viewers treat the movement and elements within the works, whether they're installations or videos or drawings, as hieroglyphs to be deciphered. They think that if you decipher them you'll have the secret, when in fact there is no secret. It's just as strange to me as it is to them. … They want art with a message and if you get the message, you can dispense with the art itself. (95)

Like in Rokeby's description of looking out the window, the initial impulse is to try to name and identify (decode). Without effort on the part of the viewer, the experience of the work will not move past this stage of decryption. However, as Chan suggests, the core of an artwork and the rational for it to be an artwork (rather than a written text) lies beyond such

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9 Referring also to Noë's concept of *Active Perception*, as discussed in Chapter 2 of this dissertation, *The Idea of Colour*. *Active perception* is a model of perception premised upon embodied and durational experience: to perceive something, you move around it and your eyes dart over the surface, you experience it over time from different angles. From this build-up of active experience you gradually garner an understanding of the object or phenomena in your mind. This stands in contrast to the standard input-output mode of perception where the eye (or other sensory apparatus) simply captures the data in an instant, forming a complete and identical picture in the brain.

10 Noë makes specific mention of Richard Serra, Robert Smithson, Robert Irwin and James Turrell as artists working in this manner. He does not, however, limit the category to these four.

11 The "active" part of the engagement with phenomena such as passing landscapes, campfires and sunsets would be less active in terms of the body moving around (even though this is what Noë describes in relation to Serra's sculptures). The viewer is nevertheless, active in the sense of eye and head movement, and in terms of an extended observation that prompts her or him to notice gradual and subtle change that take place over time.

stringent readings. Often it is a failure to decode that yields the "I don't get it" response, common to many gallery visitors—perhaps an extended viewing might result in a tacit understanding on a nonliteral and personal level. However, an extended viewing of art is quite rare as concluded by Jeffery Smith and Lisa Smith's study *Spending Time on Art*. Smith and Smith found that "The mean time spent viewing a work of art was found to be 27.2 seconds, with a median time of 17.0 seconds",[12] which is hardly enough for even a cursory identification of content. The challenge is to find ways of engaging the viewer and inspiring the desire to spend more time with a particular artwork.

The *Slow Art Day* initiative provides one example of an organizational strategy, adopted within the art world to inspire extended viewership. *Slow Art Day* occurs annually at select institutions.[13] Participants are encouraged to "look at five works of art for 10 minutes each and then meet together over lunch to talk about their experience." (Slow Art Day) The impact of this initiative is limited by the fact that it only occurs on a single day and involves only a small group of volunteers. A preferable and more effective method would be to develop strategies of display that inspire active and extended engagement on their own without the need for external organization.

I would argue that, in a basic sense, the presentation of a photograph, video or film can inspire a greater consideration of the captured subject than an encounter with the same subject in daily life.[14] This may be true even if the extra consideration is premised simply on a curiosity as to why the photographer or filmmaker chose to generate such a reproduction. Additionally, ever since Duchamp placed a urinal on a plinth in the gallery, it is generally accepted that the context of the gallery alters (or influences) the significance of a given object or artwork. Both of these strategies apply to *A Series of Boring Videos.* On a basic level the videos do work to initiate a *look* at the phenomena depicted and the gallery setting

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12 These figures relate to viewer's experiencing of a diverse sample of artworks at the Metropolitan Museum of Modern Art. It should be noted that the recorded time spent looking also included the time spent reading the label. Times of less than 3 seconds were omitted because these were not seen as an actual observation. (Smith and Smith, 231)

13 *Slow Art Day* was held on April 12th in 2014.

14 As André Bazin argues, "the photograph allows us on the one hand to admire in reproduction something that our eyes alone could not have taught us to love." (Bazin 9)

does bestow a sense of importance upon them, but something more is required to get the viewer to encounter the work on a higher level of extended engagement. This "something more" becomes particularly difficult with durational media such as video because an extended engagement also involves a significant investment of time.

Tom Sherman, a proponent of video as an "explicit, bare-bones, non-nonsense" (61) medium, problematizes the display of video in a gallery context: framing it as a perversion of video's inherent, raw qualities through "attempts to commodify moving images as objects" (62).[15] He views video installations as rooted in a desire to make video "paintings": videos "that can still manage to hold a wall nicely in competition with paintings" (62), but are unable to tell a story or present a narrative, which he sees as video's primary function. In a similar fashion, Martha Rosler describes the museumization of video, which has "heightened the importance of installations that make video into sculpture, painting, or still life, because installations can live only in museums."(49) Aware of these arguments, I am not personally worried about preserving the "essential" character of the medium so much as I recognize that the museological transformation of the moving image into an object presents some fundamental difficulties. I see these rooted primarily in two specific features: *looping* and *overload*.

Unlike cinema or private viewership at home, when installed in a gallery video is experienced by multiple, mobile viewers that do not travel according to a common schedule. As a result, the video constantly runs on a cyclic loop and the viewer may enter the video at any point in its duration. Should the video have any sort of narrative structure or progression from point A to point B, this build-up and revelation of plot is lost to the viewer. In a sense, the punch line is delivered before the joke. One way around this is to produce "video paintings", like those condemned by Sherman, which function more as morphing, lyrical experiences to be entered at any stage during their cycle. However, for narrative video, looping is definitely a problem.

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15 The desire to make the intangible moving image of video into commodifiable objects is also seen in the art market's sale of limited edition DVDs or video artworks sold as a unit (embedded within a TV or media player).

The issue of overload addresses the limited time a viewer has to visit the gallery in contrast to the vast number of objects on display. This produces an anxious desire to move through the gallery quickly in order to see as much as possible. I would argue that this is also a factor behind the quick viewing times recorded in Smith and Smith's study. In the case of video, this anxiety becomes even greater because video work typically demands many minutes, or even hours, to be seen—far more than the measured 17-second average. Compounding the problem of overload are the "changing patterns of contemporary perception" (2), described by Claire Bishop. These are based in the digital archive and the ability to compile vast quantities of data. Bishop uses Documenta 11 as an example of this change:

> Documenta 11 (2002) was significant in many respects, not least of which was its inauguration of a tendency to include more work than the viewer could possibly see—in this case, six hundred hours of film and video. We don't ask how big a show is anymore, but how long: A tiny gallery can contain days of art. The result is that we filter and graze, skim and forward. (Bishop)

With so many hours of video, resulting from the desire to include a vast array of video "objects", it is no wonder that viewers do not sit and actually engage with the work in an extended manner.

