Investigating Smartphones—there's a theory for that: Smartphones as an Assemblage and Apparatus

by

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A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

In partial fulfillment of the requirements of the degree of

MASTER OF ARTS

Department of Sociology

University of Manitoba

Winnipeg

Abstract

This thesis is an autoethnographic investigation of smartphones. Employing a theoretical framework that views smartphones as an apparatus, I explore smartphones, the connections they make to others and to digital technology, the way they are altering space and time, the micro-physics of power that they employ, and their ability to provide agency. Cycling between autoethnographic vignettes and theory, I explain rhizomatic assemblages that are apparatuses while advocating for the adoption of this conceptual framework when examining the social aspects of smartphones. Within this framework I conclude that these devices can be liberating and binding at the same time, and that, if we seek to better understand and engage in algorithmic language, we will be better equipped to take advantage of points of rupture to create lines of flight that allow us to deterritorialize our social world in ways that afford us the most agency.

Acknowledgements

I would like to thank my thesis advisor, Andrew Woolford, without whom this project would not have been completed. Beyond his guidance throughout the writing process, Professor Woolford's course on carceral spaces allowed me to see smartphones in a new light and has steered me to continue looking at the spatial aspects of smartphones. Far from a criminological study, Professor Woolford graciously agreed to supervise my inquiry into smartphones. This thesis is better because of his expertise and guidance.

I would also like to thank my thesis committee. Beyond his wealth of knowledge, Dale Spencer's guidance was instrumental in encouraging me to keep this project manageable. Professor Spencer's support by keeping an open door to me and providing academic guidance beyond this thesis will always be remembered. Adam Muller challenged the omissions and confusion in my work. His advice not only allowed others to follow my line of thought, it helped me to understand and articulate my thoughts.

I would like to thank Lance Roberts for his trust in me as a Teaching Assistant and Research Assistant. Professor Roberts always made me feel like more than an assistant. Our meetings to discuss matters of assistant positions always included an inquiry into my scholastic journey followed by sage advice. I cannot thank him enough for his help and guidance as I began to navigate the academic waters.

To the department staff that truly make the faculty and students look good. I am incredibly thankful for the continual help provided by Margaret Currie, Dianne Bulback, and Donna Alexiuk. I am amazed at your patience while providing the amount of assistance you did—often before I even knew I needed the assistance.

To my cohort—my friends—who made learning a pleasant social event. I have learned so much from each of you and I am grateful that we were able to create a collegial cohort that strove to lift each other up rather than cut each other down. I learned more because you helped me learn more.

Finally, I would like to thank my employer, Ceridian Canada, particularly my boss, Jeff Seaman, who always understood my academic dreams and allowed me to work virtually and with temporal flexibility, and who, when it was necessary, allowed me to let my work suffer.

Dedication

This thesis is dedicated to the memory of my mother, who championed social justice and advocated for those in need her entire life. She inspired my passion for social justice. It is my hope that by studying aspects of everyday life, including smartphones, I am able to contribute to an understanding that can lead us to a more just society.

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Introduction

Smartphones are a recent technological advancement. While Blackberry had a device that allowed its users to make phone calls and check email earlier, the smartphone, which combined all the functionality of a personal computer with Internet access, a mobile phone, and new applications, began with the iPhone. Released seven years ago on June 29, 2007, the iPhone initiated a wave of technological development that has continued to evolve. The adoption of these devices and the inclusion of their uses in everyday life has risen dramatically. This speed of adoption and inclusion has prevented scholars from investigating smartphones to a level that matches the ubiquity of smartphones. Existing theoretical frameworks of technology appear ill equipped to make sense of the swift expansion and evolution of smartphones. Smartphones are an evolved version of technology. As such, there is a need to advance sociological theories of technology to better comprehend the social impact of the smartphone.

For perspective, there were more than one billion smartphones in the world in 2012 (infographic, 2012). Those numbers grew to more than two billion mobile smartphone subscriptions in 2013 (mobiThinking, 2013). Astonishingly, there are more mobile devices on the planet than there are televisions (Digital_Utility_TEAM, 2012). In the United States, smartphones have a penetration of thirty-five percent (infographic, 2012) and it is estimated that eighty-one percent of cell phone users will have a smartphone by 2015 (Berger, 2013). In Canada, smartphones have a penetration of thirty-nine percent (infographic, 2012), with fourty-one percent of English speaking adult Canadians and twenty-six percent of French speaking adult Canadians owning a smartphone (Information and Communications Technology Council, 2013). Smartphones are not only becoming pervasive in their market share, as the previous

statistics indicate, but they are becoming ubiquitous in their use. Eighty-four percent of smartphone users use their devices for Internet browsing, seventy-six percent for emailing, fifty-five percent for navigation of physical space (Tatango, 2011) and seventy-three percent use their smartphones to search for information (Infographic_Labs, 2010). Globally, mobile broadband subscriptions have grown forty percent between 2010 and 2013. The continent with the largest growth rate is underdeveloped Africa (mobiThinking, 2013). These statistics illustrate the growth of smartphones and their inclusion in people's everyday life. The statistics also indicate that this growth is not limited to developed countries like Canada and the United States. Indeed, key areas of future growth are likely to be in the increasingly populated yet underdeveloped regions of the globe.

With the increasing adoption and global expansion of smartphones it is necessary to re-evaluate our theoretical approaches to technology to grapple with the wide-ranging social effects of the smartphone. Employing the framework of the apparatus, a governing form of a rhizomatic assemblage (Deleuze & Guattari, 1987), this thesis makes meaning (Spry, 2001) of the smartphone through an autoethnographic engagement with the device. In this manner, I promote assemblage theory as an appropriate framework for understanding smartphones.

The first chapter offers a review of two literatures. First, the chapter considers literature related to smartphones, digital code, and earlier technologies, including the Internet, computers, and mobile phones. The second half of the chapter uses Andrew Feenberg's (1999) two-level theory to organize a review of earlier philosophies of technology. Incorporating concepts from scholars such as Heidegger, de Certeau, Habermas, and Latour, Feenberg's model offers a vehicle to succinctly explore earlier theoretical approaches to technology. However, Feenberg's own theoretical contribution to this discussion focuses on the Internet and to this extend fails to

provide an adequate framework to understand smartphones. I therefore use Feenberg more to summarize the theoretical field rather than to give priority to his particular approach to theorizing technology.

The second chapter describes the social apparatus, a theoretical framework most appropriate for understanding smartphones. The apparatus is a type of rhizomatic assemblage that governs social behaviour. A rhizomatic assemblage is a non-arborescent structure that contains heterogeneous elements that interact reciprocally with each other. While maintaining their individual properties, the elements of an assemblage contribute to a non-totalized entity that is greater than the sum of its parts. The theoretical context of a rhizome, an assemblage, and an apparatus was laid out by Deleuze and Guattari (1987). Agamben (2009) provided additional insight into the apparatus, particularly its subjectifying aspects. In this chapter, I focus on the theoretical contributions made by these scholars.

The third chapter describes autoethnography and my use of autoethnographic vignettes. A method of research and writing, autoethnography analyzes and describes a personal experience (Ellis, Adams, & Bochnar, 2011). As personal meaning is made, autoethnography must explore the self as other (Spry, 2001) and requires the use of the sociological imagination to connect the personal to the social and cultural (Kidd & Finalyson, 2009). There is also a dialectical relationship between autoethnography and theory (Kaufmann, 2005). Vickers (2002) suggests cycling between the two, which I adopt as practice throughout this thesis. This chapter also includes a comprehensive list of criteria of drawn from the literature.

The fourth chapter discusses the smartphone and its social implications. Based on my autoethnographic investigation, and drawing from earlier academic investigations that consider smartphones, digital code, and earlier technologies (*i.e.*, the Internet, computers, and mobile

phones), as well as a framework of the social apparatus I discuss some of the social implications of smartphones. Woven into this discussion are autoethnographic vignettes. Using Deleuze and Guattari's (1987) concepts of curves of visibility, curves of enunciation, lines of subjectification, and lines of flight, I am able to consider the loss of body (Nguyen & Alexander, 1996), the loss of the local (Lajoie, 1996), algorithmically produced social worlds (Burrows & Beer, 2013), loss of intimacy (Turkle, 2011), the compression of space and time (Agger, 2011), the subjectifying aspects of smartphones, and how smartphones can be sites of resistance and tools of agency.

Smartphones are more than a mobile phone, computer, and point of Internet access. Connecting people and technologies with fewer constraints of time and space, smartphones are without question an advanced technology. Shrinking distance and compressing time with their mobility, functionality, and connectivity, smartphones are a technology that requires a new way of thinking about technology and the social landscape. By exploring a rhizomatic framework, this thesis promotes a theoretical framework that is useful for further academic studies on the assemblage we know as smartphones. By undertaking an initial autoethnographic investigation this thesis uncovers meaning that goes beyond the personal and expands to other social actors.

Literature Review

Despite its ubiquity, the smartphone is a relatively new technological device. As such, it has not undergone extensive academic research, particularly within the social sciences. In addition to being under-examined, the smartphone is a rapidly evolving technology. This creates further challenges to compiling a relevant review of literature. Scholarship on what was pertinent five years ago may not reflect how social actors are using smartphones today. In an effort to overcome these challenges and to ensure that this thesis can remain relevant as smartphones develop, I will consider the smartphone along four trajectories that remain constant throughout the continuing iterations of such devices: computing and Internet capabilities; mobility in space and time; algorithmically produced social worlds; and the smartphone as technology.

Computing and Internet Capabilities

Hyperreal, Accelerated Reality

The instruments of technology, the devices, have evolved. Paul Virilio (2000) traces how the impact of technology has evolved into an "acceleration of reality" (p. 3). This acceleration crescendos with the Internet and personal computers, with all of their gadgets (e.g. webcams) that erode the importance of public space, the city, and the geophysical, and bolster an interactive image that is ready at all times. The Internet and computer have maximized the acceleration of time to the point that the continuum of time (past, present, and future) is less important than the (image of the) event. With this, as Virilio explains, "the material volume loses its geometrical value as an 'effective presence' and yields to an audiovisual volume whose self-evident 'tele-presence' easily wins out over the nature of the facts' (p. 118). In this way, as the audiovisual

replaces materiality, we might say that the Internet and computers have produced another level of simulacrum and creates a hyperreality.

Jean Baudrillard (1994) explains that simulations and their creations, simulacra, no longer have a concrete or substantial referent. Simulations have become a Hyperreal: "the generation by models of a real without origin or reality" (p. 1). We might understand this by considering drawings of buildings and architecture. Where once artists may have drawn sketches of rooms and buildings, today architects draw schematics and build models to scale of buildings that they envision being built. In the past, images were a representation of something in the concrete. Today the concrete becomes a representation of the imagined. These concrete representations, the hyperreal, Baudrillard explains, often cast an illusion of image, simulation, or not real. This is done in an elaborate dance to continue the illusion of truth in reality. The hyperreal is presented as imaginary so that we might believe that the rest is real.

The image, too, can be a hyperreal. As Beaudrillard explains, the image goes through five successive phases in which the image is a:

1. Reflection of a profound reality;
2. Façade and modification of a profound reality;
3. Disguise for the absence of a profound reality;
4. Lack of relation to any reality; and
5. Pure simulacrum.

When we consider Virilio's accelerated reality, in which there is an erosion of the public space sacrificed for an interactive image of an event, with an understanding of Baudrillard's hyperreality, we can understand that the smartphone provides its users with access to hyperreality. No longer must users visit Disneyworld to believe that the rest of the world is real.

Smartphones allow users to snap an image or video of the event, edit the image with Photoshop, and make the image interactive by posting it to a social media site—immediately and from whichever location in which they find themselves. Expanding upon both Virilio and Baudrillard, we might say that smartphones allow for an accelerated hyperreality.

Presence, Body, and the Local

Katie Argyle and Rob Shields (1996) suggest that technology brings about presence in that it makes the distant present and the foreign tangible. Screen work also allows users to develop a sense of others' bodies. Dan Thu Nguyen and Jon Alexander (1996), however, argue that there is a loss of one's own body that occurs through screen work. Nguyen and Alexander explain that as we delve into flows of data,

> Cyberspacetime promises us liberation from constraints of space, time and materiality. However, without the experience of our bodies, our thoughts, our ideas, our ethics and polities must all suffer. We know ourselves and our world mainly because we live in and move in the world through our bodies. (p. 117)

The loss of bodily experience results in a shift from learning and acquiring knowledge to a technical ability to gather information. As we become information gatherers, we lose an understanding of the data before us. Disconnected from the data before us and with a loss of bodily experience, we find ourselves unable to comprehend and our bodies unable to react—we lose agency, action, and an ethical consciousness.

Mark Lajoie (1996) offers further insight into this loss of body while explaining that there is also a loss of the local. Lajoie argues that the danger of mediated communications, with a focus on Internet mediated communications, is that they replace personal, face-to-face interactions rather than complementing them. In doing so, citizens become atomized and unable to contribute to a collective or public. Furthermore, according to Lajoie, the use of technology

persists beyond the solution of the problem it was designed to address. In cyberspace, desires can be placed onto virtual objects (which can include other actors). These objects do not possess life beyond the user. In the "pure" space of the Internet, the material becomes abject because its concreteness is less "pure," there are flaws to materiality in that the material is less than archetypical, and because materiality cannot be incorporated into this virtual reality. As such, over-engagement with cyberspace erodes the local and the body. Lajoie ultimately concludes that there is a correlation between the orderliness that occurs on the computer screen and the lack of order within our communities.

Sherry Turkle (1984; 1995; 2008) has been engaged in academic scholarship on computer technologies for more than thirty years. Her recent book, *Alone Together* (2011), refreshes interactionist theories as it examines people's relationships with technology, and with each other through technology. Turkle concludes that: while alone with technology, we feel connected; and, though increasingly connected to each other through technology, we feel more alone. Turkle elucidates on how people have become drawn to connection without the demands of intimacy. The connection that people seek is a technological communion that, as its use becomes more pervasive, renegotiates the boundaries between intimacy and solitude. For Turkle, technological communion becomes the performance of identity, which can create disorientation. Turkle explains that the virtuality of online substitutes for disappointments offline. As such, the virtual online experience becomes better than nothing, however,

> ...better than nothing can become better than something—or better than anything. Not surprisingly, people report feeling let down when they move from the virtual to the real world. It is not uncommon to see people fidget with smartphones, looking for virtual places where they might once again be more. (p. 12)

Much of the scholarship on the Internet is contradictory. Some critics see the Internet as offering increased agency, an ability to transcend space and time, and increased awareness of distant others. Other scholarship views the Internet through a lens of technological determinism, concluding that it erodes the body and community, and reduces agency and knowledge. However, scholars should not over-state the promise or scandal of the Internet. Rather, scholars need to analyze the emancipatory and oppressive functions of the Internet while considering the social actor employing the technology.

Feminist scholarship has also wrestled with this dichotomous view of technology, discussing technology's ability to liberate or oppress women. Responding to both emancipatory and oppressive views within feminist scholarship, Wajcman (2004) concludes that "The problem with both positions is that they assign too much agency to new technology, and not enough to feminist politics" (pp. 127-128). This point has merit more broadly than feminist politics. Scholars would do well not to assign too much agency to technology, while not giving enough credit to the individuals using the technology.

Mobility in Space and Time

Smartphones also add mobility of use to their functionality. Gitte Stald (2008) examines the mobility of cellular phones. Stald argues that the mobile has symbolic value through the physical aspects of the device and the technological possibilities it provides. Stald contends that the mobile is a glue holding together various social networks as the device becomes an intermediary of emotions and meanings. Stald also articulates that mobility allows for immediate social coordination. Perhaps most useful because it can be extended to smartphones more directly, is the spatial freedom mobility offers. Stald explains that "The mobile—combined in

some cases with the laptop—is a personal medium which liberates the user from the constraints of physical proximity and spatial immobility" (p. 147). According to Ben Agger (2011) the liberation from spatial immobility creates a new evolution of time. Agger explains that iTime has five key features. The first of these features is that labour has predominantly become a diffusion of ideas through a written landscape. These written forms include emails, text messages, blogs, and memos. The second feature of iTime is an erosion of boundaries between the productive sphere and the reproductive sphere. Since labour time is essentially time in front of a screen, this time bleeds into personal time. The boundaries between productive time and personal time have become so blurred that there may be no distinction between people's professional and personal transactions and interactions. The third feature of iTime is that any distinction between paid and unpaid labour is erased. Labour is bound neither by the physical space of the office nor by the time of a traditional workday. Labour can be performed anywhere and at anytime, and the expectation is that the labourer's availability and accessibility coincide. The fourth feature of iTime is that this new form of labour is self-reproducing. The written diffusions, mentioned in the first feature of iTime, precipitate further written diffusions—emails must be replied to, texts read and responded to, etc. These responses, of course prompt further responses, so that iTime creates infinite labour. The fifth feature of iTime is that it permeates all aspects of life. This, in turn, ultimately eradicates downtime (p. 121).

