

Locations of Practice:  
The Social Production of Locative Media

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## ABSTRACT

### **Locations of Practice: The Social Production of Locative Media**

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Locative media is a descriptive term that designates the artistic deployment of an assemblage of mobile and location aware technologies in the production of site-specific experiences or installations for public spaces. It has been described as a 'test-category' or 'mobile media movement' through which a wide gamut of individuals and collectives explore the possibilities of emerging mobile and location-based technologies. Underlying theoretical concerns have focused, for instance, on: reconfigurations of understandings and experiences of space; associations with psychogeography; potential for grass roots activist applications; and, the dependency on technological infrastructures associated with power and control.

A fundamental tension exists between the tools employed in production, those being commercial technologies, and the rhetoric of locative media practice, which posits these technologies as deployable beyond command and control infrastructures. Concealed within this tension is the manner in which locative media production

abuts the commercial uptake of mobile and location-based technologies, and the specific practices that support the appropriation of commercial channels for non-commercial means. This thesis engages with circumstances that enable (or not) locative media production. Locative media is framed as a consequence of social relations, and, as a field of cultural production set within contextual and contingent conditions that circumscribe practice.

In focusing on the conditions of production, that is, the processes through which locative media experiences are constructed, I provide site-specific interpretations through two case studies. The analysis elucidates what is not readily apparent in a final aesthetic experience and reveals the conditions and constraints of production, including the manner in which certain practices are legitimized, disavowed and contradicted. The practices to ensue from these particular sites of production are not representative of the entire field of locative media. These engagements articulate specific locations of practice; the physical and symbolic spaces that support the production of locative media, and it is within these spaces of production that practices emerge.

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## INTRODUCTION: LOCATING THE FIELD

In William Gibson's novel *Spook Country* (2006), Hollis Henry, former lead singer of early-nineties cult band The Curfew, accepts a freelance journalism assignment from a new, and not yet published journal, called *Node*. Henry's assignment focuses on a rather obscure form of art called 'locative' art. Following Henry's introduction to Alberto Corrales and Odile Richard, locative artist and curator respectively, Henry has her first 'locative' encounter; an installation depicting River Phoenix's death, situated outside the actual Sunset Boulevard club where the actor died. Though Henry experiences a handful of other projects, she can only vaguely articulate locative art as, 'artists doing things with longitude, latitude and the internet.' In fact, she finds the field rather futile, that is, until she encounters the elusive locative engineer, Bobby Chombo, an odd and reclusive character, whose workspace is chalked into a mysterious grid. As Henry discovers, Chombo's work extends into the secret realms of military intelligence and piracy, and Henry's researching of the field, ushers her into a reticent realm of espionage.

This project, while certainly removed from secret agents and pirates, shares characteristics with the fictional project of the fictional Hollis Henry. What follows is also an exploration of the locative realm. Just as Henry explored projects, technological infrastructures, and interacted with individuals within the field, this project is informed by such experiences and encounters. Certainly, far less glamorous and dangerous than Henry's adventure, the aim of my research was to permeate 'locative media', that is, to splinter its illusion of transparency. When I began this project in 2006, I was compelled by one simple question: What is locative media? This thesis is the locative media I discovered.

#### **SITUATING THE PROJECT**

The seedlings of my dissertation were planted in August 2005, when I interviewed for a temporary research position with Michael Longford, a professor in the Department of Design and Computation Arts at Concordia University. The post entailed assisting Longford in the compilation of a research report, which focused on the activities of a Canadian research network, called the Mobile Digital Commons Network (or MDCN). In turn, I was hired, and although the work itself was self-explanatory, MDCN's

research endeavours were beyond the scope of my previous and what was at the time current research interests. After a week of 'googling' nearly every technological term that cropped up in the report, I grasped that MDCN was conducting research around cell phones, satellites and short-range radio technology. When I was asked to extend my research contract, I did, and as a result, became increasingly fascinated with the research undertaken by MDCN, what I was slowly apprehending as locative media.