The objectification of video can be turned into an advantage if we take into consideration the mediation of the technological apparatus: the physical aspects that become the actual "object" for gallery-based presentation of video artwork. As explained by Boris Groys:

> So we can say: The digital image is a copy—but the event of its visualization is an original event, because the digital copy is a copy that has no visible original. That further means: A digital image, to be seen, should not be merely exhibited but staged, performed. Here the image begins to function analogously to a piece of music," (85)

This potential advantage here is contingent upon the overall quality of the video as an "event"—as it is "performed" by the technological apparatus and "staged" by the architecture of the installation. After all, a talented performer should be able to engage the audience and

hold their attention. Therefore, the "event" of the video is something that should be designed as a *part* of the overall artwork.[16]

A perfect example of a successful video "event" is seen in Christian Marclay's *The Clock* (2010).[17] Marclay's video installation makes use of a cinematic presentation strategy through replicating the darkened room, large screen and comfortable seating of a movie theatre. Additionally, the content itself is derived from cinema: each real-time minute of the actual day is presented through a depiction of a timepiece sampled from a Hollywood film that displays that exact same time. Using this strategy, the viewer is primed through the convention of cinema to sit down and really watch.[18] Once past the initial barrier, she or he begins to engage on a serious level, often spending many hours with the work. Meghan O'Rourke a reporter for *The New Yorker* reports her experience with the piece as follows:

> I left Christian Marclay's "The Clock" about twelve minutes after "High Noon." I'd been there since about 10:30 A.M., thinking that I'd stay for about twenty minutes and get the feel of the thing; any longer, and the minutes might drag. But I was wrong. Time flew—it hypnotized.

In a similar fashion, Daniel Zalewski also from The New Yorker explains:

> I let "The Clock" wash over me in dreamy, overlapping waves: three hours here, four hours there. Though Marclay's montage is fun to watch, what I relished most was entering and exiting the gallery where it was showing.

The gallery itself inspired the condition of viewing that functioned as an indeterminate, almost magical, space where the fantasy of Hollywood meets with the reality of daily time. The overall experience of both the video and its performance creates a situation where the

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16 And not left to the figure of the curator, who, otherwise, through the selection of technology used to visualize the image data, "becomes even more powerful than it was before…the curator becomes now not only the exhibitor but the performer of the image." (Groys, 85)

17 The original source material is primarily film, but the presentation itself is a video transfer from film.

18 The fact that people often have to wait in line also adds a degree of extra engagement (even if it is only a case of spending time in the exhibition to make time spent waiting in line worthwhile). Moreover, the existence of the line itself adds a degree of credibility to the piece in signifying that the piece is indeed worth the wait.

viewer is inspired to remain and engage with the work in an extended manner.[19] *The Clock* also deals with the issue of looping because the viewer can quite literally enter at any "time" and achieve a full experience of the work. Moreover, the isolated space of the installation is separated from the gallery, so the viewer's attention is fully absorbed in a way that limits the desire to see what's next and thereby precludes the potential for overload.

On the other end of the spectrum is the exhibition *I Just Want to Watch: Warhol's Film, Video, and Television,* which I recently saw at the Andy Warhol Museum in Pittsburgh.[20] The exhibition consisted of two rooms, one dedicated to film and the other to TV. The better of the two was the film room, which had about twenty screens hanging by wires, each showing a projection of one of his films. There was no place to sit, the audio from one flowed into the other. Many of his durational films, including *Empire* (1964) and *Sleep* (1963) were included, but through this presentation, they demanded nothing more than the most cursory of glances. The TV room was even worse in this regard, with rows and rows of TVs (I would estimate about 100 all together) in front of uncomfortable star-shaped stools, each playing a loop of some sort of Warhol produced TV episode. The room was so overwhelming that I did not sit down to watch even a small portion of a single looping episode.

Of course, this was a curatorial design not conceived of by the artist. It could be argued the exhibition functioned as a way to create an object-based *aura* for these pivotal artworks,[21] and to act as an extension of Warhol's predilection for "aesthetic equalizing" (Reigelnegg). However, through this arrangement the *experience* of the work is lost to the viewer, as is Warhol's desire to cultivate "boredom".

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19 It is also interesting to note that Marclay comes from a background as a DJ and a musician, as demonstrated in his earlier works, so Groys analogy of "performing" video as if it were music is particularly fitting in this case.

20 *I Just Want to Watch: Warhol's Film, Video, and Television* ran from March 2010 - March 19, 2014.

21 "Aura" in the sense described by Walter Benjamin in *The Work of Art in the Age of Mechanical Reproduction.*

In terms of my own work, each of the three video in the series, *Watched, Watching* and *Watch,* has its own mechanics and conditions of performance that work to turn the exhibition of the video into an "event"—one coupled to fit with the specific nature of its content.

Watched (2011) begins with the appearance of a black speckled surface and the sound of hissing in the background. At first, the viewer is unsure of what they are looking at and, ideally, this element of mystery inspires a degree of curiosity, which draws them in through an inclination to identify and name. Over time, small circles start to form on the black surface and dance around in a chaotic fashion. Observing viewers with the work, I have found that at this stage they start to speculate and make guesses about what they are watching.[22] It is only when the first bubble releases itself from the base of the pot, and breaks the surface of the water with a ripple, that they realize that what they are watching

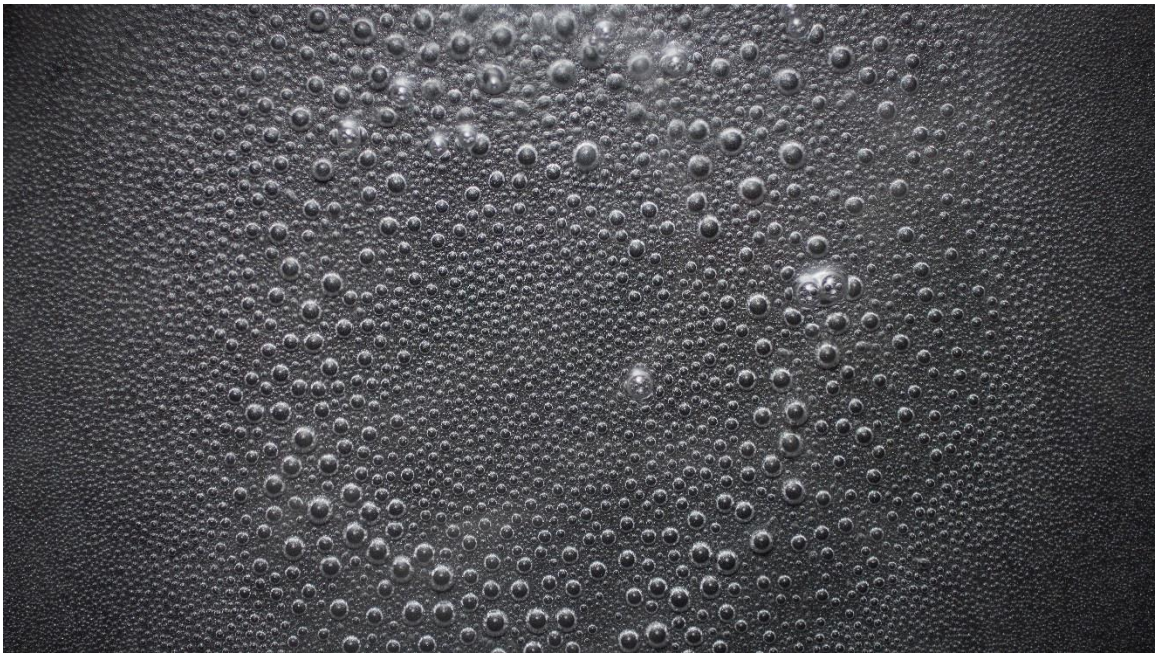

Figure 26: *Watched* (2011) - 1080p high-definition video with audio, playback initiated by viewer.