Agger points out that it is not insignificant that people are always available in iTime. The erosion of boundaries between professional and personal life, because of almost unlimited accessibility and availability, is possible because of mobile information and communication technologies. In the iTime landscape, Agger tells us, the work station of choice is the smartphone (p. 123). Smartphones, then, make time portable and elastic (p. 124). The portability of the

smartphone allows for the erosion of spacial boundaries. The elasticity of the smartphone allows for the erosion of temporal boundaries. This elasticity is not only due to an erosion of the boundary between work and home, but, as Agger explains, it compresses time and adds pressure to the individual with too much to do and not enough time to do it (p. 124).

Algorithmically Produced Social Worlds

Roger Burrows and David Beer (2013) offer a significant contribution to the discussion of digital spatiality in the age of the smartphone. Burrows and Beer argue that questions regarding risk, trust, surveillance, and mobility are better understood when considering digital mediation of agency and space (both virtual and physical). The authors offer a nomenclature drawn from urban informatics. This discussion leads Burrows and Beer to articulate that digital technologies are becoming an instantiation instead of an object. New digital technologies have the ability to gather information, track locations and operations, and respond to human movement and digital practice. New digital technologies thus have become "material instantiations of an immaterial system" (p. 71). The analytic focus on these types of devices leads to sociological debates "about future cultures of *inter alia:* surveillance; privacy; visibility; anticipation; risk; mobility and even, perhaps, the category of the post-human" (p. 71). The authors also discuss the evolution to a transducted space. This transducted space is a space that includes the spatial extension of humans and technological agency. The technological agency, the authors explain, "Is about the productive power of technology to make things happen via reiterative, transformative or recursive practices" (p. 73). These technological practices create a technological consciousness. Because the practices are implemented via unknown digital code, they also create a technological unconsciousness within people, who are unaware of the technical

reasoning and processes for these practices. Burrows and Beer challenge sociologists to consider an algorithmically produced social world fashioned by digital technology, advocating for a sociological understanding of the construction and operation of code and the social effects this has.

Smartphones are a hybridity of various technologies. Smartphones have computing and internet capabilities, they are mobile in space and time, and they are able to create social worlds through the use of digital code and calculations. The amalgamation of these, and of all the functionalities of a smartphone, make the smartphone an evolved form of technology that requires a different philosophical framework.

The Smartphone as Technology

The literature concerning the philosophy of (modern) technology is fairly broad and ranges in its views. Some of the scholarship views technology as neutral—a means readily available to serve any end—while other scholarship views technology as value-laden. Some scholarship views technology as autonomous, while some view technology as humanly controlled. Other divisions in the philosophy of technology occur as the scholarship approaches technology either ideologically or materialistically. The scholarship on technology varies along each of these major continua. The issue that arises as scholarship on the philosophy of technology limits its view to one extreme of these continua is that, as it does so, it employs a static approach to explain a dynamic social device.

Andrew Feenberg (1999) provides a dynamic social theory for technology that considers what technology does and what technology means by combining philosophical perspective with social scientific interpretation. In what follows, I discuss Feenberg's theory on technology.

Developed considering recent technological advances, such as computers and the Internet, Feenberg's theory is closer to smartphones than many other philosophies of technology. Feenberg also brings in components of previous philosophies of technology. This allows his theory to be critical of the deficiencies in these theories without being completely dismissive. Despite the advantages of Feenberg's theory, however, the technology it describes is not a smartphone technology. Feenberg's inclusion of various components also serves this thesis well in that it allows for a brief introduction of earlier theories. This allows me to use Feenberg's theory as an organizational vehicle to review other philosophies of technology. After briefly discussing Feenberg's theory, I will suggest the need for a more fluid theoretical framework that can capture the forming and deforming flows of smartphones.

By including an historical understanding of technology, Feenberg defines "the essence of technology as the *systematic* locus for the variables that actually diversify its historical realizations" (p. 201). This is a departure from essentialist views on technology. Instead of focusing on shared features of technology, Feenberg argues that it is the logic behind various stages of development that make the essence of technology. Feenberg's theory recognizes the dynamic nature of technology. Feenberg acknowledges that technology is neutral, value-laden, autonomous, controlled by humans, effecting the material, affecting the ideal, and any combination of these all at once. While Feenberg is critical of the limitations other theories, he is able to include aspects of these theories to aid in illustrating the many facets of technologies.

Feenberg proposes a two level theory. The first level offers an account of philosophical interpretation of technology and considers both the technical object and those using the device. The second level considers the integration of the technical with the social world, the natural world, and other technologies that support the functioning of the technological device. This level

considers the realization of technology acting within a materiality. Like the first level, the second level of Feenberg's theory includes the effect on the object, the technology itself, and the social actors that use the technology.

Primary Instrumentalization: Functionalization

The first level, the "Primary Instrumentalization: Functionalization," is comprised of four moments at which abstract notions of the technical object are concretized. The first of these moments is "decontextualization." Technological objects are comprised of (a) refashioned natural object(s). In order for this refashioning to occur, natural objects must be separated from their original context, so that the utility of an aspect of the natural object might be understood. Nature, decontextualized, "is fragmented into bits and pieces that appear as technically useful after being abstracted from all specific contexts" (p. 203). To clarify the moment of decontextualization let us consider a bottle of water. The lake or spring that is its source is imagined as a commodity. The water is harvested, purified, bottled, and shipped. This leads people to experience water for its utility, its ability to quench thirst, instead of the myriad connections the lake or spring has to its environment and the species within that environment.

The second moment of the first level is "reductionism." Within this moment, the decontextualized objects are simplified to their qualities that are of primary importance to a technological agenda. As these primary qualities are quantified and formalized, the objects are stripped of their technically useless secondary qualities. Our bottle of water, then, is put through a five stage purification process, giving it a heightened level of purity, while the habitat the water provided and the refreshing swim it afforded are lost.

Both decontextualization and reductionism draw on Heidegger's (2003) work on technology. Heidegger claims that the essence of technology was the reduction of the natural world to being seen as a resource, ultimately culminating in the inclusion of humans in this reduction. This occurs through a process of revelation. Heidegger explains that "Everything depends on our manipulating technology in the proper manner as a means" (p. 253) as he traces instrumentality as means back to a fourfold causality comprised of materiality, form, the determined end, and that which causes the effect. These four causes come together to reveal that which is concealed. According to Heidegger, however, modern technology reveals in such a manner that it demands that the unconcealed natural elements be stored, always ready for potential use. This occurs in an endless cycle that unlocks the concealed, transforms that which is unlocked, stores the transformed, distributes the transformed, and unlocks the (concealed) distributed. Heidegger calls this process a standing-reserve, in which "everything is ordered to stand by, to be immediately on hand, indeed to stand there just so that it may be on call for a further ordering" (pp. 256-257). People's role in this process is to provide an order to this standing reserve. This ordering Heidegger calls enframing, or *Gestell*.

Enframing reveals in juxtaposition to *poiēsis*. While *poiēsis* reveals poetically through craft, fine art, and an art of the mind, enframing is only able to reveal the work of modern technology as a standing-reserve. The danger that lies inherent in enframing as a revealing, Heidegger explains, is that, as humans come to know the unconcealed solely as a standing-reserve instead of as an object, we come to the point where we must take ourselves as a standing-reserve. Humans become so deferential to enframing as a claim, that we lose our awareness that something as an essence is being revealed to us. We lose our ability to hear how we exist and, as such, we cannot encounter only ourselves. Enframing conceals the poetic revealed and the act of

revealing itself. We might simplify this thought by paraphrasing that, by focusing on ordering nature as a means, we fail to witness all of the ends nature can be. The Truth is therefore lost. As Heidegger explains, "The rule of enframing threatens man [sic] with the possibility that it could be denied to him [sic] to enter into a more original revealing and hence explain the call of a more primal truth" (p. 261). Technology, then, threatens revealing with the possibility that all revelations must occur through the unconcealment of the standing-reserve. To clarify, for Heidegger, the essence of technology is a way of approaching the world that views nature as a resource that can be transformed into something that is increasingly available, but the process of seeing everything as a standing-reserve leads people to view themselves, or at least others, as a standing-reserve. The essence of technology, then, is a way of thinking that reduces everything, including ourselves, into a resource, or a mean.

It is Heidegger's aspect of enframing that Feenberg draws upon to explain the first two moments at the functionalization level. Enframing, by itself, cannot capture all elements of technology within society. As an explanation for aspects of the philosophy of technology, which will be merged with a social scientific perspective of the integration of technology into the social world, enframing is transformed into a key component to understanding technology.

The third moment of the Primary Instrumentalization is "autonomization," which removes many of the effects of a subject's technical action, or at least much of the scope of the effect. Feenberg explains this moment as an interruption of the feedback between the subject and the object. We can understand what Feenberg is driving at by reviewing Borgmann's (2003) explanation of his device paradigm. In his assessment of technology, Borgman clarifies a difference between "things" and "devices." Simply put, things and devices provide an end, but devices hide the means, while things allow the user to experience and be aware of the means.

Feenberg expands on this notion, that devices provide an end (product) while keeping the means, process, or mechanization of this product hidden, by expressing that, in using modern technology, "the technical subject has a big impact on the world, but the world has only a very small return impact on the subject" (p. 204). It is Feenberg's view, then, that technology can simplify the use of natural resources to the point where those using technology can become removed from the consequences of this use. The ease of use results in extending our use of the technology, while the lack of awareness to the consequences of this use prevents us from knowing when to stop using the technology.

In developing the final moment of the Functionalization level, "Positioning," Feenberg builds upon Habermas' (1970) media theory by adding technology as another medium. For Habermas, money was used to facilitate exchange, which in turn increased utility. Similarly, power was used to improve directives, which in turn increased effectiveness. Feenberg argues that technology is an additional steering medium that improves applications, which in turn increases productivity. For technology, as medium, to be successful it must demand rules of action. Compliance of these rules is backed by the threat of "natural consequences." There is an inherent risk attached to not following the rules that technology employs. Feenberg uses the rules of driving a car to illustrate his point. If one were to drive on the wrong side of the road, there could be devastating consequences. With the explanation of this expanded media theory, we are able to better understand that "Positioning," the final moment of the Functionalization level, is obtained as subjects control objects by taking advantage of the natural law of particular objects. As Feenberg explains, "By positioning itself strategically with respect to objects, the subject turns their inherent properties to account" (p. 204).

Throughout Feenberg's first-level, he expands upon and incorporates aspects of theories that seek to explain the functioning of technologies. To do this he includes idealist aspects and draws these into a materialist framework. One of Feenberg's biggest criticisms of the essentialist and idealist thoughts on technology is that they fail to address the fact that technology does not occur solely on an ideal plane, but also in the concrete world. Feenberg's second level addresses these shortcomings by adding a second level to his theory.

Secondary Instrumentalization: Realization

While the primary level explains a basic technical relation, the secondary level addresses the fact that "technique must be *integrated* with the natural, technical, and social environments that support its functioning" (Feenberg, 1999, p. 205). The realization level follows the functionalization level in that there are four moments. The first two moments, "systematization" and "mediation," manipulate the objects of technology, while the final two moments, "vocation" and "initiative," explain the subjects of technology.

Feenberg explains systematization as the process of combining objects and re-implanting them in the natural environment to create a network, in a Latourian (1992) actor-network system in which there is a circulation between the object and nature, subject and object, and micro and macro. Bruno Latour's actor-network theory seeks to merge the micro and the macro of sociology. Actor-network theory argues that there can be no face-to-face interactions without being framed in a larger social totality. Similarly, there is no macro by itself. There are micro interactions that combine to create a sum locality. Social science tends to polarize the micro and macro, treat the differences between the two as binary, and then negotiate between these differences. Latour explains this,

> It seems to me that ANT is simply a way of paying attention to these two dissatisfactions, not again to overcome them or to solve the problem, but to follow them elsewhere and to try to explore the very conditions that make these two opposite disappointments possible. By topicalizing the social sciences' own controversies ANT might have hit on one of the very phenomena of the social order: maybe the social possesses the bizarre property of not being of agency and structure at all, but rather of being a *circulating* entity. (p. 17)

Mediation is the process of supplying objects that have been made technical with ornamentation, stylization, and packaging to embed the object in a social context. This is a process in which we dress our technical devices up. This dressing up can occur as marketing, such as in store containers to catch the eye of potential users. This dressing up can also be done by the users, who style their devices to reflect an aspect of taste.

Vocation is the process that explains the "reverse impact of tools on their users" (Feenberg, 1999, p. 206), one in which the sequence and progression of the use of the technical object add up to a craft and a way of life. We might understand this by visiting Marcuse's (1964) explanation regarding the change of consciousness in the labourer. The change in which the labourer, alienated from her labour, sees her identity in the machine she operates and the company for which she works.

For the critical theorists of the Frankfurt school, a stumbling block to the freedom of humans was a restricted consciousness, which was the result of an inability to form critical thought. As Appelrouth and Edles (2011) explain, "Reason itself had become corrupted, leaving individuals unable to negate or develop a critique of 'objective truths,' which would alone enable us to resist the domination of the status quo" (p. 84). This theme is certainly embraced in Herbert Marcuse's (1964) *One-Dimensional Man*, in which he develops and explains the concept of technological rationality as an agent in changing the consciousness of the labourer. According to Marcuse, the modern labourer becomes integrated in the material process of production by

becoming integrated in the actual plant. In the industrial and technological work world, the labourer sees himself in the machine he operates and the company for which he works (Marcuse, 1964, pp. 29-30). To elucidate upon this notion, it is as though the labourer, who is alienated from the product of her labour, compensates for this alienation by integrating herself in the means of production which controls her.

Finally, initiative draws upon de Certeau's (1984) strategies and tactics to explain the various forms of initiative that subjects under the technical and strategic control of devices employ to change the predesigned usages of the devices to meet the users' alternative objectives. According to de Certeau, strategies are effects and manipulations that occur when the subjects of a power relationship are isolated in a space claimed as a place belonging to the powerful (pp. 35-36). By having a proper place, the strategies of the powerful gain three important advantages. The first advantage is that a place of one's own allows for independence from varying situations that can occur over time. By having a place of one's own, the powerful can capitalize and expand upon favourable positions. By laying claim to an autonomous space, what de Certeau calls "the proper," those laying claim to the place triumph over time (p. 36). We might understand this advantage by simplifying it to the mantra "My house, my rules." A second advantage is gained as owners of the proper are able to witness, measure, and control foreign entities through panoptic and quantifying practices. These practices convert the foreign entities, which include the Other, into objects. As de Certeau states, "To be able to see (far into the distance) is also to be able to predict, to run ahead of time by reading a space" (p. 36). The second advantage, then, is that "Big Brother is watching." A third advantage is the power gained through transforming uncertainties into something interpretable. It is a power gained by running ahead of time (p. 36). Once ahead of time, the powerful are able to define their own space in a capacity that controls

and dictates the behaviour of the Other. In doing so, the powerful define their space in the future and, thus, maintain the proper as their own. Simply put, the third advantage is that "Big Brother" can use the information he gleans while watching to change the rules of his house in his favour.

In contrast to a strategy, tactics are calculated actions for those without the autonomy of a center of operation (p. 37). Tactics, the actions of those without a proper, are, according to de Certeau, an action of trickery in which the weak seize upon circumstantial cracks in strategic locations (pp. 37-39). Tactics, then, are the calculated actions that those away from their proper take in response to, and along the guidelines of, strategic forces. Tactics stand in juxtaposition to strategies. Strategies are the actions of the powerful to subordinate the weak, who use tactics to overcome the subordination. Tactics overcome this subordination with, "An intellectual creativity as persistent as it is subtle, tireless, ready for every opportunity, scattered over the terrain of the dominant order and foreign to the rules laid down and imposed by a rationality founded on established rights and property" (p. 38).

Feenberg developed his theory considering computers and early forms of Internet technologies, such as France's minitel. To his credit, Feenberg could see how these were becoming jointly constituted with and alongside humans. Synthesizing Latour into his two-level theory, Feenberg captures network hybridity. This network hybridity may reflect spatial elements of computers and the Internet, and temporal elements of mobile phones, however, it does not accounts for the spatial and temporal combination and permutation that occurs as a result of smartphone's bringing all of these functionalities together into one easy to use device that has become ubiquitous. As such, Feenberg's theory does not capture the fluidity of smartphones. Feenberg's theory is appropriate for computers, the Internet, and mobile phones. While smartphones include aspects and functionalities of these technologies, the combination of these

technologies, along with the hyper-connectivity of the devices, their users, and their developers has created a permutation or evolved technology that requires a different theoretical perspective. Moreover, Feenberg's theory is ultimately biunivocal, creating a dichotomy and hierarchy that does not accurately capture the ebb and flow of smartphones. This ebb and flow is less a network and more of an assemblage. Feenberg's framework has, however, been beneficial as an organizational vehicle to consider a number of theories of technology in a comprehensible manner and to summarize these in an accessible arrangement.