In spite of my employment with the Mobile Digital Commons Network, my indoctrination into the realm of locative media occurred through foundational locative media literature, meaning, my initial explorations into the field were supported by the interpretive work of others, and I leaned heavily on available material to construct an overview of the field.<sup>1</sup> At the outset of research, I was, for a period of time, fixated on determining a defining moment, or specific event, which could account for the evolution of locative media. This concern, I think, was an attempt to apprehend the field, and navigate existing literature, which posited two defining moments of emergence: Ben Russell's *Headmap Manifesto* (1999), which outlines the

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<sup>1</sup> Chapter 1 attends to this process in detail.

socio-technical potentials of location-aware devices, and is cited as precursor to locative media (Tuters, 2004a; 2004b; Lenz, 2005; Galloway, 2008); and 2) Karlis Kalnin's proposal of 'locative' (Tuters, 2004b; Hemment, 2004c; Russell, 2004b; Bleeker & Knowlton, 2006; Galloway & Ward, 2006; Galloway, 2008) at the May 2003 Art+Communication Festival (Tuters, 2004d). While these two moments inform my understanding of locative media, untangling the discourses and debates of the field occurred within my own disciplinary domain: communication studies. In turn, I charted two parallel trajectories of locative media: 1) technological; and, 2) social.

### **Technological Trajectory**

In the realm of the technological, locative media fits within the field of Ubicomp, or ubiquitous computing, also referred to as pervasive computing, a computational form that focuses on embedding unobtrusive computational devices within the environment, and, facilitating communication between these devices. Aligned with third generation (3G) computing, ubicomp was first articulated in 1991 by Mark Weiser and his research team at Xerox Palo Alto Research Center (PARC). Third generation (3G) accounts for the transition from large mainframe computers of the 1960s and

1970s, to the desktop computer of the 1980s and 1990s (Gow, 2005, p.1), and has since turned towards computing devices embedded in everyday objects and places. To be more specific, third generation computing has led to the development of intuitive, intelligent interfaces, and unobtrusive computing devices, and communication networks, which connect devices for anytime, anywhere data communication (Gow, 2005, p.2; Dourish, 2004, pp.28-30).

In locative media, information communication technologies and communication infrastructures work in tandem. By and large the kernel of locative media experiences are personal mobile devices, such as cellular phones and personal digital assistants (PDAs). Additionally, the electromagnetic spectrum, specifically, WiFi and Bluetooth, may be integrated, and also, the Global Positioning System (GPS). In what follows, I supply concise descriptions of these devices and infrastructures, in order that their functionalities are made more transparent.

### *Cellular phone*

Cellular (cell) phones and cell phone networks communicate via radio frequencies, a form of electromagnetic energy located on the electromagnetic spectrum. In cell systems,

geographical areas are divided into smaller areas or 'cells', and each cell (area) processes calls on different channels by communicating with a corresponding base station, which receives and emits radio waves. When a call is placed from a phone, the cell phone antenna sends a signal to its cell base station antenna, which then assigns an available radio frequency channel in response to the phone signal. Once a channel is assigned, modulated radio signals are simultaneously received and transmitted, enabling information to be carried between the cell phone and the base. As each base station has its own radio transmitters and receivers, and is interconnected with the public switched telephone network, the base station transfers the call to a switching center, and calls are transferred to a local telephone carrier or another cell phone. This process not only facilitates the handing-off of calls from one cell to another as a user moves through cells, it also enables frequency reuse across a city, thereby allowing millions of people to operate cell phones simultaneously (Brain, Tyson & Layton, 2000; Mobile Phones Glossary, 2007).

### *Personal Digital Assistant (PDA)*

A Personal Digital Assistant (PDA), often referred to as a handheld, is a portable computing device with information storage and retrieval capabilities. Its common use is for organizing personal data such as telephone numbers, appointments, and notes. A PDA is capable of transmitting and receiving data when equipped with a wireless module. An early example of a PDA, and what became a common device within locative media, is the Hewlett-Packard (HP) iPAQ.

### *Electro-magnetic Spectrum*

The electro-magnetic spectrum qualifies all of the frequencies of electromagnetic radiation. It is measured in terms of the frequency of its waves, which include (from increasing frequency and decreasing wavelength), radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X-rays and gamma rays. Therefore, the electromagnetic spectrum is an assemblage of waves, and each wave is determined by frequency. For example, the radio spectrum, the portion of the electromagnetic spectrum that carries radio waves, has a range from 9 kHz<sup>2</sup> up to 3000 GHz,<sup>3</sup> and the microwave, the Super High Frequency (SHF) band, ranges from 3 to 30 GHz. Frequency is measured by

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<sup>2</sup> Kilohertz: thousand cycles per second.