22 I have become aware of this process by listening in on conversations at the gallery, and through direct feedback in cases where I have shown the work in a one-on-one situation such as a critique or studio visit.

is the slow transformation of water from liquid to gas through a process of boiling.[23] Hopefully, by this stage, they have also become slightly "bored", and have begun to watch the movement and shape of the bubbles in a different and more engaged way. Moreover, a sense of narrative has been introduced, which will hopefully inspire viewing (past the point of recognition), in order to determine what might happen next and to see the boiling process through to its end.

I see engagement with this video as dependent upon the element of mystery, the slow revelation of what is happening and curiosity about the trajectory of the imagery. If the video was presented as a loop, this aspect would be lost.[24] Instead, it is set up as a kiosk with a button to initiate playback upon viewer interaction. In this way, it is almost guaranteed that the viewer will experience the video as an unfolding narrative without receiving any spoilers in terms of the plot.[25] The video itself is relatively short;[26] so beyond the use of the button, the installation of this work is fairly minimal. Playback is on a large flat-screen monitor in the common space of the gallery and audio from the video is allowed to mix with that of the space. A simple bench is present to provide an option for seating should the viewer desire. Through observing engagement with this video in past installations, I have noticed that it is very rare for a viewer to get up and leave before the video comes to an end.

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23 Additionally, it should become obvious that the black field is the textured surface of a Teflon pan and the hissing is the sound of a propane burner used to heat the water.

24 In fact the video has been show as a loop on two occasions: once on large outdoor screens at the Art Gallery of Mississauga for the *Celebrate the Square Festival of Video Art* (June-August 2011) and once in an abandoned storefront window for the *Switch: Contemporary Video Art Exhibition* in Nenagh, Ireland (March 2013). I was unable to view the work as installed in Ireland, but in Mississauga, it functioned in a very different way, more as an ambient pattern to be glanced at rather than something to fully engage with. I believe the work was still effective in this context, but through this strategy of presentation, it became a very different work.

25 Unless of course the viewer encounters the work shortly after another viewer has initiated playback, in which case they would come into the video part way through.

26 The actual length of the video will not be displayed in order to sustain a sense of mystery in terms of where the video will go *and* how long it will run before reaching a perceived endpoint.

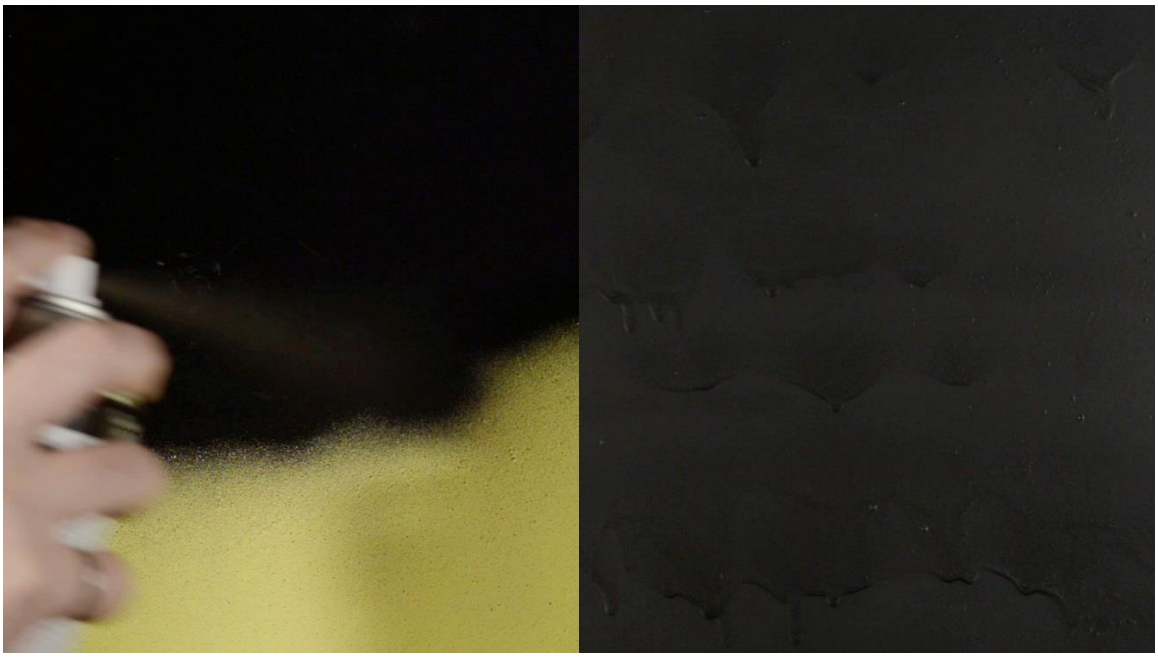

Figure 27: *Watching* (2012) - 1080p high-definition video with audio, 20 minutes, looping.

Watching (2012) functions in a very different way and is quite *literally* a moving painting—which Tom Sherman would most likely despise.[27] The screen is divided in two, with the left side depicting a forward flow of time and the right side a reverse flow of time for the same coherent image. The 20 minute video begins with the left side as a yellow field, upon which black spray paint is visibly applied, while the right side displays a dull grey and rippled surface: the end point for the drying paint. The contrast of the side-by-side comparison, coupled with the magnification of the time differential achieved through the two time frames flowing toward one another, enables the viewer to visibly discern subtle changes in the freshly applied glossy black paint as it slowly morphs into a dull-grey matt finish. The work invites the viewer to actually witness the process of paint drying, which when presented in this manner becomes quite mesmerizing. During a preliminary exhibition of the video in a

27 It could also be described as a "durational photograph": a term used by Owen Kydd to describe his own, mostly static, short looped video works which are presented on vertically oriented, flat-screen TVs (Kydd).

gallery context,[28] I was pleasantly surprised to see people spending an extended period of time with the artwork.[29]

For the installed presentation of *Watching,* a looping playback is used. Even though the spray paint is applied at the beginning and removed in reverse at the end—and despite the few frames in the middle where the dividing line between two time-frames vanishes[30]—there is little in the way of a developing narrative. The viewer can easily enter the work at any stage during the drying process. The video is ideally viewed as an emitted image on a high-quality flat-screen TV, which will render the subtle changes in contrast and hue better than the reflected image of a projection on a screen. Like *Watched,* the minimal audio is allowed to mix with other audio in the space and seating is provided.

