

Design of the Absurd: the One Pixel Camera

by Dave Kemp

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

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 sees 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

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

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 1: 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).

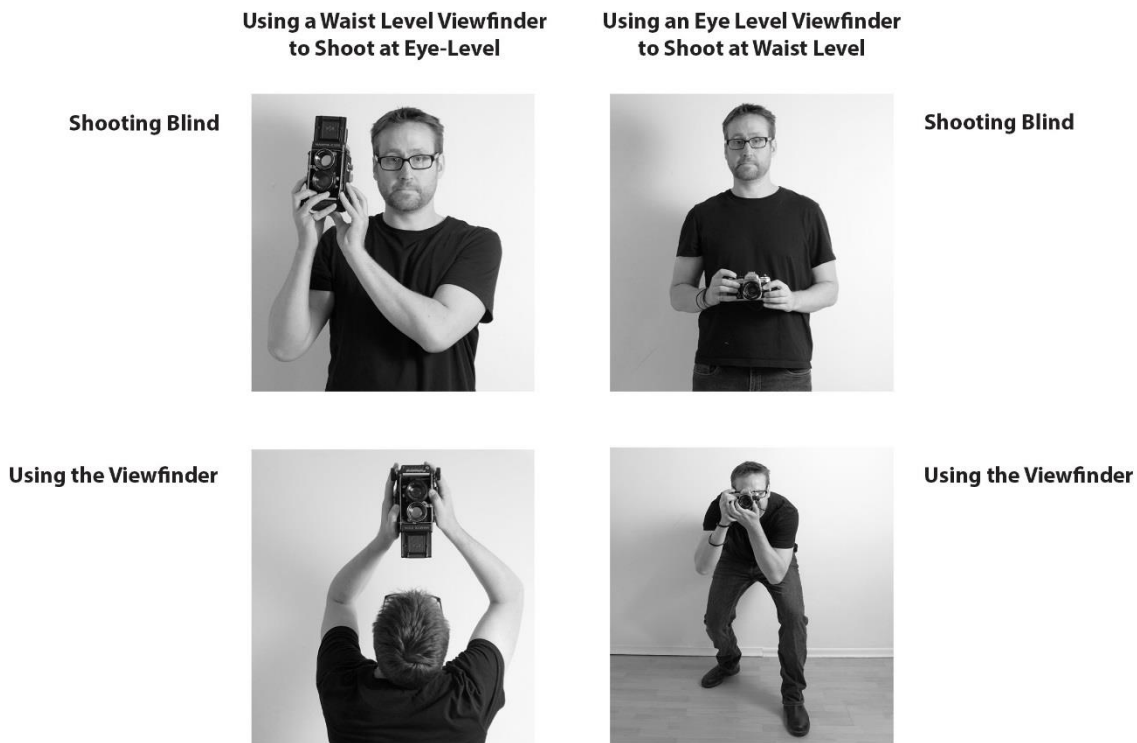


Figure 2: Circumventing the camera’s “program”

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 Phonedcams: 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 arrangement¹⁹. 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;

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.

nonetheless, almost all camera phone manufacturers include an audible click by default, and 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

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 system²³ 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

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

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 3: *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 4: 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 artwork³²; 2) The images produced by the

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 5: *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).

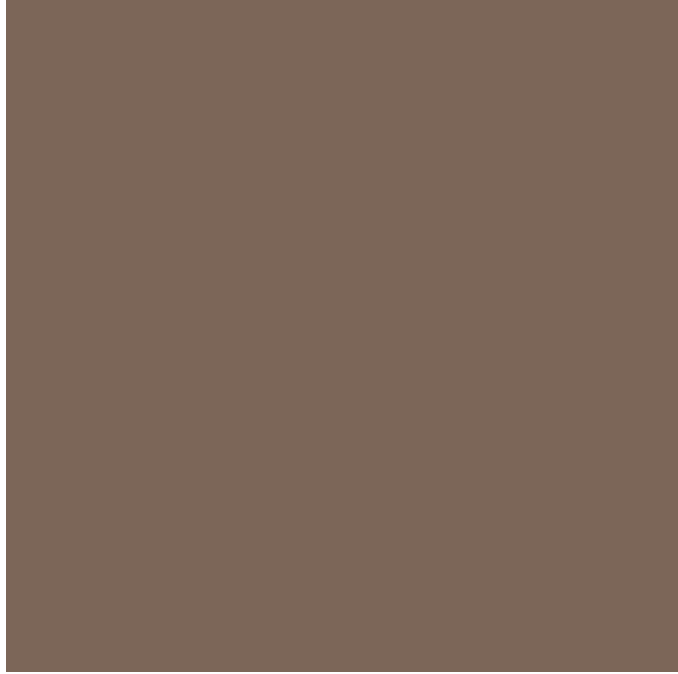


Figure 6: *Giselle Holding the Fish She Just Caught* (2013), one pixel image, archival pigment print 15" x 15".



Figure 7: *Niagara Falls* (2013), one pixel image, archival pigment print 15" x 15".

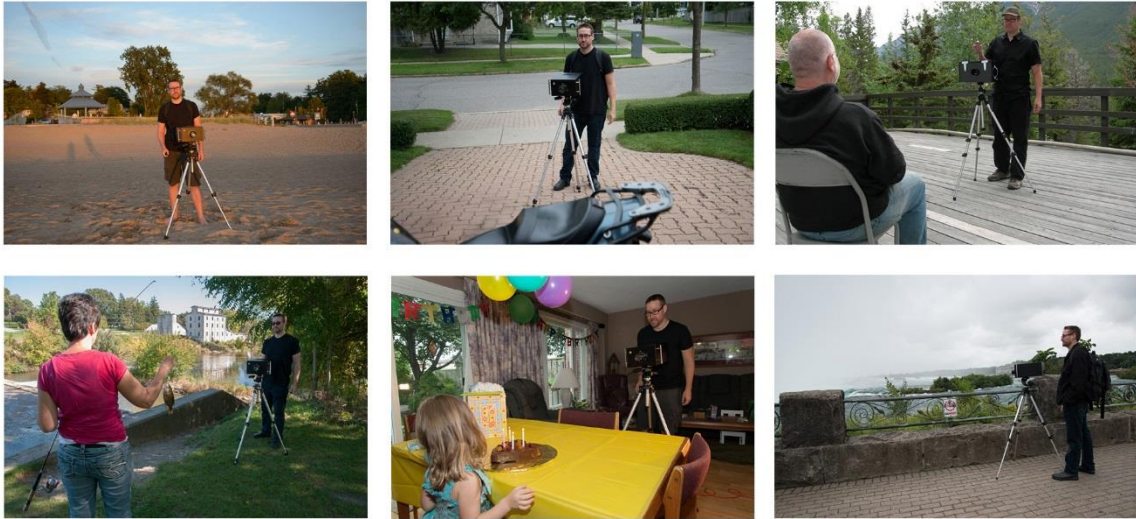


Figure 8: Performance documentation of *The One Pixel Camera* in use

I have found that it is possible to work with the camera if I accept its limitations³⁴ and attempt to turn them to my advantage³⁵. 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.

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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