<sup>3</sup> Gigahertz: billion cycles per second.

enumerating waves that pass a particular point in a second. The more waves that pass a point, the length of each wave shortens. Nevertheless, the more waves, the higher the frequency, or, the greater the frequency, the shorter the wavelength.<sup>4</sup> This is why most communications systems have low frequencies; the lower the frequency, the better the penetration between physical obstacles, such as walls. Light for instance, which is also part of the electromagnetic spectrum, and is constituted as an assemblage of frequencies, is detectable by the eye, meaning that it has a very high frequency. However, light cannot pass through walls. This is why lower frequencies (i.e. less waves), such as those used by wireless communication devices, are advantageous for long-range communication (see: Sinclair, 1997; Shirky, 2005; Priest, 2005; Campbell, 2007; Gilbert & Haeberli, 2008)

### *WiFi: Wireless Fidelity*

WiFi is a limited-range wireless networking protocol based on the 802.11 family of standards. As such, it uses spectrum in the 2.4 GHz range to exchange data at broadband speeds. It is often implemented in a Wireless Local Area Network (WLAN); a local area network that uses

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<sup>4</sup> Wavelength and frequency are just alternate ways of expressing the same characteristic.

high frequency radio signals to transmit and receive data, voice, and video signals over distances of a few hundred feet.

### *Bluetooth*

Bluetooth is the commercial name for wireless technology developed by the Bluetooth Special Interest Group, a consortium of computer and telecommunications companies founded in 1998 by Ericsson, IBM, Intel, Nokia and Toshiba, which supports an open allocation of wireless, short-range transmission between personal mobile devices, such as PDAs, mobile phones and lap tops. The technology enables data connections between mobile devices without requiring line-of-sight physicality. Bluetooth transmits via frequencies in the range of 2.4 to 2.4835 GHz and achieves data rates of up to 721 kilobits per second, within 10 meters of proximity.

### *Global Positioning System (GPS)*

The global positioning system (GPS) is a worldwide satellite-based radio-navigation positioning system that was developed by the United States Department of Defense and is operated by the U.S. Air Force (Monmonier, 2002, p.12). This worldwide MEO (medium or middle, earth orbit)

satellite navigational system consists of a constellation of 24 earth-orbiting satellites, which are situated in six orbital planes, positioned 60 degrees apart and inclined 55 degrees above the equator. The constellation is distributed in a circular orbit with an altitude of 202,000 kilometers, and the entire system makes two complete orbits every 24 hours, tracing the same ground-track across the earth approximately every 12 hours (Monmonier, 2002, pp.13-14; Brain & Harris, 2006, p.1).

In order to calculate positioning, a GPS receiver requires: 1) the location of at least three satellites; and 2) the distance between its position on the ground and each of those satellites (Brain & Harris, 2006, p.2). This operation is based on the three-dimensional triangulation of intersecting circles (Monmonier 2002, p.12, p.174, p.181), and each circle expresses a range of locations equidistant from one of the satellites. It is the point of intersection shared by the circles that situates the location of a receiver. A standard GPS receiver places an individual on a map at any particular location, and traces a path as movement occurs. If the receiver remains 'on', it maintains constant communication with the GPS satellites tracking location changes. These satellites transmit

signals that determine, with great accuracy: distance traveled (odometer), length of travel (miles or kilometers), current speed (speedometer), and average speed. In commercial GPS this data is rendered as a 'bread crumb' trail or digital visualization of the distance traveled and current location on the map, and the estimated time of arrival at the destination (Brain & Holmes, 2006, pp.1-3). Generally, GPS is used in applications where precise positioning is necessary.

### **Social Trajectory**

Karlis Kalnins first proposed the term 'locative media' during the Art+Communication Festival, held May 16-17, 2003 in Riga, Latvia (Tuters, 2004d & 2005; see also: Hemment, 2004c; Russell, 2004b; Bleeker & Knowlton, 2006; Galloway & Ward, 2006; Galloway, 2008). The word 'locative' is derived from the locative noun case in the Latvian language, which indicates location, and vaguely corresponds to the English prepositions 'in', 'on', 'at', 'by'. The case declares a final location of action, or a time of the action (Kalnins, 2004; Galloway & Ward, 2006; Tuters & Varnelis, 2006; Tarkka, 2005). Reflecting on the inception of the term, Kalnins explained:

The moniker and the discourse of locative media arose ... as we studied the Latvian language which does include this locative case, as does Russian (as the prepositional case), Finnish, Sanskrit and Latin. (Kalnins, 2004)

Marc Tuters, who was also at the festival and worked with Kalnins on a handful of projects (i.e. GPster, Geograffiti), recounts how the term evolved as they brainstormed project ideas and tried "to reverse engineer the acronym 'WiFiLM' to describe a project for distributing location-based films over WiFi (2004e, ¶6). It was proposed as a "tentative category for new media art", which

sought to explore the intersection of the virtual space of the internet with the physical space of the urban (or non-urban) environment, that attempted to distinguished from the corporate discourse in location-based services (LBS). (2004d, ¶2)

The term itself was not employed, or circulated, until after the festival.