Figure 28: *Watch* (2014) - 1080p high-definition video with audio, 490 hours (14 hours per day for 30 days).

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28 I am referring here to my solo exhibition, *Prototypes, Experiments and Carefully-Considered Observations* at the ArtLAB Gallery at Western University, London, ON in 2012.

29 Often five to ten minutes, but in some cases they would stay for the full 20-minute duration.

30 These few frames where the line between the two temporal frames vanishes could also be seen as an example of Duchamp's notion of a minimal identifiable difference or l'inframince (the infrathin) – as described by Craig Dworkin "that point at which one can just barely begin to perceive the threshold between two states."

Watch (2014) is on another order of magnitude. While the duration of *Watched* (2011) in minutes and *Watching* (2012) is in the tens of minutes, *Watch* is in the tens of thousands of minutes. Depicting the gradual process of grass growing from seed to full blades, the video for *Watch* was recorded sun-up to sundown, 14 hours a day for 35 days.[31] The grass was not grown in an isolated, controlled environment; instead the video was shot in my parents' backyard, located in suburban Mississauga. Because of this, the video depicts more than just the growing of grass. Included are hints of the surrounding environment with occasional, brief and serendipitous events taking place both on-screen and off (as depicted through audio cues). However, these events are intermittent and minimal, so the tiniest movement becomes an unlikely source of tension and visual interest.

Writing about Andy Warhol's film, *Empire* (1964), which uses a strategy similar to that of *Watch*, Pamela M. Lee states:

> Not to say that the movie is without interest or incident. Many things happen, if very small things, and all the more importance is accorded them given the noneventfulness of the rest of the film. … In the first thirty minutes, as dusk gives way to night, the building is illuminated and we nearly jump out of our seats. Noiselessly, something like a pigeon flaps by and the audience bursts into applause. (283-284)

This state of "boredom" induced through an extended watching of *Empire*, allows us to appreciate smaller things on a deeper level, and perhaps become more aware of just how much we overlook on a daily basis. I would argue the same holds true for *Watch*.

In *Watch*, the occasional squirrel or bird appears within the frame and, on rainy days, droplets emerge from behind the camera projecting themselves upon the turf below. Near the start of the video the trees above unleash a constant stream of maple keys upon the patch of what, at that point, was still bare soil. On sunny days, rays of light shine through the gaps between the leaves overhead, producing dynamic dancing patterns of light and shadow.[32] Off

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31 The video is 420 hours or 25,200 minutes in total length.

32 Drawing attention, in this way, to the patterns of light and shadow upon the grass is reminiscent of Robert Irwin's *Sting Drawing– Filtered Light* (1976) shown at the U.S Pavilion in the Venice Biennale.

screen, a constant drone of cars is audible along with the occasional airplane because my parents' house backs up on a busy road and is situated relatively close to the Toronto airport. There are also the typical sounds of suburbia, including lawnmowers, chainsaws and other tools used for yard work and home renovation, and the voices of neighbors speaking Polish on one side or with a thick Irish accent on the other. Additionally, my daughter and myself, can be heard as we play in a small inflatable pool during warm summer days.

The installation of *Watch* will be reminiscent of Marclay's *The Clock*, as it will be the singular work in a dimly lit room, separated from the interference of any external audio. The video will be projected on a large screen. It will not be on a loop, but will play through *once* during the course of the exhibition. Should the viewer miss a particular moment, once it's gone, it's gone. At the point of writing this essay, some of the exhibition specifics are still to be determined. The current plan is to include seating of an extremely comfortable nature and I am considering using lawn chairs, which would seem only fitting for a video about grass. I also hope that through the course of the exhibition, as the grass gradually grows from seed, visitors will be encouraged to return and check in on its progress.

Later exhibitions of the work could take on different formats to further this arts-based investigation of presentation strategies and even non-gallery presentations could be explored. For the moment, I feel that this presentation strategy will be able to induce a state of blissful "boredom", like that described by Kracauer, where the phenomena is seen and understood by the viewer in a new and profound manner—and where the viewer also becomes more aware of the processes of their own perception. In a way, I hope *A Series of Boring Videos* will help people see a little more than they did before.

Irwin's work involved a simple string square to define a patch of ground upon which light through the trees flickered: "With such economy of means, Irwin had defined this subtle, two-dimensional found canvas, and through the simple act of framing, he revealed a delightful naturally occurring event, one that would otherwise have remained unseen." (Davies, 31) , "Indeed, once he brought your attention to this previously invisible – or at least ignored – epiphany, the revelation of the flickering sunlight projected right at your feet became an endless source of fascination." (Davies, 31)

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Chapter 7

7 Documentation of *The Things You Know but Cannot Explain* (McIntosh Gallery, June 12 - July 12, 2014)

Figure 29: *The Things You Know but Cannot Explain*. Main gallery.