Theoretical Overview

To understand the smartphone, an appropriate theoretical framework is needed. Much of the scholarship on the smartphone, its predecessors, and technology in general has approached the topic dualistically. The binary logic of this approach has not always been intended. It has often stemmed from an epistemological foundation that seeks to identify technology as either-or. At times this has created academic conclusions that champion smartphones and other technology as either liberating or binding, good or bad. This was true for Internet scholarship, which was, as Rob Shields explains, "Over-hyped and over-sensationalized – whether for its promise or scandal" (1996, p. 1), and this dichotomous view continues with smartphones. In addition to this binary approach, smartphones represent a new evolution of technology. Just as modern technologies differ from previous technologies, the smartphone differs from modern technologies. For example, a modern technology like running water is drastically different from a hand fashioned chalice. Similarly, a smartphone is drastically different from mobile phones or laptop computers that were around prior to the invention of smartphones.

To overcome a dichotomous logic, I employ a Deleuzian framework for understanding the smartphone as an apparatus. In *A Thousand Plateaus* (1987), Gilles Deleuze and Félix Guattari challenge dualistic thought, by articulating the differences between arborescent and rhizomatic structures. The theoretical framework I am employing is one which has been expressed and explained by Gilles Deleuze and Giorgio Agamben and employed by Michel Foucault (1995) in his analysis of discipline as an apparatus. To explain the intention of this thesis, I borrow from Daniel O'Conner (2002) who argues that his work "follow[s] a Foucaultian trajectory in the analysis of power-knowledge relations and the associations that they govern" (p. 5). The nature of the framework I employ draws heavily on the work of Deleuze regarding

apparatuses, assemblages, and the rhizome. I also draw on Agamben's explanation of subjectification to better understand the Deleuzian lines that make up the apparatus. I then use this framework to follow a "Foucaultian trajectory" and begin to unravel some of the lines of flight that make up the apparatus we call the smartphone.

Giorgio Agamben (2009) explains that the term apparatus "is a decisive technical term in the strategy of Foucault's thought" (p. 1). Agamben summarizes that the apparatus is heterogeneous, has a strategic function, and is located in a power relation, particularly at the intersection of power and knowledge. More clearly, for Agamben, an apparatus is the network that appears between elements. Gilles Deleuze (1992) offers further insight into apparatuses, explaining that they consist of four dimensions.

The first dimension Deleuze describes is comprised of curves of visibility. Apparatuses distribute the visible and invisible. Within the curves of visibility, that which is known and that which is not known through sight are omnipotently determined by the apparatus. The second dimension of an apparatus is its curves of enunciation. For Deleuze, the apparatus gains an authority by articulating or naming. This authority is defined by the point of view of the visible and the point of view of that which can be named. In this way, the apparatus not only determines what one sees, but gives voice to this through the curve of enunciation. The third dimension of the apparatus fills the space between the visible and the enunciated. This dimension, which Deleuze calls lines of force, is invisible and unsayable. Passing through every area of the apparatus, lines of force are closely tied to, yet separable from, the curves of visibility and enunciation. The final dimension of the apparatus involves lines of subjectification. Deleuze describes this as "A process of individuation which bears on groups and on people, and is subtracted from the power relations which are established as constituting forms of knowledge

[*savoirs*]: a sort of surplus-value" (p. 161). This thesis examines the smartphone as an apparatus. All apparatuses are assemblages, and the smartphone is a rhizomatic assemblage. To understand the smartphone within the theoretical framework I am employing, one must first define the concepts assemblage and rhizome, and then explain the distinction between assemblage and apparatus.

Assemblage

An assemblage[1] is a mixture of heterogeneous components that fit roughly together. This is to say that the components are not fused together seamlessly, but exist together within the same territory. Translated from the French agencement, meaning arrangement, fitting, or putting together (Wise, 2005, p. 77), assemblage is derived from the root assemble. An assemblage, then, is that which is being put together with various components. There are two key points to draw attention to within the sentence "that which is being put together." The first of these points is that an assemblage is not a fixed set of components assembled into a preconceived device. An assemblage is not the combination of microchips, wires, glass screen, and speakers that make up the physicality of the smartphone. Nor is an assemblage some random collection of things. It is an entirety that is composed of a combination of multiplicities that claim a territory and express identity. To be clear, however, there is a distinction between an assemblage and a totality. A totality is composed of components that are fused together, becoming reducible to the whole that it has formed. An assemblage, which is more than the sum of its parts, is made whole through the

[1] Manuel DeLanda (2011, see also DeLanda 2006) expands upon Deleuze and Guattari's assemblage theory. While his developments on the theory are not considered within the framework of this thesis, I am indebted to his 2011 lecture *Assemblage Theory, Society, and Deleuze*, available for viewing on YouTube, for clarifying and helping to sort my thoughts and understandings of Deleuze and Guattari's theory.

interaction between components. Furthermore, the components, which are not defined by the whole, maintain their individual properties and can be detached from the assemblage. The second thing that we must realize is the verb tense in the description of an assemblage—it is being put together. An assemblage is not what was or what will be, but an assemblage is becoming. To expand upon each of these points, I will explain the two axes that capture the four valences that, according to Deleuze and Guattari (1987), "make and unmake assemblages: content–expression; and territoriality–deterritoriality" (p. 505).

The first axis, content–expression, is comprised of what an assemblage does and what an assemblage articulates. As Deleuze and Guattari explain, "The first division of every assemblage: it is simultaneously and inseparably a machinic assemblage and an assemblage of enunciation. In each case it is necessary to ascertain both what is said and what is done" (p. 504). Each assemblage contains material and expressive components. The expressive components, however, are not solely what is said, as expression can also occur through action. In this way, the material can be expressive and the expressive can materialize. There is interaction between this segmentation of this axis, that is to say that content and expression are not mutually exclusive aspects of the assemblage. There is reciprocity between the content and the expression. It is this interactive reciprocity that creates a sum that is greater than its parts. As mentioned earlier, the apparatus was an instrumental concept in Foucault's thoughts. Interactive reciprocity is similar to how Foucault (1995) explains that bodies are made docile through the composition of forces. Discipline is not just about making the individual efficient. It is also paramount that discipline make the individuals a part of an efficient "machine whose effect will be maximized by the concerted articulation of the elementary parts of which it is composed" (p. 164). Discipline, then, was interaction amongst components of an assemblage to maximize the machine and give the

assemblage properties of its own. We have seen that each assemblage is comprised of actions, a regime of signs, distinctions between content and expression, and symbioses between the pragmatic and the semiotic. Content, expression, and the interaction between them make up the first axis, which is a part of the territoriality of the territoriality–deterritoriality axis.

While content and expression help to explain territoriality, a critical component of an assemblage is deterritoriality. The territory of an assemblage is expanded through deterritorialization. This expansion occurs by opening the assemblage onto other assemblages, new territorities, abstract machines, or any combination of these. All forms of deterritorialization are becomings. Deterritorializations are not static. They are not what a territory once was, nor are they what the territory will be. Deterritorializations are what we no longer are and what we are becoming.

What an assemblage is, then, is a territory consisting of multiplicities that provide content and expression which act upon each other reciprocally. The territorialized assemblage also has lines of flight, which allows the assemblage to deterritorialize other assemblages, new territories, and abstract machines. It is important to note that deterritorialization reterritorializes both the newly opened territory and the old assemblage. Both territories become something new. To understand this "newness," one must understand Deleuze's argument to realign one's focus from the past towards the new. Apparatuses are defined in terms of two components, an aspect of newness and an aspect of creativity. Because an apparatus has these two components, it also has the ability to transform itself or be replaced by a future apparatus. This focus on the new, Deleuze makes clear, is not a focus on what society and the social actor are, but rather what apparatuses have us becoming:

> The new is the current. The current is not what we are but rather what we are becoming – that is the Other… In each apparatus [*dispositif*] it is necessary to

> distinguish what we are (what we are already no longer), and what we are in the process of becoming: *the historical part and the current part*. (p. 164)

To focus on the new, Deleuze explains that within each apparatus we must untangle the recent past and the near future. It is this untangling that Foucault (1978) undertook as he described the disciplines and micro-physics of power. In discussing the consequences that arise from a philosophy of social apparatuses, Deleuze also explains that there must be a rejection of universals. A critical aspect of this lies in understanding that the lines and curves he describes are ones of variation. These lines have no constant coordinates. It is paramount to add that lines of flight also vary, are dynamic, and lack contour. The variation that occurs in all lines and curves occurs because they are a part of a rhizomatic assemblage.

Rhizome

Deleuze and Guattari (1987) begin their discussion on assemblages by distinguishing between two structures and manners of organization: the arborescent and the rhizomatic. The arborescent, or tree like, is organized vertically and expands by branching off. Each intersection of the branches reflects the dualistic structure of the arborescent system. While these systems have a binary logic as their spiritual reality (p. 5), they are able to branch into more than two choices, but this is accomplished through "biunivocal relationships between successive circles" (p. 5), which still creates alterity: a dominant and other, or others. To describe another form of organization, Deleuze and Guattari turn also to nature and suggest the rhizome. The rhizome is a horizontal organization that "assumes diverse forms, from ramified surface extension in all directions to concretion into bulbs and tubers. When rats swarm over each other" (p. 7). Deleuze and Guattari explain that there are five characteristics of the rhizome: (1) heterogeneity; (2) connection; (3) multiplicity; (4) rupture; and (5) cartography versus decalcomania.

The first characteristic, heterogeneity, indicates that there must be various points and elements to the rhizome. These points must have an element of connection to ensure that "any point of a rhizome can be connected to anything other, and must be" (p. 7). The rhizome makes continual connections between establishments of power, forms of meaning, and all forms of social contexts. The characteristic of multiplicity suggests that the heterogeneous elements combine to create a substantive entity that has neither subject nor object. Instead the rhizome contains dimensions that, when increased, change the fundamental nature of the entity. As Deleuze and Guattari explain, it " is precisely this increase in dimensions of a multiplicity that necessarily changes the nature as it expands its connections. There are no points or positions in a rhizome, such as those found in a structure, tree, or root. There are only lines" (p. 8). The rhizomatic organization removes power from any one element as the elements within the entity remain heterogeneous and maintain their original properties. Homogeneity only begins to occur when the signifier begins a power takeover or when subjectification begins. The characteristic of rupture explains the resilience of a rhizome. The rhizome can be broken or ruptured at a specific location. The rhizome, however, is able to start up at one of its old lines, on new lines, or the point that is rupture can create lines of flight, which are part of the rhizome. The lines of flight expand to deterritorialize new territories and create new assemblages. The fifth characteristic is the juxtaposition between mapping and tracing. Deleuze and Guattari tell us that the rhizome is "a *map and not a tracing*" (p. 12). The difference between cartography and decalcomania, between mapping and tracing, is that the map constructs the unconscious, whereas tracing reproduces the unconscious. "[O]riented toward an experimentation in contact with the real," (p. 12) the map is a part of the rhizome. A tracing is a reflection of the rhizome. Since the rhizome is continually changing through the addition of dimensions, deterritorialization-reterritorialization,

and lines of flight, however, the tracing is less static. It is always a reflection of what the rhizome was instead of what it is becoming.

The rhizome, then, can connect any point to any other point, it consists of dimensions, and it is not static. As the dimensions of the rhizome increase, the rhizome metamorphasizes. The rhizome grows by extending through its middle by using its myriad connections to deterritorialize and its ruptures to create lines of flight. These forms of expansion must be mapped, that is to say created. They cannot be traced other than to reflect on what the rhizome once was. Ultimately,

> the rhizome is an acentered, nonhierarchical, nonsignifying system without a General and without an organizing memory or central automaton, defined solely by a circulation of states. What is at question in the rhizome is a relation to sexuality—but also to the animal, the vegetal, the world, politics, the book, things natural and artificial-that is totally different from the arborescent relation: *all manner of "becomings."* (p. 21, emphasis added)

The Rhizomatic Assemblage

A rhizomatic assemblage is a mixture of heterogeneous components that are fitting together roughly, while remaining connected to and interacting with all components. The connection and interaction, however, are not hierarchical. The components do not branch off of each other like a tree or a corporate structure, with an Other reporting into a dominant component. Instead, the components interact through a flat, acentralized structure in which the components maintain their individual properties while performing functions (*i.e.*, content), expressing (*i.e.*, expression), or both at different times or at once. While maintaining their individual properties, the components combine to create a fluid entity that is more than simply the sum of the components. Deleuze and Guattari use the image of a swarm of rats to aid in visualization. Let us use a more recent analogy, the home entertainment centre. The

entertainment centre might consist of a television, DVD player, an audio receiver, speakers, a video game console, power cords, and audio input and output wires. Each of these components provides various forms of entertainment (e.g. watching movies, playing video games, listening to music, etc.), yet any one of these components can be replaced or removed without all access to entertainment removed. Each component within this assemblage maintains its individual properties. The video game console will run the video game that is loaded into it whether it is connected to the entertainment centre or not. When part of the entertainment centre, each component interacts with the others to produce a home entertainment experience. A video game is played by running the software, watching the images on the screen, listening to auditory cues through the sound system, and taking action with the character on the screen. As individuals engage in the video game, they become part of the assemblage, making it a social assemblage, and an interaction of action and expression is continued between the components. It may be difficult to fully see the lines of flight, curves of visibility and enunciation with some of the wireless technology that has entered the market, but for those who still use wired devices, a glance behind the console centre will bring a mess of tangled wires into view. This tangled mess of wires, components of the entertainment centre, are a visualization of the lines of force that pass through areas of the assemblage. One may also discuss the territory of the entertainment centre, how it can be deterritorialized by television media, how it can then deterritorialize spaces within the home, and even the social actors watching television shows on it. One may also discuss how the social actors can deterritorialize the entertainment centre by changing video games, changing channels, or through other such interventions. These are all examples of the interaction between the components and lines of flight that create axes of territorialization-deterritorialization. Like the entertainment centre, the smartphone is non-hierarchical (although

media is certainly trying to stratify itself within the assemblage), non-arborescent, and contains heterogeneous elements that reciprocally interact with each other, while maintaining individual properties and contributing to a non-totalized entity that is greater than the sum of its parts. However, the smartphone's components tend to be connected wirelessly, closing space and altering time. The smartphone also has characteristics that seek to control and govern social actors. It is these characteristics that make the smartphone an apparatus.

All clicks are clacks, but not all clacks are clicks

In some logic puzzles there are elements of confusion that are created because of classifications. I remember one puzzle in particular that described that all clicks were clacks, but not all clacks were clicks. When abstract terms like clicks and clacks are used, we might get confused. We can understand the type "click-clack" of classification by using squares and rectangles. Rectangles are shapes that have four lines and four 90 degree angles. Squares are shapes that have four equidistant lines and four 90 degree angles. By this definition, then all squares are rectangles, but not all rectangles are squares. The same logic of classification that applies to clicks and clacks, and that applies to squares and rectangles, applies to apparatuses and assemblages.

All apparatuses are assemblages, but not all assemblages are apparatuses. The distinction between an apparatus and an assemblage is that an apparatus, while maintaining the same characteristics of an assemblage, also has the added characteristic of attempting to subjectify social actors and govern their behaviour. Giorgio Agamben (2009) offers particular insight on the subjectification created by apparatuses, explaining that the apparatus is a device that produces subjectification and, as such, it is a machine of governance. For Agamben, the

subjectifying aspects of apparatuses share an element of *oikonomia*, which he defines as various practices, mechanisms, ontologies, and institutions that control the actions and thoughts of people. *Oikonomia* is an economy of action that has been derived from the Christian faith that separated the monotheistic being of God from a Trinitarian action, the latter of which includes a divine governance of the world. Agamben explains the ties between subjectification and governance as he articulates that "the term 'apparatus' designates that in which, and through which, one realizes a pure activity of governance devoid of any foundation in being. This is the reason why apparatuses must always imply a process of subjectification" (p. 11). To paraphrase, then, apparatuses must separate the being from action so that action can be controlled and governed.