One month following the Art+Communication festival, the [Locative] Listserv was created, and Rasa Smite circulated the first message on June 25, 2003 (Smite, 2003, ¶2). In

it, Smite stipulates that the listserv was created to amass resources, such as "url's about wireless, gps and mapping projects", "texts, interviews, project ideas" that were "relevant to 'locative media'", and could potentially contribute to "developing ideas for and during the workshop" (Smite, 2003). The primary objective of the pending workshop, apart from a general exploration and cementing of locative media,<sup>5</sup> was to develop a framework or 'blueprint' (Smite, 2003, ¶4), for a large-scale locative media event/installation, as a part of the [RAM]5 workshop series, which was to be held in Riga in May 2004 (Locative Media, 2003, ¶1).

The Locative Media Workshop was held July 16-36, 2003 in Liepāja, Latvia. Organized by RIXC,<sup>6</sup> in collaboration with

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<sup>5</sup> As stated in the call for projects, the workshop would explore: [T]he radically disorganizing potential (social, spatial & temporal) of ad-hoc wireless networking, and use open-source mapping/positioning technologies to audiolize and visualize data in space (Smite, 2003, ¶3; Locative 2003, ¶2).

Initial thematic explorations, as outlined in the first listserv email, (Smite, 2003) included:

[M]apping from below; creating context for mobile/digital art; mobile ad hoc social networks as the next social revolution; text-messaging + hyper-coordination; technologies of co-operation amplification & the 'wireless commons' debate; netwar + the appropriation of surveillance technologies by tactical media; and the relation between new locative media and magic. (¶10; Locative Media 2003, ¶8)

<sup>6</sup> RIXC is a centre for new media/culture in Riga, Latvia. It is headed by Rasa and Raitis Smite, and as Tuters (2006) explains, "came to prominence within the highly circumscribed new media art world in the

GPster/Canada, the workshop, also referred to as "Longitude 21.00, Latitude 56.55", was sponsored by The Daniel Langlois Foundation for Arts, Science and Technology, the Latvian Cultural Capital Foundation and the Nordic Cultural Foundation (Locative Media, 2003). The workshop was hosted at the K@2 Culture and Information Centre, in Karosta,<sup>7</sup> a neighbourhood<sup>8</sup> in the north of Liepāja, in western Latvia by the Baltic Sea. The significance of hosting the workshop in Karosta was, as clarified by organizers, two fold:

[A]s an explicit acknowledgment of Virilio's idea that "one cannot understand the development of information tech, without understanding the evolution of military strategy"; and, as an attempt to locate the event outside of the global market from which these technologies have emerged (Smite, 2003, ¶9; Locative Media, 2003, ¶7).

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early nineties for their pioneering work with streaming media" (Tuters, 2006, ¶2). The organization was formerly known as Re-lab. RIXC is located in Riga, Latvia (see: RIXC, 2010).

<sup>7</sup> From Kara Osta meaning War Port in Latvian.

<sup>8</sup> Located 10km from the centre of Liepāja, Karosta occupies the northern part of the city. Built by order of the Russian Tzar Alexander III as a military port in the Baltic region. During the Soviet occupation of Latvia, Karosta was a military base, housing some 25,000 and was closed to civilians by a fortress wall that was built around the city. Following Latvian independence, the Soviet army evacuated Karosta in 1994, and the population dropped from 25000 to 6000. Much of Karosta is now in ruins, and many houses have been completely destroyed, along with military infrastructure. These consequences of the military exodus are mitigated by mass unemployment. (Smite, 2003, ¶11; Locative Media 2003, ¶9-10).

Tuters (2004d) describes Karosta as, a partially abandoned military installation on the coast in the Baltic Sea resembling 'the Zone' from Tarkovsky's *Stalker* (1979; see: Demidova, 1979). As a Co-organizer of the event, Tuters (2004c) described the workshop as having:

[B]rought together a diverse group of artists to contemplate, amongst other things, how to appropriate the American military technology of GPS in the ruins of this former military city, where former Soviet citizens carry "alien" passports (2004c, ¶2).