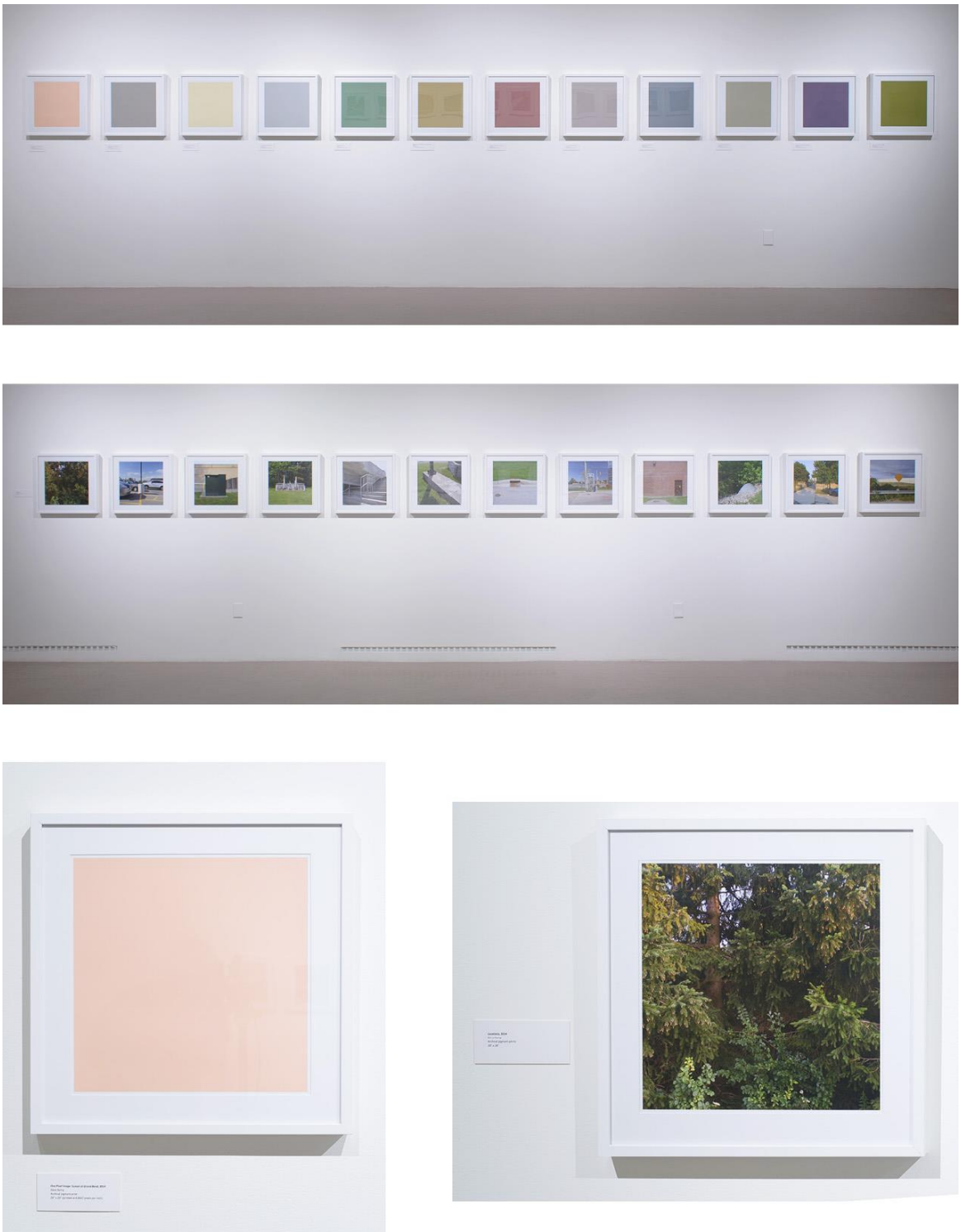


Figure 30: ***The Things You Know but Cannot Explain.*** **Main gallery, photographic works – *The One Pixel Camera* images (top and bottom left) and *Locations* (middle and bottom right).**

Figure 31: ***The Things You Know but Cannot Explain.*** **Main gallery, video projects –** ***Watched*** **(top left and middle) and** ***Watching*** **(top right and bottom).**

Figure 32: ***The Things You Know but Cannot Explain*****. Main gallery,** ***The One Pixel Camera*****.**

Figure 33: ***The Things You Know but Cannot Explain.*** **Main gallery,** ***Locations*****.**

Figure 34: *The Things You Know but Cannot Explain.* Front lobby and entrance.[1]

1 The documentation of the *One Pixel Camera* in use is included at the end of the *One Pixel Camera* book. Both books contains an extended series of images beyond those show in the gallery. The complete books can be previewed online at: http://www.blurb.com/user/davekemp.

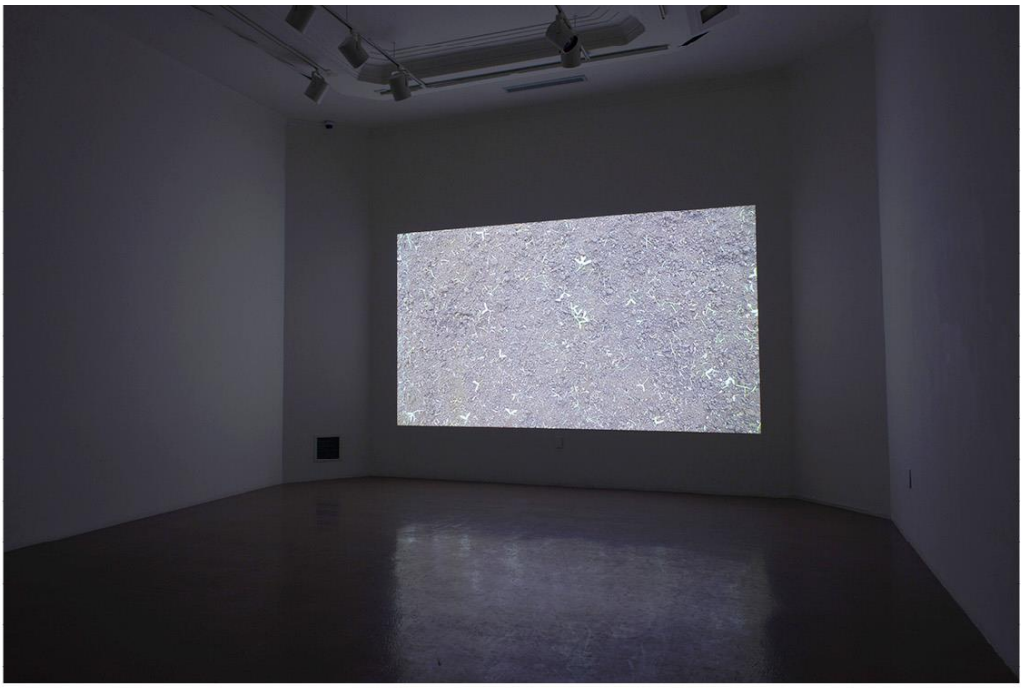


Figure 35: ***The Things You Know but Cannot Explain.*** **Small gallery,** ***Watch*****.**