Agamben explains that there is a shift in the process of subjectification that has occured. Rather than subjectification, in the current, post-industrial capitalistic phase, a desubjectification process is taking place. The process of subjectification creates a new "I" through the negation and assumption of the old "I." Desubjectification includes the negation of the old "I" but does not create a new subjectivity. The processes of subjectification and desubjectification, Agamben states, are reciprocally indifferent, thereby eliminating the rise of a new subject. This process of desubjectification maintains the separation between action and being, but it does so in a manner that reduces the being to a simple quantification.

Agamben also explains that apparatuses are routed in the process of making humans more civilized. This process is a division between action and being that separates the living body from its environment. This separation between humans and their environment creates a socially constructed world, which Agamben calls the Open. Apparatuses crowd the Open thereby invalidating the natural, animalistic, behaviours that are now separated from humans. Correlating

the infinite growth of apparatuses to the proliferation of subjectification, Agamben warns that there is "a dissemination that pushes to the extreme the masquerade that has always accompanied every personal identity" (p. 15). If apparatuses must separate the being from action so that action can be controlled and governed, a critical aspect of this separation appears to be the erosion of the natural. From my perspective, it appears that this erosion of the natural and separation from environment culminates in the socially and digitally constructed Open of the virtual, where there is a loss of body, materiality, and the local (Lajoie, 1996; Ngyuen & Alexander, 1996).

The process of subjectification, and the concomitant separation of being from action, is a product of the curves and lines of the apparatus as rhizomatic assemblage. As mentioned earlier there is variation to these curves and lines. Agamben (2009) illustrates this variation clearly in his discussion of the subjectification that occurs between beings and apparatuses,

> We have then two great classes: living beings (or substances) and apparatuses. And, between these two, as a third class, subjects. I call a subject that which results from the relation and, so to speak, from the relentless fight between living beings and apparatuses. Naturally, the substances and the subjects, as in ancient metaphysics, seem to overlap, but not completely. In this sense, for example, the same individual, the same substance, can be the place of multiple processes of subjectification. (p. 14)

Methodology

My research question approaches the social impact of smartphones by considering these devices as a social apparatus. My method of inquiry investigates these devices as empirical phenomena. John Urry (2000) explains that objects, such as technologies, texts, images, and machines, reconstitute social relations. People possess few powers that are not realized without complex interconnections to material objects that have ontological depth and transformative power (p. 14). The expanding reliance on technological objects alters how societies need to be understood. Urry explains that "Societies moreover are not necessarily organized around an originating centre, they are partially constituted through objects as well as through subjects, and since their borders are porous it is difficult to specify just what constitutes the edge of such a society" (p. 18). Objects are jointly constituted with and alongside humans. These "phenomena thought of historically as separate human and physical entities appear to combine" (p. 78) into hybrid networks. Because of these hybrid networks and the resulting shifts in society, Urry calls for new methodological ways of doing sociology.

In investigating the smartphone as a social apparatus, I study these objects from three perspectives: the physical-reality of the phones and how these devices are experienced via the senses; the virtual-reality of the devices and how this realm is experienced by sense and imagination, and; the coded-reality of the devices and how digital code and algorithms shape experience. These perspectives were explored semantically and somatically. My semantic understanding of the smartphone was gained through an analysis of existing literature and secondary sources on the smartphone and its programming. By analyzing scholarship on smartphones, the technological predecessors whose functionalities are included with smartphones (*i.e.*, the Internet, mobile phones, computers, etc.), theories related to technology,

generally, and the effects of digital technology, this approach will provide insight into qualitative and quantitative aspects of the devices' physicality, virtuality, and digital coding. My semantic understanding is balanced with a somatic understanding of the smartphone, which is achieved through an autoethnographic engagement with a smartphone. My autoethnographic experience informed and was informed by my analysis of the literature, and provided theoretical insight into how smartphone technology differs from earlier manifestations of mobile and communicative technology. By allowing the semantic to merge with the somatic, the context from which my knowledge was generated, a more comprehensive understanding is achieved.

What is Autoethnography?

Autoethnographies are dialogical metanarratives (Chawla & Rawlins, 2004) that are interesting, innovative, and evocative (Bochner, 2000, p. 268). A defining feature of these works is that they allow for the interpretation of culture "through the self-reflections and cultural refractions of identity" (Spry, 2001, p. 727). Spry also explains that autoethnographic self-narratives allow for the body to be a central site of meaning making. This is a profound and necessary reaction to other methodologies that privilege the method over the subject, and elevate the researcher over the research context, placing the researcher as a subject as purveyor of truth, validity, and generalizability. Autoethnographic self-narratives do more than extract meaning from experience. By helping the reader to feel and understand the phenomenon, autoethnography adds coherence and provides continuity to the research narrative (Bochner, 2000).

Grounded in social constructionism, autoethnography seeks to elicit transformative action and draws on the traditions of feminism, postmodernism, postcolonialism, and indigenous knowledge (Kidd & Finlayson, 2009, p. 982). Spry echoes that autoethnography aims to stimulate transformative action, stating that not only is this a primary goal, but that the potential

for transformation extends to the reader, the researched, and the researcher (Spry, 2001, p. 712). This transformation is made possible because by researching a lived experience, autoethnography can identify breaks, junctures, and layers of interaction and similarities amongst the researcher and others. As Spry explains:

> The autoethnographic text emerges from the researcher's bodily standpoint as she is continually recognizing and interpreting the residue traces of culture inscribed upon her hide from interacting with others in contexts… In autoethnographic methods, the researcher is the epistemological and ontological nexus upon which the research process turns. (p. 711)

For Spry, there is a chaotic nature to our experience. Social science cannot adequately capture this chaos through only a few research methods. For this chaos to be captured, it requires many interpretive and critical methodologies that seek to free the various meanings that lie within this chaos (p. 727). Freeing the various meanings occurs through the use of a myriad of methods. It is the aggregation of these studies, of which autoethnography must be included, that creates a body of knowledge containing many meanings. Central to this line of thought is the postmodern notion that there is no Truth, but many truths. Autoethnography captures one perspective. This perspective may be shared with others or approximate other perspectives. There is empirical value to capturing this perspective.

Autoethnography, then, is an approach to research and writing that seeks to understand cultural experience by describing and systematically analyzing personal experience (Ellis, Adams, & Bochnar, 2011) and emotions as researchers engage with a discipline, culture, or phenomenon. The meaning captured by autoethnography needs to move beyond the researcher. The analysis that takes place with this method must transition beyond the personal and consider how others may interpret the experience. As Ellis et al. explain

> Autoethnographers must not only use their methodological tools and research literature to analyze experience, but also must consider ways others may

> experience similar epiphanies; they must use personal experience to illustrate facets of cultural experience, and, in so doing, make characteristics of a culture familiar for insiders and outsiders. (Art. 10, p. 4)

To be clear, however, autoethnography is not about dictating how the personal experience translates to someone else's experience. By opening outwards and being self-reflexive, the autoethnographer allows the reader to empathize and join the researcher. This in turn allows the reader to become familiar with the characteristics and experience of the culture or phenomenon being investigated.

For Spry, this transition from the personal requires that the researcher interrogate the political and ideological contexts and power relations between "self and other, and self *as* other" (Spry, 2001, p. 716). I would argue that this interrogation needs to include the ontological and the epistemological. If the autoethnographic researcher is to make meaning of a phenomena, she must not only find what that meaning is, but how she comes to interpret and understand that meaning. Spry asserts that "Translating the lived intersections of self, other, time, and space into autoethnographic performance has allowed me to interrogate my personal, professional, and political voice… Critically reflecting upon my place in time with others through autoethnographic performance research has made me feel power *with* rather than power *over* my self and others" (Spry, 2001, p. 721). By considering how we come to make meaning, the autoethnographer extends his critical reflection to the position in which he is situated. By being open and honest regarding her position, the autoethnographer is able to increase her reflexivity, thereby making her text more accessible for others. An increased accessibility enables more readers to engage with the text and increases each reader's emotional connection to the autoethnographic script. Ultimately this creates a larger web or assemblage with more

connections, which should allow for considerably more "power *with* rather than power *over* my self and others" (p. 721).

Another aspect of autoethnographic work, which Spry elucidates upon, is the text–body dialectic (p. 711) that weaves academic and physical knowledge (p. 727). In this dialectical process, the knowledge that is gained cannot be segregated to belonging exclusively to the text or the body, since both are necessary. As Spry explains,

> The embodied autoethnographic text is a story reflecting the research artist's collaboration with people, culture, and time. It is generated in the liminal spaces between experience and language, between the known and the unknown, between the somatic and semantic. The text and the body that generates it cannot be separated. Surely, they never have been. Postcolonial writing has not brought the body back, it has exposed and politicized its presence" (p. 726).

Despite exposing and analyzing the body's presence, Spry warns of the "hegemonizing crisis of representation in the White male proctored academic writing and publishing structures" (p. 726) that eliminate the body from research. Not only does this erasing of the body from scholarship cause a dichotomous way of gaining academic knowledge, this approach situates the body as incapable of gaining insight and knowledge. Spry advocates that "Coaxing the body from the shadows of academe and consciously integrating it into the process and production of knowledge requires that we view knowledge in the context of the body from which it is generated" (p. 725).

It should be added that this thesis includes a discussion and exploration of the subjectification that apparatuses create. Agamben (2009) argues that there is a loss of body as apparatuses seek to control human action. As this is a cause for concern, it is valuable to include a methodology that does not also exclude the body. In this way, autoethnography seems an appropriate research method to employ. Although in so doing, one must include the entire dialectical process of text and body.

One of the results of academia's erosion of the body is that it can be difficult to publish autoethnographic texts (Spry, 2001, p. 722). This may stem from the insecurity of social science. In its bid to be taken seriously as a science, social sciences often emphasize scientific practices at the cost of neglecting imagination (Bochner, 2000, p. 267). One of the ways that this insecurity can be addressed is by including both the science and the body. Said another way, if there is a text–body dialectical, the researcher should ensure that his product is shaped, expressed, and presented to the reader dialectically. The answer to this insecurity is not to shun imagination, but to find ways to embrace both scientific practices and imagination. We should not approach this from an either-or perspective, but from a perspective of inclusion. Social science is not served by excluding either theory or corporeal knowledge. As Clough (2000) explains:

> Staying close to theory allows experimental writing to be a vehicle for thinking new sociological subjects, new parameters of the social. Opposing theory and experimental writing seems to me a regression to a situation in which method, disavowing its ideological or sociopolitical content, becomes instead a policing of what is to be considered good or bad sociology, what is to be accepted or not for publication (p. 290)

If presenting corporeal knowledge, or autoethnography, is experimental. Let us address its scientific shortfalls and articulate the benefits of this research.

Pros and Cons—Leading to Criteria for Autoethnography

One of the main arguments against autoethnography is that it is narcissistic (Vickers, 2002, p. 615). Embedded in this criticism is a problem of representation and legitimation. The use of self to produce research creates obstacles to autoethnography's acceptance because the researcher is also the lone subject. It cannot be empirically supported that the research is representative of an authentically reproducible result. Central to this criticism is a logic that

operates on the existence of one Truth. If, however, we accept that there are no universals, then the use of self can legitimately be representative of at least one perspective. Vickers addresses the charges of narcissism by explaining that autoethnography is not about the researcher's ego, but actually leaves the researcher "emotionally naked" (Vickers, 2002, p. 616). We can understand this further by considering reflexivity. As Chawla and Rawlins (2004) explain, "The most edifying reflexivity is not turning or spiraling inward but opening outward" (p. 972). Autoethnography, then, is not a narcissistic exercise, but one that demands that the author become deeply reflexive and turn this reflexivity outwards, opening herself and her reflexive awareness up to the audience. This process adds clarity and increases trust in the researcher and his work (Humphreys, 2005, p. 851). This process also helps to explore experiences that may not be captured by investigating others (Vickers, 2002). Autoethnography, then, is an exercise of connecting to one's audience through empathy, which outweighs any dangers of narcissism and self-indulgence (Humphreys, 2005, p. 853). For these reasons, I support Vickers' claim that "Sometimes the voice *should be* personal" (Vickers, 2002, p. 619).

Another criticism of autoethnography is that traditional criteria used to pass judgement on qualitative research is not necessarily suitable for this methodology. Several authors have attempted to offer criteria for autoethnography. What follows is a discussion of seven criteria formed by combining several author's thoughts and criteria. Spry (2001) tells us that "A fine autoethnographic performance reveals a substantive sophisticated weave of a performer's textual analysis, her contextual analysis, and her somatic acumen, thereby presenting critical self-reflexive analysis of her own experiences of dissonance and discovery with others" (p. 727). All seven of these criteria strive to guide the autoethnographic researcher to meet this ideal. As these criteria are discussed, however, we might be served by heeding Bochnar's (2000) warning that

the application of criteria can serve a destructive and conservative function. These criteria, then, are intended to guide the autoethnographer, but they cannot be applied as rigid rules that delimit and narrow the research.

Understanding the Social

The first of the seven criteria is that the research needs to offer insight into social life (Richardson, 2000a; Richardson, 2000b). While autoethnography is a personal experience, this method is a grounded experience that must employ a sociological imagination that connects the personal to the social. As Kidd and Finlayson (2009) explain, autoethnography "uses embodied emotion to move from a personal knowledge to include a cultural context" (p. 982). At the heart of this lies Ellis, Adams, and Bochnar's (2011) claim that the researcher needs to reflect not only on his personal experience, but consider how others might experience the same phenomenon. To aid in this move to the social, autoethnographic text should promote dialogue and help the reader better understand the phenomenon (Ellis, 2000, p. 275). In this way not only will the research consider other social actors, but also the dialogue will open the text to contribute to the social. For this to be effective autoethnographers must include enough details in their text for their audience to empathize and join in the situation. This can only be accomplished by including facts and feelings. As Bochner (2000) advocates, researchers need to provide "abundant and concrete detail of the commonplace *and* emotions of coping" (pp. 270-271). Not only must the autoethnographer set the stage so that the reader can see themselves in the scene, but the researcher also needs to provide the emotional background to allow the reader to imagine themselves as the social actor within the scene. If providing these details is to be effective then the autoethnographer needs to create an aesthetic through literary craft.

Throughout my autoethnographic text, I include more than my experience with my smartphone. I also include aspects of life that formed my perspective and fed my emotions at the time. I was careful to include in my field notes emotions of which I was aware. As I reviewed my field notes, I added any insight into my emotions and my past experiences that I became aware of through self-reflexivity.

Literary Aesthetics

For the autoethnographic text to have aesthetic merits, it must be well crafted (Spry, 2001). A well crafted text requires a well balanced flow to the plot, the writing needs to develop the characters and the scenes, and there must be a genuineness to the experience (Ellis, 2000). Moreover, as Bochner (2000) explains, the text needs to have the "curve of time" (pp. 271). Including elements of past and present adds a structural complexity to the text. I would argue that the inclusion of past and present also allows the reader to see how the autoethnographer has grown over time. This is a creative manner for the researcher to illustrate his self-reflexivity and makes him more naked and vulnerable to the reader. This curve of time is one way that the writer can follow Kidd and Finlayson's (2009) criteria to add layers of consciousness to the text. All of these aspects ultimately contribute to the aesthetic merit, ensuring that the text is creatively shaped, opens up the overall work, and invites interpretive responses (Richardson, 2000b).

Throughout my autoethnographic text, I include the curve of time by setting the stage with past experience. For some of my autoethnographic text, I also include future experience. As I crafted the text, I became aware of how certain experiences with my smartphone changed the path I was on. This could not, of course, have been captured at the time I was creating my field

notes. As I reviewed my field notes prior to and during the writing of the vignettes, I was able to see how I had changed and incorporated this into my vignette.

Reflexivity

Reflexivity goes beyond a general awareness of ourselves, as researchers, and the effects of our presence on the environment we are researching. For certain, the researcher needs to be self-aware (Richardson, 2000b), which needs to include a critical awareness of their sociopolitical interactivity (Spry, 2001). But, as Richardson explains, reflexivity also includes an awareness of post-modern epistemology, and an understanding from the researcher that his experience (both in the moment that the text describes and in all experiences that led up to and followed this momment) is not the reality for everyone. Moreover, Richardson adds, for a researcher to be reflexive they need to gather the data of their experience and write their autoethnographic text in a scientific manner. If we recall Chawla and Rawlins (2004) earlier assertion that “The most edifying reflexivity is not turning or spiraling inward but opening outward” (p. 972), we must also recognize that being reflexive is not just about being self-aware. Reflexivity must also allow the audience to see this honest reflection of self, or, according to Bochner (2000), two selves—an earlier self and one that has been transformed by crisis. Not only does this create emotional credibility with the reader (Bochner, 2000), but an emotionally engaging reflexivity (Spry, 2001) will "convey meaning and shared humanity" (Kidd & Finlayson, 2009, p. 982).