The workshop, as Drew Hemment later wrote, united "many early practitioners and inspired much of the current interest in locative media" (2004c, ¶5). Rhetorically, the workshop focused on appropriating and retooling surveillance and control infrastructures, and distributing these technologies beyond the 'command and control infrastructure' (Hemment, 2004b, ¶6). Unified by an interest in exploring the creative uses of mapping and positioning technologies, and the socio-cultural implications of connecting these with wireless networking technologies, workshop participants, as Tuters explains, "pondered techniques for the cultural appropriation of

military technology" through "mobile, location-aware networking devices/software" (2004d).

Locative media has been described as a 'test-category' (Albert, 2004b; Hemment, 2004b) or 'mobile media movement' (Tuters, 2005, ¶1) in which artists, theorists, activists, hackers, and software developers, in other words, a wide gamut of individuals, explore the possibilities of mobile location-based technologies in combination with active intervention (Tarkka, 2005; Hemment, 2004c; Varnelis & Friedberg, 2008; Russell, 2004d). Marc Tuters & Kazys Varnelis (2006) attributed the emergence of locative media as a response to "the decorporealized, screen-based experience of the net," and signified the desire to move beyond screen-based art (2006, p.1). The authors also suggest it to be, "a conceptual framework by which to examine the certain technological assemblages and their potential social impacts", and "strives, at least rhetorically, to reach a mass audience by attempting to engage consumer technologies and redirect their power" (Tuters & Varnelis, 2006, ¶13). Additional interpretations situate 'locative media' as: the "deployment of mobile, networked, location-aware computing devices, involving participants in mapping processes, social networking or

artistic interventions" (Atau & Gemeinboeck, 2006, p.1); a "descriptive term for information and devices that are associated with a physical location and/or with one another" (Shirvanee, 2006, p.1); and, finally, a "genre of projects and as a set of tools and technologies involving computing, mobile technologies, physicality, and location (Flanagan, 2007, p.1).

Drew Hemment (2004c) has characterized locative media, in part, as an artistic response to,

the technical possibilities of location-aware, networked media by asking what can be experienced now that could not be experienced before, in some cases producing more-or-less conventional artistic representations using location data, in others playing with the possibilities of the media itself. (Hemment, 2004c, ¶3)

Generally, locative media projects<sup>9</sup> explore and investigate emergent mobile technologies. In her consideration of the

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<sup>9</sup> There have also been attempts at categorizing forms of locative media. Lenz (2004) proposed a taxonomy through which he categorized locative projects as: art, storytelling, blogging, gaming, MoSoSo's (mobile social software), spatial annotation and geodrawing, and service. Similarly, Julian Bleecker and Jeff Knowlton (2006) devised a 'GPS enabled locative media' taxonomy, which included: geographic space, map hacking, experiential mapping, cartographic legibility, mixed reality, and hyphenation. And more recently, André Lemos qualified locative media

potential for locative media games to function as a tool for community mobilization and empowerment, Mary Flanagan (2006) writes:

Locative games offer an ambiguous game experience; in most, the players experience the game as at least a part of ordinary life as they often occur in recognizable places and situations. In many of these projects, the themes of mobility and play are touted as liberatory, as opportunities for players to interact on scales and in environments where play has never before been experienced.

(Flanagan, 2006, p.1)

Flanagan's observations qualify the popularity of game-based content as providing an experimental and experiential social function. There are however proponents of the field that are less supportive of playful, specifically game-based, projects. For instance, Tuters (2004b) proclaimed:

I am opposed to furthering locative based gaming (LBG) initiatives applying a simple gaming rule-based fantasy upon the fractal, chaotic and always relevant possibilities of the real world.

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projects into four main areas: "electronic urban annotations," "mapping and geo-localization," "location-based mobile games," and "flash and smart mobs (Lemos, 2010).

Do we wish to finally sterilize our lives into a  
hollywood-esque perfect movie? (§11)

For the most part, supporters of politically motivated works anticipate projects to engage in a critical dialogue with location-aware or location-based technologies. "Locative media", as Hemment observed, "is embedded not only in geographical space but political and cultural space as well" (§11). As a consequence, the redirection of surveillance and control technologies demands that one examine the extent to which locative media might challenge or be complicit within the operation of power (Hement, 2004a, p.4; 2004b, §11). In other words, the enabling technologies of locative media cannot simply be detached from larger infrastructures at will.