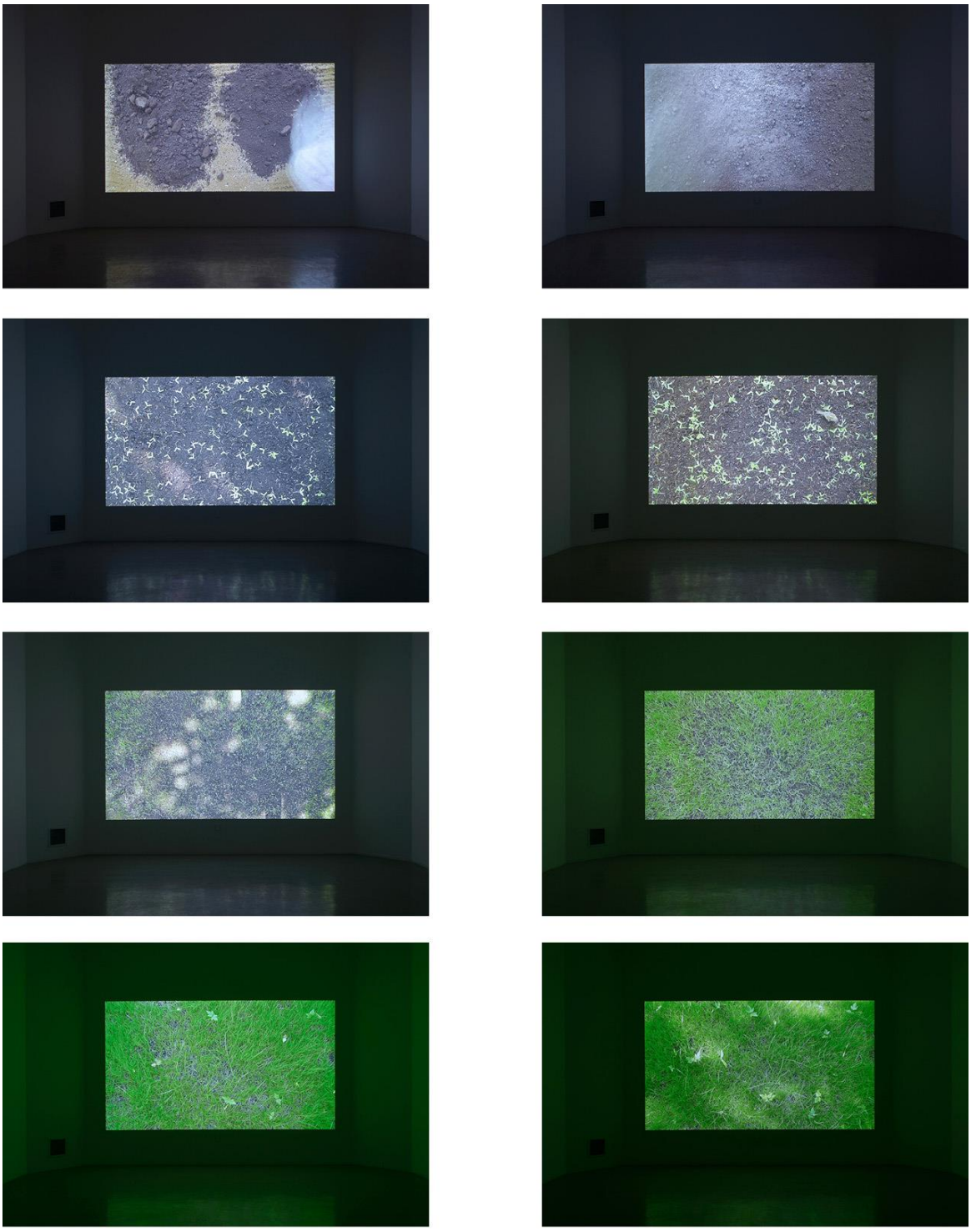
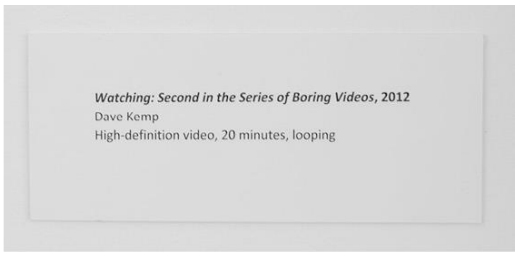
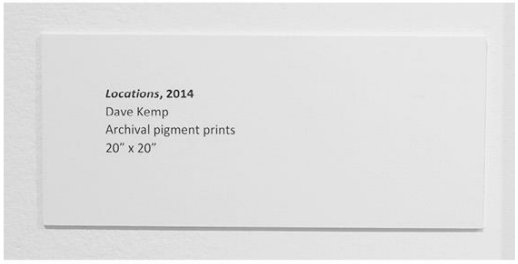
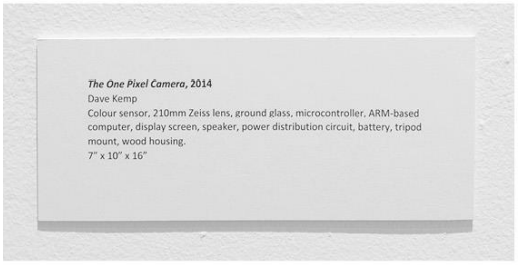
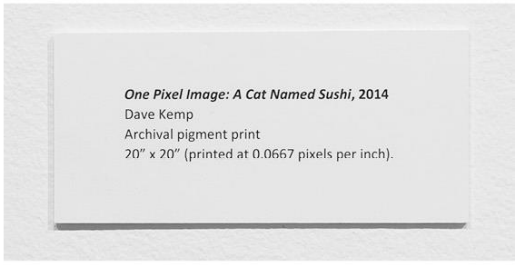


Figure 36: ***The Things You Know but Cannot Explain.*** **Small gallery,** ***Watch*** **(at various stages).**









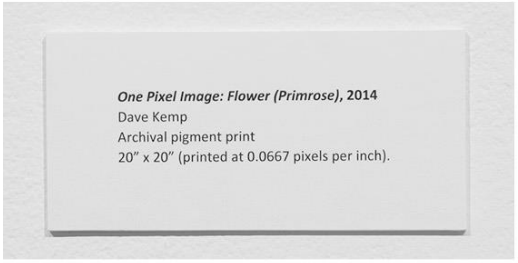


Figure 37: *The Things You Know but Cannot Explain*. Examples of labels used in the exhibition.

Chapter 8

8 Conclusion

This dissertation has been an inquiry into the nature and significance of artistic knowledge, as a subset of the larger category of tacit knowledge. Art, both in its production and reception, encompasses many diverse forms of knowledge, so by artistic knowledge I am referring to the components of art that do not conform to traditional notions of codified, propositional or explicit knowledge. This inquiry has pursued the application of artistic knowledge within science (Chapter 2: "The Idea of Colour"), design (Chapter 3: "Design of the Absurd"), art history (Chapter 4: "An Uncertain Experience"), and my personal art production (Chapter 5: "A Brief Statement on *Locations*" *and* Chapter 6: "How to Watch Video*"*). Combined, the chapters represent a meandering journey through and exploration of the questions posed in the introduction:

1. What exactly are tacit forms of knowing?
2. Why are tacit ways of knowing important, and why should we care?
3. What can be done to increase awareness, acceptance and appreciation of this type of knowledge within contemporary culture?

The introduction addressed the first two questions from a theoretical perspective while the articles provided further elucidation and expanded upon these same questions. As mentioned in the introduction, there is little in the way of scholarship relating to the third question. This final question has been examined from a number of angles within the articles and can now be approached in a more direct fashion. However, before commenting on my own conclusions, I would like to review some rare instances where speculative solutions have been offered and directions of hope have been provided.

For Bruno Latour, the solution involves moving from knowledge based in "matters of fact" to knowledge dealing with "matters of concern." Matters of fact are the typical objective, explicit "facts" about nature and our world that are deemed to be true and without doubt. Latour has spent much of his academic career disputing the validity of such matters of fact, presenting them as socially constructed understandings (or models) of nature instead of

absolute fact: “I myself have spent some time in the past trying to show ‘the lack of scientific certainty’ inherent in the construction of facts. ... I intended to *emancipate* the public from prematurely naturalized objective facts. Was I foolishly mistaken?” (Latour “Critique” 227). His “mistake” stems not only from the fact that there is still a strong belief that science produces indisputable facts, but also that his own methods of questioning “facts” have been repurposed by others to discredit and “deconstruct” *any* form of scientific knowledge. This becomes particularly problematic when the deconstruction of such facts is done with ulterior motives, as is regularly seen in industrial and political disputes over the “factual” basis of global warming. For Latour, the answer is to move away from objective and explicit knowledge (“facts”) — which, he points out, is never entirely objective, fixed and/or explicit anyway — and instead to focus on more tacit ways of knowing based in “matters of concern”:

> Reality is not defined by matters of fact. Matters of fact are not all that is given in experience. Matters of fact are only very partial and, I would argue, very polemical, very political renderings of matters of concern. (Latour “Critique” 232).