I have incorporated reflexivity into my texts by scientifically gathering my data. I have attempted to maintain awareness of my experience and my privilege in all aspects of my process. This includes the times I was gathering data, reviewing my notes, and writing my text. As I

mentioned earlier, I also included the curve of time and attempted to illustrate, with as much emotion and vulnerability as possible, how I had grown through my experience.

Emotionally Evocative

Aspects of emotion have been discussed briefly as elements of previous criteria, but emotional evocation is so important to autoethnography that it merits its own mention. For a full impact, autoethnographic work should affect the reader emotionally and intellectually—heart and head—or both (Bochner, 2000; Ellis, 2000; Richardson, 2000a; Richardson, 2000b; Spry, 2001). Ellis (2000) explains this as wanting to think and feel with the story, and thus to use both sides of the brain. Spry (2000) eloquently captures the need for evocativeness in autoethnography and the academic challenge to meeting this criteria: "Autoethnography is a felt-text that does not occur without rhetorical and literary discipline, as well as the courage needed to be vulnerable in rendering scholarship … to step out from behind the curtain and reveal the individual at the controls of academic-Oz" (p. 714). An evocative, emotionally engaging autoethnography motivates the audience to respond to the research by examining their own lives. By doing so, the research recognizes the ability of each reader to enact personal and cultural change (Kidd & Finlayson, 2009, p. 982).

I have mentioned that I have attempted to write my accounts with as much emotion and vulnerability as possible. At times, I felt that I could not or should not include some emotional aspects of my story. For some of these emotions, I had only become aware of the emotions because of the autoethnographic process. As I wrote some emotions, in my field notes or text, it was the first time saying these out loud, if you would. While it felt odd that the first people I would share these emotions and the awareness of these emotions with would be strangers—the

reader—I opted to do so in the hopes that this would add to the emotional evocativeness of my text.

Situated Meaning

Because the situated meaning of autoethnography expresses a reality, it shares some similarities to the criteria of understanding the social. The key point of situated meaning is that through a "credible account of a cultural, social, individual, or communal sense of the 'real,'" (Richardson, 2000b, p. 16), from the autoethnographer's standpoint, a dialogue and negotiation of that real, or meaning, can occur (Kidd & Finlayson, 2009, p. 982). This is essential so that the research can move from merely considering a social to *critically* engaging in a sociality. I have incorporated situated meaning into my autoethnography by empathetically trying to consider how others were making meaning of shared occurrences with the phenomenon. This empathetic negotiation occurred during the shared event and during my self-reflexive review. To be clear, at no time did I investigate or question those with whom I shared the event, but I attempted to consider the meaning they might be experiencing. Without a doubt my interpretations would be affected by my own situatedness.

Blurred Lines

For many research methods there are clear distinctions between the researcher and the subject. One of the critiques of autoethnography has been that, in becoming the subject and writing the personal, autoethnographers cross empirical or academic lines. Those who advocate for autoethnography espouse the advantages of the method. Vickers (2003) explains that there is an obligation to perform autoethnography, reasoning that if we are to ask others to subject

themselves to the scrutiny of empirical study, we should allow ourselves to be subjected to that same gaze. The advantages of autoethnography lie not only in the research, but also in the writing. Humphreys (2005) illustrates that autoethnographic writing encourages reader participation and allows the reader to connect to the researcher as author and subject. For Taylor (2010) the benefits of autoethnography are clearer: "Writing the personal experience is writing the social experience" (p. 639). While these and many other scholars have advocated for autoethnography, they have done so as apologists. Kidd and Finlayson (2009) move beyond providing arguments pertaining to the benefits of crossing the distinctions between researcher and subject that result in researching and writing the personal experience. Kidd and Finlayson advocate that this blurring of boundaries separating the researcher from the researched (p. 982) be included as a criteria of autoethnographic research. I support the inclusion of this element as a criteria. If academia is to embrace the benefits of autoethnography, which have been discussed here and earlier, then autoethnographers must not only justify the blurring of boundaries but also expect and embrace this blurring in autoethnographic writing. It is unreasonable to suppose that we are able to clearly delineate our behavior into appropriate as a researcher (free from being the subject) and appropriate as a subject (free from being the researcher). Moreover, as we attempt to achieve this impossible feat, we study and research a self that is not our full self. In autoethnography, the researcher *is* the subject. This subject is who they are in part because they are a researcher. To attempt to study this part person would be unscientific because we would be excluding critical aspects of our experience. Finally, to not blur the lines would be to reject the postmodern epistemology called for under the principle of self-reflexivity. By ignoring the researcher in the subject, the autoethnographer would ignore the past experiences that contributed to the experience being studied.

Ethics

While autoethnography is a personal experience, the writing describes a social scene and can include other actors. If, as Taylor notes, the personal experience is the social experience then the autoethnographer should heed Ellis' (2000) advice and keep ethical considerations in mind. This is not to suggest that there is a need to go through an ethics board, but the autoethnographer needs to have what Bochner (2000) calls an ethical consciousness that considers the other characters in her work and the reader. I think of this ethical consciousness as a component of self-reflexivity, which needs to extend into the process of writing and reviewing the written text. As a reflexive agent, the autoethnographer should be aware of his situatedness and his impact on the social. If this is extended to the autoethgraphic text, the autoethnographer must be aware of the characters she is sketching, how the text casts these characters, and how the text might impact the reader. In all of my texts, I avoid the use of names in order to protect the other characters. When a noun was used that could indicate some aspect of identity, I was conscious of this and attempted to ensure that I was not speaking for them and that I was casting them in a positive light. Finally, I tried to consider my reader by being as emotionally honest and inclusive as possible with them.

Theory and Autoethnographic Vignettes

At the center of my research lies the smartphone. I have studied these devices as empirical phenomenon, including my experience with smartphones, and I consider how they contribute to cultural experience. For these reasons, it is necessary to keep this research grounded in the social. Autoethnography is instrumental in ensuring that this research meets the criteria of

a substantive contribution to a *social* science. Said another way, the study of the smartphone as an empirical phenomenon is important in understanding the object or the apparatus, while incorporating autoethnography ensures that it is addressed as a social apparatus. A critical aspect of maintaining this balance between social and apparatus will be to contextualize by cycling between theory and autoethnography (Vickers, 2002). By moving between theory and autoethnography, this thesis negotiates the dialectical relationship that occurs between theory and autoethnography (Kaufmann, 2005), and, as Clough (2000) described, becomes "a vehicle for thinking new sociological subjects, new parameters of the social" (p. 290). Throughout this thesis, I cycle between theory and autoethnography by presenting the autoethnographic texts as vignettes. This is akin to how Bourdieu (1984) alternated between research and his discussion in his classic work *Distinction: A Social Critique of the Judgment of Taste*. The difference between my thesis and Bourdieu's being that the research I am presenting is autoethnographic. The use of vignettes offers several advantages. In addition to allowing me to negotiate the dialectical nature between theory and autoethnography, vignettes can bring research to life by eliciting from the reader an emotional identification with the researcher (Humphreys, 2005). In doing so, vignettes add to the credibility and the authenticity of the research. Vignettes also have the ability to provide nuance, timbre, and emotion while creating signposts within the larger work (Kidd & Finlayson, 2009). The autoethnographic vignette will also help to ensure reflexivity as the text will look inward and create a reflexive dialogue with the audience (Humphreys, 2005).

Finally, it is important to consider the work of Kidd and Finlayson (2009), who provide some definition for vignettes. Drawing parallels to motifs, Kidd and Finlayson noticed that this methodological presentation described recurring elements without defining the elements (p. 992), and was a collection of separate elements that added up to more than the sum of the elements (p.

991). The aspects of vignettes that Kidd and Finlayson describe are incredibly similar to Deleuze and Guattari's (1987) assemblage, which is a critical theoretical component of this thesis. Vignettes then will be a methodological simile to the phenomenon that this thesis seeks to study. This creates harmony between, and provides a consistent framework amongst the methodology and the theory of this thesis. This also allows this thesis to be structured more like a rhizome, which will hopefully allow the reader to make connections amongst all elements of the text and to find lines of flight to their own experience.

Conclusion

Vickers (2002) tells us that the researcher as storyteller has been trivialized and underrated. This is despite the fact that autoethnography can seek meaning and create a dialogue between the audience and the researcher that helps the reader to find meaning and possibly encourage critical change. Taylor (2010) tells us that "Change can be effected by writing in stories of significance" (p. 640). While traditional research can be dry and inaccessible (Vickers, 2002), autoethnography can be emotionally evocative. Moreover, it can challenge the forms of representation and the privileging certain methods provide (Taylor, 2010). To maintain a personalized experience while considering how others may interpret an experience or phenomenon, autoethnography is a very useful method. Moreover, autoethnography offers the opportunity for thinking about new sociological subjects and new parameters of the social (Clough, 2000), which is vitally pertinent to understanding the new and ever evolving smartphone. I employ autoethnography specifically to incorporate experience and personal meaning into my analysis of the smartphone. The autoethnography will be presented through vignettes that provoke discussion of various social aspects of smartphones.

Discussion

I moved 800 kilometers away from home when I was only 18. While this allowed me to venture out on my own to try and make my way, it also meant that I could nOt be around for special family events. I always made it home for Christmas, but I rarely got to see my family on birthdays. During financially tight times, my gift to a family member was always a long distance call. These calls would sometimes last for two hours. We have some talkers in my family. I am no exception. On my sister's birthday last year, my brother-in-law took her to Europe. An amazing gift, for sure, but I was worried about my traditional birthday gift. How would I be able to call her?

My worries, it would turn out, would be in vain. We managed to set up a "Google Hang Out" and have a video conference call. My father, who was in Saskatoon, logged in to the call on his iPad, I logged in to the call on my computer from Winnipeg, and my sister and brother-in-law found a free wi-fi signal on a patio in Berlin and logged in to the call with their smartphone. My father was beside himself and still tells the story to this day about how he, in Saskatoon, and I, in Winnipeg, were able to talk to my sister and watch her have a beer on a patio in Berlin. There was definitely something different about that birthday call. After that call I felt like I had shared in my

sister's day a little more than years past. Seeing her, my brother-in-law, and my father immediately brought a smile to my face. It felt very similar to the first time I would see them when I went home for a visit. It was a much more personal interaction.

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My partner is in Poland. She is visiting her family who have an inconsistent internet access. After a few days she is able to obtain a wireless router and we can have a FaceTime conversation. My initial reaction to seeing her is an instant smile. I miss her. She smiles and I reach out to touch her knowing that I cannot. It is at this time I understand her questions about my move to Ottawa for graduate school.

As we plan for the distance between us, I have been optimistic about overcoming the difficulties the distance will create. After all, I moved away from my family when I was 18 and that seems to have gone all right. I explain that we will be able to see each other everyday if we want using FaceTime, to which she replied "But how will I touch you? How will I smell you? Who will be my heater to keep me warm at night?" I had put a lot of (blind) faith in my smartphone keeping me connected to my partner while I am away at graduate school. As I reached out to touch her smiling face in Poland, reality hit me. Smartphones

can do a lot, but they cannot let me touch, smell, or lie next to a loved one.

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I am torn. I am not sure how to interpret these two stories. On the one hand, my smartphone has allowed me to feel more connection to those that geography separates me from. On the other hand, this seems to be not enough. My smartphone is at the same time a gift of connection and a crutch to bonding. It scratches surfaces that I once thought impossible to scratch but, in doing so, it makes me aware of the depths that lie below that surface. I am left to thank and chastise all at once.

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Defining the Smartphone

With the focus of this thesis being the smartphone, it would be beneficial to define this phenomenon. While a smartphone is a mobile phone with internet and computing capabilities, the smartphone as rhizomatic apparatus is considerably more. The smartphone as consumer electronic or device, such as the Apple iPhone, Blackberry, or Android is a totality composed of components that are fused together and reducible to the whole of the smartphone. The smartphone as apparatus, the focus of this thesis, is a rhizomatic assemblage comprised of a combination of multiplicities. These components, which maintain their individual properties, include but are certainly not limited to: the smartphone and its developers; the end user—social actors; smartphone apps; social media; the internet; the virtual landscape; concrete landscapes that employ smartphone functionality (e.g. paying for purchases using the smartphone, etc.);

global positioning services (GPS); communication devices, including phone and voice over internet protocol, text, and email; productivity functionality (e.g. calendar, to do lists, reminders); computational software; gaming software; music players; video players; and operating systems. It should be noted that the distinctions between a smartphone, laptop computer, and tablet device may not always be obvious or discernable. When we consider the smartphone from the perspective of a consumer electronic, the differences between these electronic media are more easily delineated. From a sociological perspective, however, the apparatus of these digital technologies is most interesting and, from this perspective, there is little to no difference worth discussing. This statement may seem to be in contradiction to earlier statements in this thesis. I have said that smartphones are an evolved technology that differ from *earlier* iterations of computers (including laptops), mobile phones, and other technologies. To be clear, smartphones are an evolved technology, but with their ubiquity and their inclusion into everyday life, other technologies, such as tablets and laptops, have begun to evolve to become more like smartphones. This, however, makes it all the more important to continue to investigate these devices.

In this thesis, then, when I am discussing smartphones, I could just as easily be discussing a tablet or a laptop. Each device is portable, allows the user to enter an internet virtuality, be connected, make purchases, etc. Each of these devices is a part of the same assemblage. Smartphones are the most portable of these devices and are the easiest gateway for new users to witness and be a part of the assemblage. For this reason and for the sake of simplicity, I will use the term smartphone, but we can easily attribute these points of discussion to other evolved forms of digital-mobile technologies.

Curves of Visibility and Enunciation

An apparatus is comprised of a territorialization-deterritorialization axis. The territorialization pole is a content-expression axis. Within this axis, content is made of curves of visibility and expression is made up of curves of enunciation. Curves of visibility are pragmatic. They are the actions of the assemblage and apparatuses determine what actions are seen. Curves of enunciation are semiotic. They are a regime of signs that the assemblage expresses and apparatuses gain authority through the act of articulating and naming. There is, however, a reciprocation between content and expression, between the curves of visibility and curves of enunciation. For this reason, an examination of any apparatus and assemblage must untangle the curves of visibility and enunciation while considering the interaction between these components and the heterogeneous mixture that the assemblage is.

As this thesis considers the smartphone, it is important to distinguish between the smartphone as a device and the smartphone as an assemblage. The smartphone as a device is the combination of microchips, wires, glass screen, and speakers that make up the physicality of the smartphone. The smartphone as a device is the small portable electronic computer. The smartphone as an assemblage is a territory of heterogeneous components that are connected. The components of this assemblage include the electronic device, but they also include social agents such as the makers and developers of the smartphone, the developers of the apps that can be downloaded onto the devices, the marketers who attempt to attract attention to the devices, and people involved in eCommerce that attempt to attract purchases of goods and services. No less important to the smartphone as assemblage are the social actors who use the smartphone as a part of their everyday life. As we consider the curves of visibility and enunciation, as we consider that the smartphone as apparatus gains authority by determining what is seen and by naming, we

have to acknowledge that all components contribute to this authority. Social actors, then, have some control in the curves of visibility and enunciation. The social actors, however, also are susceptible to the lines of force that comes with this authority. Let us look at one example to examine the content-expression axis, and the reciprocation between curves of visibility and curves of enunciation.

Smartphones include global positioning systems (GPS) and access to apps that can be downloaded by the social actor. Starbucks has created an app that uses the GPS functionality. While the Starbucks app is far from the only app to use GPS functionality, I am using this as an example. The Starbucks app has the ability to notify its users of the proximity of a Starbucks retailer. Said another way, the app offers a curve of enunciation to notify a social actor that a Starbucks is nearby. The social actor can take action and choose to visit the vendor or not. If the social actor decides to visit and make a purchase from the Starbucks, they can use their smartphone to take further action and pay for their purchase. These examples of action are examples of the curves of visibility. In these ways Starbucks is made more visible and more announced. As it stands right now, this app will only notify you if you are near one of your "favourite" locations. The technology exists to send notifications for locations that have not been favourited, but the developers fear that users would delete the app or turn the notifications off.

The increased visibility and enunciation is not achieved, however, without the connection to the social actor. The user of the smartphone has to download the app, set up favourite Starbucks locations within the app, move the content of the app to their Passbook (an Apple factory app), turn on the location services on their smartphone, and allow for the Starbucks app to send them notifications. This clearly indicates that social actors contribute to the curves of visibility and enunciation, and that social actors have some agency. The smartphone, then, is not

a dictator exclusively controlling what is made visible, what is expressed, and behaviour. We, as social actors, have a conscious choice. Having acknowledged our agency, there are still advantages to those that can develop the apps and mobilize its customer base to download these apps. As we can see, there are myriad connections involved in negotiating what the assemblage is becoming, and what we are becoming.