## **OUTLINE OF THESIS**

### **Problematic**

From initial research I surmised that 'locative media' utilizes wireless and location-aware communication technologies in the creation of location-based or site-specific experiences and installations, in which physical space is imbued with digital content, thereby augmenting spatial experientiality through technology (Lentz, 2004; Nisi, Oakley, & Haahr, 2008; Varnelis & Friedberg, 2008).

Underlying theoretical concerns have focused, for instance, on: the reconfiguration of understandings and experiences of space (Galloway & Ward, 2006; Hight, 2006; Sant, 2006; Sharpe, 2006; Chang & Goodman, 2006; Peacock, 2005; Diamantaki & Charitos, 2008; Nisi, Oakley, & Haahr, 2008; Galloway, 2008; Lemos, 2008 & 2010); its associations with psychogeography (Nova, 2003a, 2004b; 2005; Albert, 2004b; Rieser, 2005); its potential for grass roots activist applications (Hemment et al., 2006; Flanagan, 2007; Tol, 2008); and the implication of technological infrastructures associated with power and control (Hemment, 2004a, 2004b; Albert, 2004b; Tuters, 2004b; Lichty, 2004; Tarkka, 2005).

And yet, in spite of the breadth of literature, 'locative media' remained elusive; textual analysis alone proved insufficient in grasping its scope. Fortunately, I continued to work with the Mobile Digital Commons Network,<sup>10</sup> and additionally, I participated in Almost Perfect,<sup>11</sup> a locative media prototyping residency at the Banff New Media Institute. This fieldwork was fundamental in the shaping of the project; I was able to reevaluate the literature in light of my fieldwork experiences, and, after doing so, recognized a disjuncture between what I had initially read

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<sup>10</sup> This informs chapter 3.

<sup>11</sup> This informs chapter 4 and 5.

and what I eventually witnessed. I identified a fundamental tension between the tools employed in production, those being commercial technologies, and the early rhetoric of locative media practice, which posits these technologies as deployable beyond command and control infrastructures. Concealed within this tension is the manner in which locative media production abuts the commercial uptake of mobile and location-based technologies, and the specific practices that support the appropriation of commercial channels for non-commercial means. I wanted to identify the circumstances that enabled (or not) locative media production. The aim of this thesis therefore, is not to resolve debates. Rather, it contributes to the ongoing critical conceptualization of locative media and situates analysis towards practices and processes of production.

### **Theoretical and Methodological Framework**

Within this thesis, locative media is defined as a descriptive term that designates the artistic deployment of an assemblage of mobile and location aware technologies in the production of site-specific experiences or installations for public spaces. Yet, its constitution is not only technological. Locative media is a consequence of social relations. It is a field of cultural production set

within contextual and contingent conditions that circumscribe practice. Such an interpretive logic circumvents final products or projects, and centers instead on exhuming processes and practices that are dissolved into 'locative media'. Analysis elucidates what is not readily apparent in a final product or aesthetic experience; the conditions and constraints of production, specifically the manner in which certain practices and discourses are validated, legitimized, disavowed and contradicted.

#### *Locations of Practice*

In *From Medium to Social Practice*, Raymond Williams (1977) outlines a shift in the use of the word 'medium' to 'practice'. Situating his analysis in the context of art history, Williams implements 'practice' to encompass those technological developments that compel artists to develop new skills and techniques. For Williams, the consequences of technological change include new material forms and relationships in the process of production (1977 153). As Williams explains,

A new technique has often been seen ... as a new relationship, or as depending on a new relationship. Thus what had been isolated as a

medium, in many ways rightly as a way of emphasizing the material production, which any art must be, came to be seen, inevitably, as social practice. (p.163)

The process of producing locative media experiences, which involves the application and manipulation of changing technologies and relationships, is a practice. In following Williams (1973), I look for the conditions of locative practice (p.16).

This thesis supports Minna Tarkka's (2004) call for an analysis of locative media practices, specifically, the "mundane and minor – through everyday activities of programmers, designers, and developers" (p.3). A focus on locative practices, as Tarkka explains, takes into account "the tools and discourses of the work process – but also the various kinds of invisible work and immaterial labour that are involved in the activity of production", and reveals how "new forms of the social are being thought up and put into action" (p.3). As opposed to examining practices in general, I provide site-specific interpretations of locative media production through two case studies. The practices to ensue from these particular sites of production, which are in effect translations of

social relations, are not representative of the entire field of locative media. Instead, these site-specific engagements articulate specific locations of practice; the physical and symbolic spaces that support the production of locative media. It is within these spaces of production that particular practices emerge, and these practices are not necessarily transferable or reproducible. Instead, practices are contingent on historical, social, cultural, political and technological circumstances, which enable and constrain processes and practices of production.