To better describe what a matter of concern is, he draws from Heidegger’s notion of a “thing”: “A thing is, in one sense, an object out there and, in another sense, an *issue* very much in there, at any rate, a *gathering*” (Latour, “Critique” 233).[1] Unlike Heidegger, Latour accepts that industrial objects, such as a can of Coke, have the potential to become “things” too; it is not a quality reserved for handmade earthenware jugs. For Latour, even a rock (the philosopher’s epitome of a mere object) can become a *thing* when considered in a certain manner: “Dolomite [a type of rock] is so beautifully complex and entangled that it resists being treated as a matter of fact. It too can be described as a gathering; it too can be seen as engaging the fourfold” (Latour, “Critique” 233). With this in mind, he uses the example of the Challenger Space Shuttle disaster as “a metamorphosis of an object into a thing” (“Critique” 234). As thousands of people worked together to gather the pieces of the

1 Heidegger’s term relating to the gathering of the fourfold — earth, sky, gods, and mortals — which come together to unconceal the mere object, allowing it to presence as a thing.

exploded spacecraft, writes Latour, "here, suddenly, in a stroke, an object had become a thing, a matter of fact was considered as a matter of great concern" (Latour, "Critique" 234).

As a more thorough explanation of what matters of concern entail, we can look to Latour's essay "What is the Style of Matters of Concern?":

> A matter of concern is what happens to a matter of fact when you add to it its whole scenography, much like you would do by shifting your attention from the stage to the whole machinery of a theatre. This is, for instance, what has happened to science when seized by the recent "science studies," what has happened to Dutch landscape painting in Svetlana Alpers' able hands, and what has happened to anatomical drawing when restaged by a contemporary artist like Jeff Wall. Instead of simply being there, matters of fact begin to look different, to render a different sound, they start to move in all directions, they overflow their boundaries, they include a complete set of new actors, they reveal the fragile envelopes in which they are housed. Instead of "being there whether you like it or not" they still have to be there, yes (this is one of the huge differences), they have to be liked, appreciated, tasted, experimented upon, mounted, prepared, put to the test. (39)

By moving away from an emphasis on – and objective belief in – matters of fact and coming to view them in a more holistic and tacit manner, allowing for the various mediators and considering the translations involved, we can start to move away from the problems associated with overly explicit forms of knowing. At the same time, accepting them as matters of concern is not to dismiss and deconstruct them as mere subjective social constructions and fabrications. Instead it is to combine tacit aspects with explicit aspects and come to form a more thorough understanding of what such matters of fact actually mean – to us and to our own understanding of the world.

In a similar fashion, Michel Serres also sees a need to reconsider our approach to knowledge:

> The question of philosophy today could therefore be formulated thus: what do we think when we know? What can we think when we know as we speak, when we

> know science in the sense in which it is active and alive, it blends into thought, in the sense in which, having learned it, our flesh had incorporated it?
>
> Not: what is there to think in science? Objective or collective science, as far as I know, answers this question by its very nature.
>
> Not: what is there to think outside of it? Or, if science is dismissed or reduced, what is there to think? (Serres 338)

Serres call is reminiscent of Latour's matter of concern in that it asks us to think about how we know scientific knowledge, the various factors involved in its "active and alive" construction and how we come to tacitly indwell such knowledge – to make use of Polanyi's terminology once again. For Serres, it is not a matter of focusing on explicit and tacit ways of knowing as being mutually exclusive, but rather looking at them as mingled and intertwined ways of knowing where the senses and intuition play a significant role.

McGilchrist presents his own remedy for, what he describes as, the left-hemisphere-dominated world that we currently occupy. For him, this remedy exists in the left hemisphere's points of weakness: "the body, the soul, and art (which relies on body and soul coming together)" (McGilchrist, "Master" 438). In terms of the body, we must come to see not the body itself, but *according* to the body, and come to view the importance of our embodied existence.[2] In terms of the soul (or spirit, two terms that he uses interchangeably), he looks back to a time when religion could provide a way out of left-hemisphere dominance. He argues, however, that with the decrease in religious belief in recent years, this role is now passed on to art. In terms of art, McGilchrist presents a very conservative and naïve viewpoint,[3] nonetheless he views art as one way in which to reintroduce the "betweenness" missing from our modern world and in this regard, I would tend to agree.

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2 A specific example of this notion is presented in Chapter 4: *An Uncertain Experience* where I argue that acknowledgement of the photographer's embodied existence is critical to producing a personal understanding, and imagining, of the experience of a performance art event through the use of photographic documentation.

3 Through expressing a strong dislike of contemporary art, such as Tracy Emin's unmade bed—which in his opinion has become overly intellectualized and based in entirely explicit, conceptual ideas—and by locating the value of art in a notion of universal beauty (McGilchrist, "Master" 443).

Latour, Serres and McGilchrist do not provide specific directions or explicit instructions about how to make such changes, but they do provide a rough sense of where we must head. For my part, I agree with their suggestions; in particular, I subscribe to the idea that art has the potential to pry us away from the overly explicit, matter-of-fact-based, left-hemisphere-centric world that we now face. In fact, the capacity for art to aid in this endeavor, through both forming and passing on tacit knowledge, is central to all aspects of my research. I do not feel it is possible to fully understand the dynamics, and value, of comingled knowing through explicit means alone. In this regard, I see the promotion and encouragement of arts-based research within the academic sphere as essential.

Arts-based research is defined by James Haywood Rolling Jr.:

> The multisystemic application of analytical, synthetic, critical-activist, or improvisatory creative cognitive processes and artistic practices toward theory building. Best at addressing questions that can neither be measured with exactitude nor generalized as universally applicable or meaningful in all contexts. Stems directly from a researcher's artistic practice or creative worldview." (8).

This is distinct from *research-based art*, or *art about research*, because it is not research performed to facilitate the making of an art object, nor is it a case of theoretical references simply being included in the artwork. The distinction is described by Tom Barone and Elliot W. Eisner in their book *Arts Based Research*:

> We are here to say that arts based research uses the arts as a foundation for creating expressive forms that enlighten. Research based art is the use of research in any modality that will serve as a basis for creating a work of art." (9)

Arts-based research asks questions and unbalances opinion in order to help people see the world in different ways. It does this rather than providing explicit answers to questions or producing matters of fact, as customary with most other forms of research. It is a form of unfinished thinking; it makes you think rather than telling you what to think:

> The deep strength of using arts in research may be closer to the act of problematizing traditional conclusions than to providing answers in containers that are water tight. In

> this sense, the products of this research are closer in function to deep conversations than they are to error-free conclusions. (Eisner 7)

Olafur Eliasson's *Room for One Colour*, described in Chapter 2, functions in this manner, by problematizing the viewer's personal understanding of colour perception, and I would argue that my *One Pixel Camera Project* (Chapter 3) challenges the perceived neutrality of the designed objects surrounding us.