Because of GPS functionality, location services, specially designed apps, social actors, and the interaction amongst all of these, the maps that we find on our phones are not what Deleuze and Guattari would call tracings. Smartphone maps are indeed maps. The difference between mapping and tracing is that the map constructs the unconscious, whereas tracing reproduces the unconscious. While a tracing is a reflection of what was, the map is a part of the assemblage and is becoming along with the assemblage. Smartphone maps, then, are a part of the assemblage. This means that smartphone maps are connected to all components within the assemblage, therefore they are becoming along with the assemblage, and they are contributing to what the assemblage is becoming. For this reason, from a corporate perspective, there is much to be gained by achieving a monopoly or distinctive edge in the provision of smartphone maps.

It is easy to understand, then, why Google, Nokia, and Apple are putting forth so much effort to provide smartphone maps of the physical world. An example of this race to map is made evident in the changes to the map provider on the Apple iPhone. Until 2012, Apple iPhones came preloaded with Google maps. With the sixth iteration of the Apple iPhone and iPad operating system, Apple loaded its (underdeveloped) mapping app. Apple has since encouraged app developers to embed Apple maps inside future apps (MacDailyNews, 2012). This loss of being a pre-loaded app resulted in a loss of advertising revenue for Google, but it also meant that Google lost access to the data that smartphone users were providing as they used their smartphones. Said

another way, in addition to revenue, smartphone maps are an entry into a smartphone assemblage and provide connections to the social actors within the same assemblage. This race to provide smartphone maps is not to see who can map a geography first, it is an arms race to ensure that a map provider does not lag behind in its ability to make visible and enunciate, and to amass the power and financial gain that comes with those abilities.

The race to map, then, is actually a race to make visible and enunciate. It is a race to try and become the dominant mapping element within the smartphone assemblage. If an assemblage is an heterogeneous mixture of elements and greater than the sum of its parts, a lone or dominant mapping element would essentially result in an homogenous element. A monopoly on mapping services would make the assemblage less heterogeneous. This in turn stratifies this aspect of the assemblage and makes the assemblage less rhizomatic and more arborescent, which in turn reduces the lines of flight.

The story of the race to map was used here as an example of the various races towards a monopolization of certain elements of the smartphone assemblage. There are not only races to map. There are also races for supremacy as a web search tool, music and video provider, to create new apps (or the next must have app), and to have the best accessibility to quality and quantity of apps. Just as in the race to map, these are races to gain a monopoly of one element of the smartphone assemblage in order to become a greater authority to name and make visible. Where once there was a race to colonize geographical regions, the digital age has created a race to colonize the territory of the smartphone assemblage.

Lines of Subjectification

As I mentioned earlier, Deleuze explains that a dimension of the apparatus are lines of

subjectification. Subjectification is the dimension that distinguishes an apparatus from an assemblage. This dimension attempts to subjectify social actors and govern their behaviours. Agamben has expanded on this, articulating that apparatuses are machines of governance that meet their ends through various practices, mechanisms, ontologies, and institutions that control the actions and thoughts of people. This control is accomplished as apparatuses separate the being from action so that action can be controlled and governed. Michel Foucault's (1995) classic work, *Discipline & Punish*, carefully articulated the various practices, mechanisms, ontologies, and institutions that formed the carceral nature of our prisons and extended this form of control beyond the prison walls into our everyday lives. Foucault explains that this discipline is accomplished through a "micro-physics of power," which he describes as careful and precise techniques that defined a detailed manner for the body, everybody's body, and for how people should conduct each action and behave. More specifically, Foucault explains that the micro-physics of power act upon people and make bodies docile,

> What was then being formed was a policy of coercions that act upon the body, a calculated manipulation of its elements, its gestures, its behaviour. The human body was entering a machinery of power that explores it, breaks it down, and rearranges it…Thus discipline produces subjected and practiced bodies, 'docile' bodies. (p. 138)

Foucault explains that disciplinary spaces form docile bodies through the art of distributions, the control of activities, the organization of geneses, and the composition of forces. The smartphone, as an apparatus, must have the dimension of subjectification. The smartphone must govern through various practices, mechanisms, ontologies, and institutions. This can be said one other way. As an apparatus, the smartphone will be a disciplinary space that makes bodies docile through the components that Foucault elucidated upon. These parameters are indeed met by smartphones in a myriad of ways, as will be discussed below.

Smartphones, as an apparatus, make bodies docile and produce subjectification through the *art of distribution*, the *control of activities*, the *organization of geneses*, and the *composition of forces*. Smartphones perform the *art of distribution* by enclosing certain people in a space while excluding all others. This segregation often occurs within virtual locations such as computer networks, particular social media, applications specific to a certain brand of mobile technology, or any permutation and combination of these. Employers may have employees from around the globe who are accessible via smartphones that are set up on a company owned network. People may communicate via Twitter, and those that do may not be communicating via Facebook. Blackberry users can BBM, while Apple users can iMessage, but the brand specific chat applications cannot interface. Mobile technology not only encloses people within the aforementioned virtual spaces, it also segregates people into a virtual world and from the physical world as people interact in the virtual despite being geographically dispersed. This shared use amongst dispersed members of a social group creates what James Katz (2008) calls an absent present. The absent present occurs when people who are absent from sharing a physical location are present virtually, such as via text message. While this is an accurate description from the perspective of the virtual, it ignores the social separation that occurs in the physical. An example of this separation is the family or group of friends that dine together, yet do not connect with each other as they check work email, check in on Facebook, or text a friend. Members of this hypothetical family are an absent present within the virtuality of work, social network, and the friend on the other end of the text, but the family members are a present absent to each other. In this way, they are enclosed within different virtualities (e.g. email, Facebook, text), but they are also enclosed into these virtual spaces from the physical space of the dining room. An individual's body, then, may be made docile by being enclosed physically and virtually through

the smartphone apparatus.

Smartphones also partition space by "establish[ing] presence and absences, to know where and how to locate individuals, to set up useful communications, to interrupt others, to be able at each moment to supervise the conduct of each individual, to assess it, to judge it" (Foucault, 1995, p. 143). An example of smartphones establishing presence can be found in instant messaging and chat applications that offer information on the status of a message. People can now see if a message has been read and if it is being replied to. No longer do mobile technologies establish the presence of a user, they now offer a qualitative measure as to *how present* the user is, related to specific communication. The ability to establish presence and absence is further expanded with GPS applications. Some of these applications use the GPS functionality voluntarily, such as Four Square and Facebook, in which users "check-in" to the locations they are at, while other applications use the GPS functionality by default. An example of the latter is Find My Friends, which will not only show the location of an individual on a map but can send a notification when an individual leaves or arrives at a location. GPS functionality is also used for mapping and routing and, when used in conjunction with location services, provides reminders and notifications upon arrival to or departure from an area or location. These reminders and notifications are indicative of techniques to locate individuals and they illustrate how smartphones "interrupt others" (Foucault, 1995, p. 143). Smartphone notifications and reminders are also sent with: each new email and text message received; tasks on to-do lists that need accomplishing; and, for upcoming events scheduled in a calendar. These notifications are obtrusive in their interruptions as they include audio, tactile (vibrations), and visual alerts. Smartphones use many techniques to establish presence and absence. The culmination of all of these techniques partition virtual space by being "able at each moment to supervise the conduct

of each individual, to assess it, to judge it, to calculate its qualities or merits" (p. 143).

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"Whoa! Ryan, are you okay? You just had the most pained expression on your face." The guy across the poker table is worried about me. Apparently, I grimaced enough that not only was my pain noticed, but someone who is neither friend nor stranger would be concerned about my health. The thing that is most odd about this, however, is that I had no clue what he was talking about. I had not felt any pain or discomfort, at least none of which I was aware. Telling him so, the table is now curious, so we start to try and piece the events together.

It turns out that just before I was washed in pain and discomfort, a player's phone rang. Since this seems to be our only clue, the player makes his phone ring and I immediately understand. Years before, I used to be a General Manager for McDonald's. I would often get phone calls from more junior managers because they were experiencing something for the first time and wanted to solicit my opinion on how to proceed. These calls would come in at all hours of the day. One of the restaurants I managed was open twenty-four hours a day, so sleep was often interrupted. As much as I had enjoyed some of the earlier days of this career, by the end I was unhappy and unhealthy. To help me determine if a call was from work or not (the expectation was that we answer all calls from the

restaurant), I had selected a separate ringtone for any of the McDonald's phone numbers under my supervision. The ringtone I had used for the McDonald's I managed was the same ringtone that rang just before I had been overcome with pain and discomfort at the poker table years later.

When I first figured this out, I remember thinking about Pavlov's experiments. Well, actually I remember thinking about lyrics to a Bare Naked Ladies song. "Ring a bell and I'll salivate, if you like it like that. You can call me Pavlov's do-og." I think about this story every time I add a contact to my phone or hear a new app's novel push notification. I actually try to go in and change my calendar and reminder notifications every few months because I do not want to become conditioned to those sounds. It makes some sense that I change these sounds, but I think I should probably question how flagrantly my smartphone and its notifications can permeate my life and condition me.

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Smartphones also contribute to the *art of distribution* by functionalizing space, that is to say converting a space that was general in its use to a useful space in which supervision, through naming, recording, and serializing, can occur (pp. 143-145). People can now draft an email while waiting at the doctor's office, look over a budget proposal while riding the bus to work, or even touch base with a client while watching their child's recital or hockey practice. In this way, mobile technologies not only convert spaces of general use to functional spaces, but they convert

reproductive and leisure spaces as well. Smartphones allow for supervision of virtual space to occur automatically through what Foucault would label as the classification of space. With the use of "cookies," small text files that are used to keep track of a user's movements within a website, the smartphone apparatus can identify a user's preferences, infer demographics, and control the user's future experiences. Smartphones can also supervise a concrete space as well. With the use of GPS, computer processes and formulae, smartphones can create and supervise algorithmically produced social worlds. Smartphones' supervision and impact are not exclusive to the virtual. The supervision and impact of smartphones include the physical. An example of smartphones supervising concrete space can be found in the home thermostats that sync up to smartphones via specially designed apps. The combination of these devices perform the mapping functions that Deleuze and Guattari explained by learning users tendencies (e.g. arrives at home at 5:20 PM) and desires (e.g. warm house to 72 degrees Fahrenheit). Using the GPS functionality, the assemblage that includes the home thermostat can be programmed for deviations from the norm and react to an early departure from work to begin heating the home early, for example.

Smartphones also have the ability to make bodies docile by *controlling activities* through timetables, the *temporal elaboration of the act*, the *correlation of the body and gesture*, the *body-object articulation*, and *exhaustive use*. Smartphones have brought the use of timetables and task lists to new heights. Not only do smartphones use calendars and to-do lists with reminder notifications that interrupt activities using audio, tactile, and visual alerts, these alerts can be set to remind based on time and physical location. More than an alarm, these notifications can leave a message with the activity that is to be completed and, if this activity is to be conducted in a virtual space, provide a link to launch the activity. Moreover, these reminders can be set directly

from screen work that is being performed. By sending calendar and task list notifications based on time and physical space, mobile technologies clearly employ a time table's "three great methods – establish rhythms, impose particular occupations, regulate the cycles of repetition" (Foucault, 1995, p. 149).

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There is so much to do. I am working from campus in the morning, from my employer's downtown office in the afternoon, I have to run a couple of errands on my way home, and then remember to do a couple of things as soon as I get home. It is one of those days that, despite efforts to compartmentalize and keep the many hats I wear sorted, everything seems to collide. I have many tasks that need accomplishing and each task is time and location sensitive. I imagine we all have these days. With my ADHD I am concerned about losing track of any one of these tasks. I fear I'll get to the office and realize that I did not do one of the things at school. What then?!

My mother's words to a young me echo, "It is better to have a short pencil than a long memory." This of course is true, but even if I write everything down, there is no guarantee that I will look at the list at the appropriate time or at the necessary location. Short pencils do not tap you on the shoulder, Mom. At least they did not. With my smartphones *Reminders* app, I make a to do list and set each task up to

remind me at a certain time, as I arrive at a location, or as I leave a location. I begin my day at school.

> 8:25 AM — *Ding!* "Pick up graded exams"
> 12:55 PM — *Ding!* "Managers meeting"
> As I am leaving work — *Ding!* "Buy tub surround"
> As I arrive home — *Ding!* "Put roast in slow cooker" and "Prep for conference call"
> 3:45 — *Ding!* "Conference call"

At the end of the day I am exhausted, but also elated and amazed that I was able to accomplish everything. I decide to look back through my *Reminders* to see all that I had accomplished. Above all of my completed tasks is a familiar sight, "Co-curricular committee forms communitylink.umanitoba.ca Arriving:Home." Almost a year ago I set a reminder for when I got home to go online and submit the contributions that I can list on my co-curricular form—something beneficial to have for my academic *curriculum vitae*. When I got home that night a year ago, my reminder went off. I was tired so I decided to put it off until another day. I left the reminder on so that I would not forget. Almost a year later and I am still putting it off. I suppose even when the pencil does tap you on the shoulder, there is no guarantee that I will accomplish the task. Short pencil or smartphone, no matter the technology, I suppose it is up to me to get it done.

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Smartphones define motions of the body and allow time to penetrate the body, both aspects of Foucault's *temporal elaboration of the act*. The haptic use of smartphone technology is

changing the way the human body is used to communicate and perform activities. Because of touch screen capabilities on smartphones, users can virtually touch and engage with virtual workspaces. To do so, however, the human body must learn and master the minute ways to articulate itself through motions conducive to the mobile technology. To illustrate how smartphones allow time to penetrate the body let us consider Ben Agger's (2011) concept of iTime.

Agger explains, with smartphones as the work station of choice, time becomes portable and elastic (p. 124). The portability of the smartphone allows for the erosion of spacial boundaries. The elasticity of the smartphone allows for the erosion of temporal boundaries. The loss of spatial and temporal boundaries *is* time having penetrated the body. This is more than simply checking emails while at the doctor's office. It is manifest as friends ignore each other while out together, the parent who is distracted by the endless work on his or her phone while their child runs out of sight at the mall, it is the person that sleeps with their phone and checks their Twitter, and responds to email and texts when they first wake up.

Smartphones also control activity through the *correlation of body and gesture* by imposing the maximum efficiency and speed through the best use of the body. Smartphones eliminate idleness in parts of the body. Smartphones allow for multiple applications to run at the same time while using attachments and software to facilitate multiple uses at the same time. Headphones or hands-free devices, for example allow the user to make a phone call while looking something up on the internet, entering something into their calendar, or while driving. Apple has taken this to a new level with the development of Siri. According to Apple (2013), "Siri is the intelligent personal assistant that helps you get things done just by asking. It allows you to use your voice to send messages, schedule meetings, place phone calls and more." iPhone users can use their voice

to type email and texts, set calendar event and reminders, or dial a phone number. This also allows the user to use the rest of their body to complete other tasks. In this way, mobile technology facilitates the maximum efficiency and speed through the best use of the body, thereby controlling activity through the correlation of body and gesture.

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I should be honest. I have never been much of a fan of video games. The first gaming console I ever owned was a Nintendo Wii that I received years ago. The Wii, along with *NHL 2K10*, was a get well gift after having broken my hip playing hockey a couple of weeks earlier. The gift came with a card that read "Perhaps you should stick to this kind of hockey from now on." I never played *NHL 2K10*. I opened the game's packaging, read the instructions, and thought "This looks complicated." I also tried my hand at *DJ Hero* but after a couple of hours over a few attempts this game too would collect dust. The Wii is now unceremoniously packed away in my basement. Despite my disinterest in video games, I felt it necessary to include these in my research of smartphones.

I decided to download *Angry Birds*. Part of my reasoning was because of the game's meteoric rise in popularity. Part of my reasoning was because it was a game that was born on the smartphone. Mostly I chose this game because I was able to download it for free thanks to another app I had. When I first launched the game, I remember noticing the simplicity of the

game. There was no threat of me thinking "This looks complicated." I was concerned that I would quickly become bored since the only physical activity I needed to perform was to touch the screen at one point, move my thumb a centimeter or so to the left, and then remove my thumb from the screen. I forced myself through a few levels and called it a night. I would try again in a day or two.