The locations of (locative media) practice are institutional. That is, locative media production in its various guises has been nurtured institutionally, through government or private funding, within art centers, research and academic institutions. In turn, these locations were symbolic battlegrounds through which locative media, as an emerging field, was defined and socially reproduced, through "the development and transmission of knowledge, social values, and cultural practices and the construction of individual and collective identities" (Bezanson & Luxton, 2006, p.3). Despite initial ties to a handful of individuals, locative media was engendered through a dynamic process, and by numerous and varying actors and

institutions. Therefore, locative media is "the product of specific historical practices on the part of identifiable social groups in given conditions" (Wolff, 1993, p.49). It bears the imprint of "ideas, values and conditions of existence of those groups, and their representatives" (Wolff, 1993, p. 49).

### **Scope of Analysis**

The three analytical constituents to my dissertation are: 1) the field of locative media; 2) two locative media case studies, and; 3) emergent research methods.

#### *The Field of Locative Media*

The first portion of the work traces the emergence of the field of locative media, and identifies what Lisa Gitelman (2006) describes as, "within the what, who, how, and why" (p.29). Chapter one provides an annotated timeline, which plots the field from September 1999 to November 2006. The timeline, far from exhaustive, book ends the Canadian locative media case studies, as a means of situating the locations of Canadian production in relation to the larger field. Therefore, apart from offering a general scope of locative media, the timeline is in service to the case

studies. It establishes a frame of reference for the site-specific examples, which are the focus of chapters 3 and 4. The second chapter, which constitutes a genealogical analysis, interrogates the exclusivity of specific critical discourses of locative media and unravels biases and inadequacies in the way that psychogeography, as a theoretical paradigm, has shaped the field. I attend to psychogeography because of its centrality in structuring debates, practices, and discourses. In tracing its coalescence within the field, I attend to the discursive invisibilities inscribed by its adoption. The objective of this frame of analysis is to call into question the manner in which psychogeography, as a model for spatial intervention, is perpetuated as intrinsic to the field. I begin by broadly outlining initial enthusiasm and applications of psychogeography, followed by an overview of criticisms. Then, I refine my analysis and focus on a discussion thread in the [Locative] Media Listserv, which erupted following the publication of an article, by Coco Fusco (2004a), critiquing the manner in which mapping practices within new media art often ignore categories of embodied difference. This chapter works towards unraveling the affinity between psychogeography and locative media, and situates the relationship as a discursive construct;

that is, the location of psychogeographic practices and the capacity for these practices to be reproduced, are located in discourse.

### *Locative Media Case Studies*

The second component of this thesis consists of two case studies. The first, chapter three, attends to the collaborative research practices engendered by the Mobile Digital Commons Network (MDCN), a Canadian national research network whose research culminated around location-based experiences. The chapter focuses on distilling a critique (Hanke, 2009), implicating the network in 'academic laissez-faire', a form of knowledge production willingly subservient to the neoliberal economy (p.555). MDCN is passed off as a highly funded project focused on emerging technologies; a cog in the neo-liberal wheel propelled by the autonomous power of capitalism and new communication and information technologies. I delineate the infrastructure and constraints that enabled the formation and sustenance of MDCN, and tease out the contradictions between the representation of MDCN and the practices carried out by the network. This chapter engages in a dialogue with this critique to understand the symbolic and material frictions inherent within processes of production

both in terms of emerging technologies and academic research formations.

The second case study, chapter four, focuses on *Almost Perfect*, a locative media prototyping residency, held at the Banff New Media Institute, from November 5 to December 3, 2006, and was sponsored by Hewlett-Packard. This chapter investigates the productive practices associated with Hewlett-Packard's Mediascape toolkit, a particular model of locative media production, and delineates the experiences and productive efforts of residents in the creation of a Mediascape experience. In turn, analysis centers on the governing productive practices of the residency, in which participation and agency were neutralized, precipitating a participation-as-labour ethos. In highlighting the antagonisms of amalgamating disparate models of production within a restricted location of practice, this chapter echoes Saul Albert's (2005) call for a critical revision and assessment of the political economy of exchange in 'participative' artistic formations.