Arts-based research can also function to create virtual sensory experiences that evoke the experience of another, or transport the viewer to a situation other than their own. This is not accomplished through a literal (explicit) description, but instead through the construction an aesthetic experience that transfers knowledge of that situation through tacit means: "Put another way, art is present in research when its presence enables one to participate vicariously in a situation." (Eisner 6). Arts-based research, in this sense, can make the familiar strange and the strange familiar—it is not so much what is represented, but what is presented anew. This is what I attempt to do through my photographic documentation of performance art (Chapter 4):[4] to create an experience of an experience so that the viewer may develop their own tacit understanding of the performance event. In my *Series of Boring Videos* (Chapter 5) I present familiar yet underappreciated phenomena in a new light so that the viewer may reconsider and understood them in a nonlinguistic, sensory manner. And the *Locations* project (Chapter 7) adds an element of mystery to seemingly banal landscapes leaving the viewer to ponder their unspoken significance.

Many artworks function within this definition of arts-based research; however, arts-based research is distinct in that it exists beyond the art world and is accepted as a valid form of knowledge in itself—particularly within the academic realm. However, such acceptance is a far from common. According to Tom Barone, this is detrimental to our overall scope of knowledge:

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4 My documenting of performance art events may not be part of my artistic practice proper, but I do consider it a form of arts-based research in the sense that it creates an evocative and embodied art-historical record.

> What we do argue is that there are different ways of understanding the human condition. The arts are among them, and with their virtual absence, the research community pays a dear price. Indeed, their absence diminishes our capacity for understanding. (171)

Arts-based research can be a powerful pedagogical tool for transferring tacit knowledge both in terms of its products and through the process of performing arts-based research itself (e.g. when used as a class assignment or as a form of *active learning*).[5] It is through experience, even if it is an experience by proxy, that one is able to *indwell* the very important and tacit aspects of knowledge in any field. This is true even in the sciences, as explained by Arthur Zajonc, who writes on the importance of intuitive, tacit understanding within physics:

> Herein lies the intelligent schooling of intuition. Unlike the usual laboratory experiments designed to exemplify physical laws, there would be a structured series of experiments designed to lead the student to a *perceptual* encounter with the laws of physics!
>
> Merely showing students the appropriate archetypal phenomenon by no means guarantees the concomitant perception or intuition. How many people saw the cathedral chandelier before Galileo and failed to make his observations concerning pendulum motion? The initial necessary element is the feeling of *wonder* without which the investigator can make little or no progress, but then, as the perceptual world flows into us in a coarsely differentiated fashion, faculties or abilities gradually arise which lead to a sufficiently refined perception, the result of which is cognition. (Zajonc 332)

Even though Zajonc does not explicitly state art as the means to accomplish his goal, I would argue that designing a perceptual experience, in order to inspire a feeling of wonder, is exactly what art can do. The challenge is in legitimizing art as a form of valid knowledge and

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5 "Active Learning" is a method of teaching promoted in various teaching seminars that involves the active engagement of the student as they work on open ended tasks. It is a process that involves students teaching themselves and thinking about what they are doing. For an extended explanation see Bonwell, Charles C., and James A. Eison. *Active Learning: Creating Excitement in the Classroom.*

as a means by which to transfer the intangible aspects of understanding that can helps us to see the world in new and different ways.

This will not be an easy task and I expect it will unfold as a very slow process. I would suggest the most effective and realistic way to assist with this endeavor is to produce art *as a form of research*—and to present it as such, in an attempt to prove its worth. This is what I have attempted to do with the artwork produced for my PhD, and my writing is designed to frame it as a form of research. It remains to be seen if these current projects will have an impact and a life outside of the sphere of art.

An acceptance of artistic knowledge and arts-based research would no doubt involve a profound change within academia. It would dramatically impact the ways we think about knowledge and research and, in turn, would also involve a change in the very nature of art. This may require a less individualized approach to art, and greater emphasis on collaboration with researchers from other disciplines. Or it may entail a less purified status for art, where its function is coupled with the ambitions of other fields. In the past such things were common and, prior to modernism, art was largely associated with other systems of knowledge—most notably religion. Personally, I would advocate such a change to art because I feel art should be constantly evolving. In fact, I feel it *needs* to evolve in order to remain relevant and viable within our contemporary knowledge-based economy.

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Curriculum Vitae

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Solo Exhibitions:

2014 *The Things You Know but Cannot Explain*, McIntosh Gallery, London, ON
2012 *Prototypes, Experiments and Carefully-Considered Observations,* ArtLAB, Western University, London, ON.

Group Exhibitions:

2014 *Life & Limb.* Orillia Museum of Art and History, Orillia, ON.
2013 *Switch: Contemporary Video Art in a Public Context.* Nenagh, Co. Tipperary, Ireland
2013 *Politics of Play* conference exhibition*.* Bento Miso, Toronto, ON
2011 *Revisting Ephemera*. ArtLAB, University of Western Ontario, London, ON
2011 *Out of Practice*. ArtLAB, University of Western Ontario, London, ON
2011 *Sorting Daemons: Art, Surveillance Regimes and Social Control*. Curated by Jan Allen and Sarah E.K. Smith. Art Gallery of Mississauga, Mississauga, ON
2011 *Celebrate the Square.* Art Gallery of Mississauga, Mississauga, ON

Publications:

Kemp, Dave. “Reevaluating Value: New Forms of Value Resulting from Advances in Digital Technologies—Specifically as Related to Photographs”. *Revisting Ephemera*. Eds. Ahlia Moussa and Simon Bently. London: McIntosh Gallery (Blue Medium Press). 2011. 87-103. Print.

Conference Presentations:

2014 *Aesthetic Experience: An Interdisciplinary Conference at University of Ottawa.* “An Uncertain Experience: the Production and Viewing of Photographic Documentation from Performance Art Events”. Presenter. University of Ottawa, Ottawa, ON
2013 *Universities Art Association of Canada (UAAC), 2013 conference.* “Design of the Absurd: The One Pixel Camera Project”. Presenter. Banff Centre, Banff, AB
2013 *(Re)Activating Objects* conference, Western University, Department of Visual Art. “Body-Technologies”. Panel Moderator. London, ON
2011 *Revisiting Ephemera* conference, University of Western Ontario, Department of Visual Art. “Reevaluating Value: New Forms of Value Resulting from Advances in Digital Technologies—Specifically as Related to Photographs”. Presenter. London, ON
2010 *Sorting Daemons: Art, Surveillance Regimes and Social Control symposium* – Agnes Etherington Art Centre and The Surveillance Studies Centre at Queen’s University. “Data Collection: Every Card is a Database”. Presenter. Kingston, ON