The next time I played the game, I noticed a couple of nuances. There were little clues telling you where to aim the projectile bird. There were some inconspicuous trajectories to figure out. There were new birds to be launched that had special powers, which in turn had nuances in their use to figure out. Before I knew it I was hooked! Now I do not mean to say "I was hooked!" like some kind of marketing scheme. I was hooked to the point that I would play the games for hours at a time, more than once a day. I was ignoring necessary work that needed to be done so that I could play this game. Let me be clear, I was not procrastinating. I was actively choosing a video game over important tasks that needed to be done. For over a week, *Angry Birds* had consumed me—someone who hated video games. I played so much that I developed *Angry Bird* thumb. I am not sure if this is a medical term yet, but it should be. My left thumb, the thumb I used to launch the birds, got so overused from the micro-

movements of the game that I would wake up in the morning and have to ice it. Still this did not stop me from playing.

It was not until a meeting that I was leading at work before I realized how much this game had consumed me. Since I work from home, and needed to present a Powerpoint, I was providing the audio over a teleconference, while sharing my computer screen virtually. At one point during the meeting, someone asked a question. As I was providing my answer, I reached up and began to try and illustrate on my computer monitor with my thumb. I had to stop mid answer and apologize, explaining that I just realized that I have been pointing and touching my computer monitor and doubt that this had been very helpful since no one could see my thumb. Aside from some minor embarrassment, what really struck me was how quickly my body had internalized the movements needed to play the video game and extended these beyond the scope of the game or even my smartphone. I wondered, and still do, just how many other "smartphone manœuvres" my body does away from my smartphone that I am not even aware of.

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Smartphones have quickly become a prostheticized tool, although this prostheticization occurs with varying surfaces of the body and device. Smartphones are held differently depending on whether they are used to take photos, listen to music, watch video, play video games, type messages, or talk on the phone. Additionally, headphones can become a prosthetic, each earbud

graphed to an ear, while the smartphone itself has a part of its surface in contact with the palms of the hands as fingers make contact with the screen's grid-like layers. Perhaps the energy transmitted from the human finger to the smartphone through the capacitive material best exemplifies how the smartphone has become a prosthetic. In these and other manners of prosteticization, smartphones control activity through what Foucault would label *body-object articulation*.

Smartphones control activity through *exhaustive use*. Foucault (1995) explains that discipline, through *exhaustive use*, "poses the principle of a theoretically ever-growing use of time: exhaustion rather than use; it is a question of extracting, from time, ever more available moments and, from each moment, ever more useful forces" (p. 154). Smartphone technology has created what Ben Agger (2011) calls iTime. This notion of time makes the users of smartphones almost unlimitedly accessible and available, compresses time making it feel almost infinite (p. 123-125). iTime, then, creates a near *exhaustive use* that extracts ever more moments, which ultimately *controls activities* and makes bodies docile.

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I am really not sure what to think of my work smartphone. On the one hand, it allows me to check my email from anywhere and anytime. This can suck because every time I have a spare minute I feel like I should just double check and see if there is anything important that has come in. I can no longer just sit somewhere. Not that I was ever very good at just sitting. ADHD made sure that I was always fidgeting or moving around. My smartphone, however, allows me to sit. It just seems that all of
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my fidgeting energy has gotten sucked into my phone. There is something unsettling about this.

My smartphone's ability to become the dashboard of my life is unsettling. I think we should question anything other than our values that becomes our dashboard. For someone with ADHD, however, anything that can focus your attention feels extremely unnatural. When you spend your entire life developing strategies to be distracted without losing focus because nothing can hold your attention, you come to expect that nothing will ever hold your attention. While in class, my eyes used to dart: from-a-window-looking-outside-to-the-window-on-the-door-looking-to-the-hall-to-the-person-unwrapping-a-granola-bar-to-the-teacher… Now all of these windows and distractions are in my phone. While my professor is speaking I can check my work email, jot a thought down on a word processor app, look something the professor just mentioned up online, and check my work email again. I am not sure I like this. Without a doubt, I like being distracted. It really is all I know. I am not sure how I feel about my phone being the one thing that houses this distraction. Again, it feels unnatural.

I am really not sure what to think of my work smatphone. On the other hand, it allows my to **pretend** to be a productive employee. In addition to email, our company also has an instant messaging software that has an app for my smartphone. Now, I can

log in to this app and **appear** to be available. I rarely have people that engage me using the instant messaging software, but every time they look at their lists of names, my icon shows up as available. When I do receive a message it usually requires a short answer. Whenever a longer answer is needed, I can tell the inquirer that I am working on something and I will give them a call or send them an email in a couple of hours. This has allowed me to be much more flexible with my time. It is one of the two major reasons why I have been able to attend university full-time while working full-time.

My smartphone, then, steals my personal time and draws my attention (or lack thereof). While it is stealing my time, however, it is also giving me time. My phone is giving and taking away all at once. It is not doing this like one of those statues you see in a pond that recirculates water. I am losing and gaining both time and attention in a way that is not zero sum. I am not sure how to explain this eloquently; I am not sure how to think of this eloquently. I am not really sure what to think of my work smartphone.

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Smartphones also employ the disciplinary practice of the *organization of the geneses*. This is to say that smartphones accumulate time in people's bodies and abilities so that it can be used and controlled. Foucault (1995) explains that this is accomplished by: breaking the time and activities of a task down into smaller components and then including people into the performance
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of these components based on ability (pp. 157-158); organizing each of the threads of these components successively, according to complexity (p. 158); regulating each of these threads and testing performance at the conclusion (p. 158); and ensuring varying threads based on the distinguishing characteristics of roles and proficiency (pp. 158-159). There is no better example of these techniques than the gaming apps available on smartphones. Video games proceed through different levels of increasing difficulty. Within each level there is an increasing difficulty of task that culminates with a final test of the accumulation of the skills practiced in said level. Each succeeding level adds new skills, while maintaining proficiency in the earlier skills. While the story line of these games may make it appear as though the skills being learned are driving a race car or launching birds at targets, the actual skills being developed are in the mechanics of using a smartphone and the diligence to see an otherwise monotonous task to completion. Said another way, the skills being developed are mastering screen work and accepting this as the dominant form of work.

The final strategy used to make bodies is through the *composition of forces*. As Foucault explains, discipline was not just about making the individual efficient, it was also paramount that it make the individuals a part of an efficient machine. To understand how smartphones make its users a part of an overall efficient machine, we turn to the self-reproducing screen work found in iTime as an example. As mentioned earlier, written diffusions precipitate further written diffusions. Whether these manifest as an email, text, or other mode, each of these diffusions string together to become a composite communication, which in turn become a part of the overall infinite labour of the machine Ben Agger (2011) calls iTime. This same process works for other screen work on smartphones. This can occur as Tweets become a composite of a (hashtag) trend, which in turn becomes a part of the overall Twitter or social media machine. This can occur as

downloads of songs become a composite of downloads (songs, apps, television shows, and movies), which in turn become a part of the Apple iTunes consumptive machine. There are many other examples of this technique in the virtual world of mobile technology, but virtual discipline combines each of these chronological series to form a composite that are a part of a larger machinery.

To meet the demand of the *composition of forces*, there is a need for a precise system of command. As Foucault (1995) explains, "All the activity… must be punctuated and sustained by injunctions whose efficacy rests on brevity and clarity; the order does not need to be explained or formulated; it must trigger off the required behaviour and that is enough" (p. 166). The system of notifications, which were discussed at length in the discussion on establishing absences and presence as a part of the *art of distribution*, can be set automatically from links within screen work, send visual, auditory, and tactile alerts based on time or location in order to elicit a prescribed response. These notifications are specifically "a little world of signals to each of which is attached a single, obligatory response" (p. 166). In the ways discussed above smartphones are, in the terminology of Foucault, able to create docile bodies. There are, however, differences between the discipline of the carceral space that Foucault discusses and the discipline of smartphones. The discipline of carceral spaces sought to rehabilitate its members into a contributing member of a productive society with a secondary goal of isolating those being rehabilitated. The discipline of smartphones has a different objective, it seeks to gather information about its users and their (virtual and physical) environments, while facilitating their productive and consumptive contributions to society. What remains consistent, however, is that bodies are made docile or, to say this using the terminology employed by Agamben and Deluze, we can say that smartphones are able to provide lines of subjectification.

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It is the first Christmas since my mother has passed away. Technically it is the second, but she passed away three weeks before Christmas, so it is the first Christmas after we have grieved. It is the first Christmas that annual traditions will serve as reminders. My mother loved Christmas. She would play carols in June. Everything will be a reminder of her absence. My father, who is emotional at the best of times, does not want to spend Christmas at home. There are too many reminders and he would prefer waiting at least one year before facing the memories in the house. If the truth were told, I probably would not mind running away from these for a year as well. Since my brother-in-law's family are all going to the Cancun area for Christmas, my dad asked me to join him in Playa del Carmen. This way my sister and brother-in-law can fiesta with his family and join my father and I for some of our own traditions. Of course this allows us to get away.

Being out of country and being too cheap to purchase data for Mexico, my father and I are basically unplugged from our phones unless there is a wi-fi signal. This is good for several reasons, but mostly because it will allow me to really connect with my dad. Living 800 kilometers away from him, I do not get much opportunity to connect with him. I am eager to know how he is doing on this anniversary of sorts. On a particular

afternoon, my father and I go for coffee. I am able to take this opportunity to start an uninterrupted conversation and connect with him. As we sip our coffee, we discuss so much. We remember mom. We share our feelings. We discuss some of the ways we cope and some of the ways we do not cope. Part way through our conversation my dad goes to the washroom. While he is away, I look at my phone and discover a wi-fi signal. I check Twitter.

"Oh! You got a wi-fi signal!" my dad notices upon his return. He takes his phone from his pocket and joins me using a mobile Internet by checking Facebook. We both continue to stay plugged in and never resume our conversation. Our smartphones stole our conversation. When I look back on this time, the skeptic in me feels guilty that I sacrificed continuing to bond so that I could read a tweet from someone I had never met. The optimist in me tries to answer my skeptic by reasoning that our smartphones actually helped my father and I by providing a distraction and safe denouement from all of the emotion of our bonding. The realist in me suspects that both skeptic and optimist are correct.

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Agamben explains that this subjectification occurs as apparatuses separate the body from the environment and transport it into socially constructed worlds, which he calls The Open. The smartphone, as an apparatus, algorithmically creates this social world. Digital codes create virtual environments through reiterative, transformative and recursive practices that are

generated from the smartphones' analysis of the digital system and its users. Said using a Deleuzian language, because of its ability to map itself (as an assemblage), the smartphone governs and subjectifies its users by continually becoming an Open. With constantly increasing screenwork and the ability to map the assemblage, smartphones steer users to The Open, an algorithmically produced, virtual and social world. This virtual space separates users from a natural and concrete environment, thereby eroding the local (Lajoie, 1996) and creating a loss of body (Nguyen & Alexander, 1996). While I agree with Lajoie's and Nguyen and Alexander's conclusion, I think that they miss an important distinction that when included alters the tone and finality of their conclusions. Smartphones may indeed contribute to a loss of the local and the body, but they only do so to the local and bodily knowledge *as we knew it*.

Nguyen and Alexander (1996) argue that digital technologies take away from the bodily experience we gain as we perform tasks. Because of this we lose an important way of acquiring knowledge and, in the process, become information gatherers instead of learners of knowledge. I would argue that we still have a bodily experience as we perform screenwork. Our eyes must adjust to the tints of the screen, our fingers learn the nuances of the tap dance across the virtual keyboard of the smartphone, and we still experience bodily emotions. Should one doubt that there is a bodily experience to screenwork, an accidental "reply all" to an email with a private message intended for one person can elicit fight or flight emotional reactions such as an increased heart rate and sweating. Lajoie (1996) argues that within the virtual, which smartphones create, the material becomes less than the archetypical nature of the virtual. This in turn leads to a loss of the local as people are no longer able to form a public community. Sherry Turkle (2011) offers some support for this notion as she documents that with smartphones people are becoming drawn to connection without the demands of intimacy. I would counter these

points by arguing that there is community within the smartphone Open. Friendships can be formed on social media (e.g. Facebook) and within forums (e.g. 2 plus 2). Love has been found on dating apps (e.g. Match.com). Moreover, communities can be strengthened and leveraged despite globalization and distance. Crowdfunding (e.g. GoFundMe), especially when leveraged with social media, is an excellent example of how community can be formed in the Open.

As smartphones delegate more and more screenwork and pull users into the Open, there is a loss of the bodily experience and local that we used to know. This does not mean that it is any less valid than the body and local that we experienced before the advent of the smartphone. In truth, the communities that we had and the experiences we learned from were still influenced by other apparatuses that separated us from previous natural environments. Even cases we might consider quite natural and communal, such as working a community garden, are performed in unnatural social worlds. Greenhouses, modern water supplies of the city, and new genetic strains of plant separate us from the natural as well. Smartphones may do so as well, but I argue that the loss of body and local that occurs is a loss of a simulacrum of a simulacrum of body and local. The concrete world is not and has not been a natural world for a very long time. Furthermore, regarding the move to connection without intimacy, we must realize that smartphones are new and developing. Indeed, as apparatuses they are continually becoming. Intimacy through the smartphone assemblage is possible. There is often a dualistic approach to thinking about, analyzing, and studying smartphones. This leads some to seeing the changes that smartphones are bringing as either good or bad. Earlier I detailed some of the ways that smartphones can govern and subjectify people. Now I defend some of the changes that are occurring within the

smartphone apparatus and wonder how smartphones can provide its users agency[2] and sites of resistance, even while governing them.

Lines of Flight

It has been asserted within this thesis that smartphones are an apparatus. Recalling that all apparatuses are assemblages, and that the smartphone is a rhizomatic assemblage provides insight into the agency and site of resistance that they can provide. As I have mentioned, the apparatus of the smartphone is comprised of a combination of multiplicities that are intertwined

[2] "Agency" can be a contentious term, particularly how I am using it within this thesis. As Nikolas Rose (1999) discusses, agency, thought of as freedom, can actually serve to govern. Rose explains that individuals

> must come to recognize and act upon themselves as both free and responsible, both beings of liberty and members of society, if liberal government is to be possible. And the openness and riskiness of liberal modes of government, both at the level of their rationalities and in the technologies that liberalism has invented in order to govern, lie in the inescapable quid pro quo that what individuals are required to give, they may also refuse… On the one hand, the 'public' activities of free citizens were to be regulated by codes of civility, reason and orderliness. On the other, the private conduct of free citizens was to be civilized by equipping them with languages and techniques of self-understanding and self-mastery. (p. 69)

Agency, then, can be thought of as freedom and subjectification. As Rose explains in his introduction, his work grew out Foucault's work on governmentality. Foucault's work can help us wrestle with this notion of agency as a form of governance. Of particular interest is Foucault's (1979, now republished as Foucault 2010) suggestion to replace the dialectical logic with a strategic logic. The strategic logic establishes connections that can be made between disparate terms while still remaining disparate. If we reject seeing agency and governance dialectically, we can see beyond trying to place these "terms within a homogeneity that promises their resolution in a unity" (p. 42). It is in this way, then, that we might understand the agency and governance that smartphones facilitate as elements of an assemblage.

As I discuss smartphones and the agency that they facilitate, it may be more appropriate to consider the agency that they provide as moments of freedom. Drawing upon assemblage theory, the lines of flight that sprout from rupture, and the *becomming* through negotiations of deterritorialization and reterritorialization, these moments of freedom (*i.e.*, the agency facilitated by smartphones) can be considered "opening liberties."

to the point that, as Deluze and Guattari (1987) explain, all components of the "rhizome can be connected to anything other, and must be" (p. 7). This aspect facilitates the governance of social actors' behaviors and action through lines of subjectification. The connection amongst all multiplicities also provides "opening liberties" and a site of resistance for the social actors within the apparatus. Furthermore, because the smartphone is a rhizomatic assemblage it is constantly becoming. As it does so it discovers new points of rupture and new lines of flight. The rhizome is able to create lines of flight from one of its old lines, on new lines, or at the point of rupture. These lines of flight expand to deterritorialize new territories and create new assemblages by becoming. Lines of flight can, at any time, transform an apparatus into a redefined assemblage by reterritorializing and including new dimensions and multiplicities. Social actors, as a component of the smartphone apparatus, can find resistance in the ruptures and "opening liberties" in both the lines of flight and their connection to all of the other components.

There have already been examples of this resistance and agency. Citizens within the areas of the "Arab Spring" used social media and smartphones to organize and circumvent state controlled media. Indeed, all but one of the protests that organized on Facebook came to fruition (Huang, 2011). Using the connectivity of all users within the smartphone apparatus, people were able to organize, and share their protests. With the social sharing of videos, photos, and text, the smartphone gave people a voice and allowed them to organize and mobilize a strong community. Smartphones and the social media that can be accessed through the devices, have also played a key role in organizing and disseminating the message of social movements closer to home. Examples of this can be seen in the "Occupy" and "Idle No More" movements. Our examples, however, need not always be politically dramatic. Support groups can be formed through the connections of the smartphone rhizome that erase the barriers of distance. Despite the pressures

of increasing screenwork, families can find ways to connect with each other. They can even keep track of each other unobtrusively with apps that use GPS functionality. Paramount to potential "opening liberties" and resistance is the ability to be actively engaged with the properties of the rhizomatic assemblage. To be clear, however, this is not a tactical response to the strategies of the smartphone landscape in a Certeauvian manner.

Michel de Certeau (1984) had articulated that strategies are effects and manipulations that occur when the subjects of a power relationship are isolated in a space claimed as a place belonging to the powerful (pp. 35-36). By having a proper place, those in power are able to capitalize and expand upon favourable positions, they are able to witness, measure, and control foreign entities through panoptic and quantifying practices, and the powerful are able to define the space they have claimed as their own. This allows those in power to maintain the space as their own. Tactics, on the other hand, are the calculated actions of those without a proper in which they seize upon circumstantial cracks in strategic locations. Tactics are actions that adhere to strategic rules yet allow the subordinated to reach their goals. De Certeau's notion of strategies and tactics are a critical component of Feenberg's (1999) two-level theory, helping him explain the initiative that subjects find under the technical and strategic control of devices. The smartphone does not create a "proper," the space claimed by the powerful. The smartphone is a rhizomatic assemblage that is continually deterritorializing and reterritorializing. Feenberg views the technology he discusses through a binary lens and applies de Certeau's dichotomous concept to explain found agency and resistance. While some spaces may be claimed as a proper, making them either my space or not my space, allowing me to employ either a strategy or a tactic, the rhizome is not such a space. The smartphone rhizomatic assemblage has ruptures, lines of flight, and is continually becoming in a process of territorialization. Because all of the elements are

connected, all elements contribute to the myriad reterritorilizations. Further to this, the components of the rhizome can produce a line of flight without all components. The components simply remain connected and new dimensions are added to the assemblage, thereby creating a new territory. For social actors, these lines of flight can be elements of "opening liberties" and resistance. This is why it is paramount for social actors to be actively engaged within the assemblage. Burrows and Beers (2013) explain the technological consciousness obtained by devices through algorithmic practices. Extrapolating on this notion, I suggest that these practices also create a technological unconsciousness within people. Because we are unaware of the technical reasoning and processes for these practices, we begin to accept the results and fail to challenge the social world that is being algorithmically produced. If social actors within the smartphone apparatus are to cause and capitalize on rupture within the apparatus, then we cannot be disengaged from the algorithms. By engaging and embracing the algorithmic aspects, connectivity to all components of the assemblage, and flat, non-hierarchical nature of the rhizomatic assemblage, we can force lines of flight and reterritorialization. Said another way, by learning how to harness the computational capabilities, leveraging the network connections, and embracing the commons of the mobile internet, people can be active in the production of their social worlds.

Some of the ways in which we can reterritorialize the smartphone apparatus and shape our social world include designing apps and building local and wide area networks (LANs and WANs), leveraging connections and building stronger ties within these connections, and repurposing algorithms to facilitate subsidiarity and qualitative rationality in addition to the existing globalist and technological rationality. Being engaged with the technical and algorithmical includes understanding how to create wired and wireless internet access and how

to develop apps. There is a current battle occurring over internet access. Internet providers are lobbying for the right to provide different levels of bandwith service depending on the website people are trying to access and fees charged. These internet providers are hoping to bundle access to particular websites for a fee, similar to a cable television monetization scheme. This, however, would isolate independent websites and app developers, making it difficult for the general user to access their site or use their app. Ultimately this could make the internet and smartphone more arborescent and allow those with the financial resources and those with more power to determine the public's access. Said another way, this move could alter the rhizomatic structure of the smartphone and shift it to a space of the powerful instead of an assemblage. While it is important to fight this attempt at eradicating "net neutrality" politically, it is also important for people to build a shared infrastructure that will allow the smartphone to remain an assemblage.

It is also important for people to become versed in the programming and development of apps. If people are to be engaged in producing their social worlds and their Open (Agamben, 2009), they will need to learn how to do so in the computational manner employed by smartphones. These apps, then, can be tailored to meet the needs felt by social actors, increase their "opening liberties," and help them construct virtual sites of resistance. Moreover, if all (or most) people became skilled in app development, there would be an increase in this dimension of the smartphone assemblage. This in turn would result in a flatter, more rhizomatic, assemblage and decrease the lines of subjectification within the apparatus. As people become more versed in the technological code of smartphones, they will also be able to rewrite the algorithms to include less technological rationality, more qualitative motivations, and to add formulae to include principles of subsidiarity and community.

Subsidiarity is a decision making process that calls for decentralized choices. Subsidiarity is the principle that decisions should be made by the least centralized (governing) body possible. It is a move to the grassroots through which the person or group closest to a situation at the perimieter of a decision's impact, is the entity that is able to make the best decision. In an increasingly complex globalized society, determining those who lay at this perimeter can be difficult to determine. When aspects of virtual space are included, this can be even more difficult. Using the computational capabilities of the smartphone, code could be written within apps to calculate the social networks, determine those impacted, and establish who can decide for all impacted. When decisions might be needed to be made by more than one person or governing body, apps could be developed to facilitate group decisions. Apps can also be developed to leverage connection amongst people and build upon strong ties. More than apps, however, people need to make concerted efforts to find solidarity with each other and to work on fostering weak ties into strong ties.

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The light from my smartphone wakes me up. I had set my phone to "Do Not Disturb" so it would not ring or vibrate. It is the first time I had used this function. Somehow the light wakes me up just after 4:30 AM. I already know before I answer. I do not want to pick up the call. As I grab my phone, I notice that I have missed several calls and texts—all from my dad. I answer with a groggy "Hello," and a heavy heart. I already know before I answer. My mother has passed away. Her cancer always had time on its side.

This was stage-four breast cancer. My mother had beaten back breast cancer, but somehow it found a way to metastasize into her hip, the top of her skull, and a couple of other places. She fought the cancer originally diagnosed for two years, and then the metastasized cancer for another two. This gave our family four extra years to be graced by my mom. This also gave me four years to lie awake at night trying to prepare for this awful moment. One can never actually prepare for something like this, but I felt strong enough to try and be there for my father and sister without burdening them with my thoughts and pain. This was beneficial because, having moved away from home twenty-one years earlier, my support network would be a day's drive away. In the days leading up to my mother's funeral, I often retreated to my phone. I would post a tribute on Facebook and text with my friends, who were reaching out to offer their support. Most of my communication, factoring in all forms (*i.e.*, face-to-face, over social media, phone calls, text messages , etc) were text messages with my girlfriend of just over two months. Without a doubt, those text messages got me through this time.

I was asked to read at my mother's funeral. I agreed. I knew that many people break down in these very circumstances. I wanted to pay tribute to my mother by reading the words she believed eloquently. I wanted those in attendance to hear the

words and understand that all was not lost. This message would have been important to my mother. So this reading was important to me. I tried to prepare and ready myself to get this message across. I felt that this message would get lost in an emotional breakdown. As I got ready to out and take my seat for the funeral, I took my phone out of the inside breast pocket of my suit jacket to make sure that the volume and vibrations were off. It was in "Do Not Disturb."(Full circle.) As I touched my phone, I felt connected to my girlfriend, like I could hold her hand. I felt love and support. Instead of putting my phone back in the breast pocket, I placed it in my left pants pocket. I was to sit on my father's left, my sister to his right. Having my phone in my left pants pocket would allow me to touch it without distracting my father. While reading, I could inconspicuously reach down and feel connected to love and support.

During the eulogy, the priest said that I had read better than anyone he had ever heard, regardless of whether they were at a funeral. "It was as if St. Paul had come down and read himself," he added. I am not concerned about how my reading ranked. I am concerned with the fact that I would not have been able to read without breaking down had it not been for the support I had from my girlfriend in Winnipeg, which I was only able to feel because of the phone in my pocket and against my leg. Returning to Winnipeg, despite being away for almost three

weeks, I felt like my relationship with my girlfriend had strengthened considerably. I saw a future with her. She is now my partner and I know that my smartphone helped nurture that.

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There has been criticism that the ties being formed within the smartphone assemblage are weak. This is to say that people become aware of each other but lack emotional investment. There is a need to foster stronger ties via the smartphone. This can be accomplished if people move away from the instant. In the short time since smartphones have been on the market, there has been a move grounded in technological rationality within the smartphone apparatus to increase the quantity of interactions and connections while decreasing the duration and quality. This move towards the instant is a move towards an accelerated hyperreality. As discussed earlier, this can be seen as people share an image of the event on Instagram, Facebook, or Twitter, instead of sharing the experience of the event with each other. It goes beyond Instagram, however. Many of our interactions (and apps that are being developed for this purpose) on a smartphone are becoming more and more brief. To foster stronger ties, there is a need to extend the duration of our interactions and find deeper ways to share our experience. Instead of simply posting a photo, we need to find a way to incorporate the emotion that accompanied the event and the emotion experienced by those looking at the picture. In this way, we need to strive not to share a snapshot but the experience. We can take this another level further by thinking of Youtube videos. Instead of filming a song at a concert, or a child blowing out birthday candles, we could stream the event in real time. Community has often been formed by breaking bread and dining together. Instead of posting photos of our food to Instagram, we could video conference friends and dine together virtually. It is easy to imagine “going out for a coffee” with people if we decide to decelerate our hyperreality. These may not be shared “natural” or concrete

experiences but, as discussed earlier, these are simply a loss of the body and local as we know it. In the hyperreal, there is no longer reality. Instead of preserving former iterations of the hyperreal and calling them real, we should focus on finding ways to find ruptures in the virtual Open (Agamben, 2009) to create lines of flight that allow us to reterritorialize weak ties into strong ties. As people continue to adopt and become more familiar with technology, and as technology continues to evolve, we may be finding ways and discovering technologies that are allowing us to extend the duration of our interactions and form more meaningful ties. Live streaming is being employed more regularly to connect more people to a myriad of events. These events include organized events with deeply emotional content, such as the "Traditional Knowledge Keepers Forum" provided by the *Truth and Reconciliation Commission of Canada*[3]. These events, however, can also be recorded and shared by individuals and grassroots organizations, as anyone can now broadcast live on YouTube (with a Google+ account), Livestream.com, and YouNow.com.

Finally, we should not discount weak ties entirely. Instead we should find ways to leverage these connections. This is being done somewhat already as GoFundMe campaigns and crowdsourcing illustrate. There are ways to expand upon this however. As diversity of coverage shrinks and hegemony increases within traditional media, weak ties can be leveraged to solicit heterogeneous news. If this were leveraged in this way it would allow for more voices, including those of the liminal and marginalized, to be heard. Weak ties also mean that there is a connection. Ties, despite being weak, decrease the geodesic distance between people. Ultimately, with fewer degrees of separation between people knowledge can be diffused quicker. This could

[3] For access to livestreams, YouTube and Vimeo videos of these events, and more information on the Truth and Reconciliation Commission of Canada, please visit the commission's website at www.trc.ca

be critical for people to organize globally. As our social worlds become more and more virtual, there is greater physical distance between those with similar interests. The principle of subsidiarity becomes difficult to apply across a massive geographic divide as word of mouth decreases with the divide. Increased (virtual) connections, even when formed with weak ties, and the improved diffusion of knowledge make subsidiarity possible.

Some of the ways in which can increased their opportunities for "opening liberties" using the smartphone may not seem like changes that can occur quickly. While learning how to program apps and build wireless networks may not be changes that can occur overnight, we can begin to gain a better understanding of code and programming by increasing our desire to learn. Furthermore, we can begin to demand that these skills be incorporated into educational curriculum. As schools look to incorporate the smartphone apparatus into their classrooms, we should be more interested that algorithms and technical knowledge be incorporated instead of letting children take notes on their phone or tablet. Working on leveraging our weak ties and fostering strong ties is a change that we can focus on immediately. We can use our presence in the smartphone apparatus to build ties and we can find novel ways to build community, intimacy, and relationships with our connections in this assemblage. Doing all of these things can build agency and provide sites of resistance, but they will not make the smartphone a liberating technology. To think this is far too dichotomous. Smartphones can, indeed, be liberating. They also subjectify and govern social actors. Smartphones, after all, are an apparatus and, as such, are a rhizomatic assemblage. This means that they can be promising, scandalous, controlling, liberating, all of this, and a whole lot more. It is up to us to ensure that we are finding the lines of flight to create "opening liberties" and resistance.

Concluding Thoughts

Smartphones are not just devices that connect and entertain us. Smartphones, have become our gathering place. Families used to gather around the hearth to commune and entertain. Communities used to have locations where similar events could occur. The glow of the fire in the hearth has been replaced with the glow from the smartphone's touch screen. Today we gather around our smartphones. Here we entertain ourselves with single- and multi-player video games, YouTube videos, and recently downloaded music. Gathered around our smartphones we commune over social media. We chat with those dear to us over videoconference and we quickly touch base by sharing a text. Social media allows us to see how the Joneses are living and to share, in some part, with events in our neighbours' lives. Without a doubt, the way we commune, entertain, and connect is different. Where once we would return to the hearth every night, or go to the community dance to connect, smartphones allow us to check in continually from anywhere and at any time. While this allows greater physical distance to come between people, it also requires that we are continually checking in and communing over our smartphones. Smartphones allow us to keep in touch, but at the expense of continually doing so. Today we can dine with family while ignoring those present as we connect virtually. We can walk down the street with our eyes on our phones while allowing people to pass us by. What of those connections in our smartphones? We can connect with people from all over the world, fall in love with someone we would have never otherwise met, and organize ourselves despite constraints of time and space. These changes, however, were changes on the surface. The fact that we text with friends more than we visit over coffee, while important, is a surface change to how we connect. Underneath the surface lie changes to the structure of our connections. This thesis was more concerned with those changes.

By focusing on the underlying changes in our connections, I was able to appropriate assemblage theory to begin understanding the smartphone. To be clear, my interest in the smartphone was not an interest in the device. It was an interest in the connections. Smartphones are more than wires and microchips. Smartphones are how social actors, technologies, app and device developers, and eCommerce are now connected—how we are all assembled together. It is by understanding this assemblage that scholarship can begin to understand the changes that are occurring, the way that smartphones are governing behaviour, and the agency smartphones are providing. This thesis was a theoretical investigation of smartphones, employing the constructs of the rhizomatic assemblage and the apparatus, that used autoethnographic vignettes to illustrate key points.

Autoethnography is a personal engagement with a phenomenon or cultural practice. One of the objectives of autoethnography, however, is to move beyond the personal into the social, and to allow the audience to experience the research topic. Achieving this goal was facilitated by the fact that smartphones are an assemblage. My experience with my smartphones incorporated me into the assemblage. Since all of the elements within an assemblage are connected, my experience with my smartphones connected me to all of the other elements. To say this another way, because my autoethnography investigated an assemblage, my personal experience was a social experience. The assemblage nature of the smartphone also held explanatory powers that dichotomous logic would not account for.

Smartphones are both subjectifying and a site of resistance. Cursory glances and academic investigation can point to examples of smartphones governing behaviour and smartphones providing resistance. Smartphones, in the Foucaultian (1995) sense, make the body docile. Smartphones are also tools of agency, or “opening liberties,” in people’s everyday life

and facilitate political and social organization. Smartphones perform all of these activities at once. As we rely on other theoretical frameworks, we struggle with the liberating and binding nature of smartphones. Understanding smartphones as an apparatus, as an assemblage, however, we are able to understand the rhizomatic and fluid nature of smartphones and their impact. As an apparatus, smartphones subjectify their users, controlling the thoughts and actions of people. There are, however, points of rupture at which the smartphone, as an assemblage, can create lines of flight, expand, and deterritorialize and reterritorialize, thus evolving as an assemblage. Social actors are a part of the smartphone assemblage. We are able, therefore, to create rupture and redefine the assemblage. Because the smartphone is a rhizomatic assemblage and apparatus, social actors are, at the same time, subjectified and afforded "opening liberties."

Within this thesis, I have begun to investigate a few liberating and subjectifying aspects of the smartphone. Reviewing the contribution this thesis makes, I cannot help but feel that there are too many questions left unanswered. Having scratched the surface, I have only uncovered a mass to study. Further research into the new virtual and mobile spatiality being formed by smartphones, the symbolic interaction between people and devices, how human interaction is changing, the bodily and emotional connection we have to our devices are but a few fields of investigation and reconceptualization. Smartphones *have* changed our social landscape. As these devices continue to evolve they will continue to alter our social world. It is imperative that academic investigation focus on these digital technologies, in whatever shape they take. By understanding the current iterations as an assemblage, we will be better suited to make sense of their meaning and impact.

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