A case study approach was an appropriate research method for this project, given that case studies are emergent, that is, responsive to situations in which the research is

done. "A case study", as Robert Stake (2000) explains, "is not a methodological choice but a choice of what is to be studied. By whatever methods we choose to study the case" (p.435). Stake identifies three types of case studies: 1) the intrinsic case study, which is undertaken by the researcher because it is of particular interest; 2) the instrumental case study, which is chosen not because of a specific interest but because it assists to advance the understanding of an external interest; and, 3) a collective case study, which is selected to better understanding or theorizing of a larger collective case study (p.437).

First and foremost, the case studies were implemented as a means to integrate lived experience with textual analysis. My formal research began at Almost Perfect. I chose this site initially out of interest. However, in order to expand the scope of my research, but also to situate it within a particular context, I chose the Mobile Digital Commons Network as a secondary case study in order to advance the institutionalized context of locative media production and situate analysis within a Canadian context. In turn, the case studies illuminate the institutionalization of locative media in Canada. The context of the research is consequential because Canadian institutions, namely the

Daniel Langlois Foundation and the Banff New Media Institute were considerably generous in their support of locative media, yet much of the action – projects and events – transpired within a European context. I purposely contained the analysis within a temporal timeline for two specific reasons. First, I wanted to reinforce the site-specificity of research and development undertaken and endorsed by and within Canadian public institutions, which include government, post-secondary and the arts. Almost Perfect and MDCN, while different, also share overlaps that are indicative of institutional alliances, funding programs, research and development initiatives, and new media arts in Canada, beginning in the first few years of the aughts. Further, analysis is particular to the temporality of technological development, that being prior to the proliferation of smart phones. The tools employed in production certainly shaped productive practices and processes, and both case studies share similarities in the manner that creative intent was constrained by technological capabilities. The case studies do not stand in for 'locative media'. I approached both as site-specific instantiations of locative media production, as a means of assessing the manner in which locative media is made and remade within particular social and institutional contexts.

### *Emergent Research Methods*

To support my project, I chose a multi-method research model (Shaffir et al., 1980), employing both traditional and experimental methods of data-gathering devices and hypothesis. Traditional methods included document analysis, participant observation, and interviews, and, the experimental method comprised a choreographed locative media walk. This method, or practice of location, was engendered within a particular production space, and reflects my situatedness within the chain of production, and the manner in which I negotiated and navigated my position within a particular location.

Chapter one, in addition to offering an annotated timeline, details the methodological obstacles associated with the researching of emergent media, particularly when the bulk of material exists online. Much of the chapter recounts that experience, and frames research practices as archival-research online, which accentuates the manner in which archival research is performed online. This chapter addresses the necessary negotiations demanded from a researcher as she explores an emerging field as it emerges, and also, the challenges associated with transposing

traditional research skills and techniques from the archive to the internet.

Chapter five, which is also the second part to the Almost Perfect case study, engages with the experimental research methods I employed, notably, a locative media choreographed walk and installation, what I deem an out-of-the-black-box engagement with technology-in-practice. This chapter addresses the challenges associated with revising one's research plan in the midst of conducting fieldwork, and the manner in which attentiveness to one's research location can initiate novel means of output and offer site-specific interventions in the research space.

My capacity to go-with-the-locational-flow, that is, to modify my methodological toolkit according to context demanded an "'epistemological break' with the 'common sense'" (Sterne, 2003, p.369) of locative media. In part, such a breach demanded a measure of reflexivity on my part as researcher, namely, attentiveness to the manner in which my social and cultural locations necessarily informed what I said, how I said it, and who was able to hear and respond. In following Jeff Titon Todd (1985), my role as researcher was mediated by issues of stance and identity: 1) stance is the role assigned to me by fellow informants

(1985, p.18); and 2) identity is the role I assign myself, that is, who I think I am (Titon, 1985, p.19). As I detail at length, it was customary for me to assume multiple roles within my fieldwork. My place within this thesis is an oscillation and a careful negotiation between my insider perspective as participant in a research network and residency, and my critical distance as a researcher conducting fieldwork. In an effort to lend coherence to these positions, I assumed the role of the Curious Feminist; an inquisitive figure attentive to everyday social and political life, particularly those issues neglected or dismissed by the field, and overlooked by feminists themselves (see: Sarikakis & Shade, 2008). Adopting this role was a deliberate act, aimed at initiating a dialogue with a larger feminist project reflected in-situated knowledge/knowing (Haraway, 1991; Harding, 1991; Rose, 1994 & 1997), and the politics of enunciation (Braidotti, 1994).

## CHAPTER 1: LOCATING THE ARCHIVE

### Methodological Issues in the Archival

#### Construction of Locative Media

The bulk of research informing this thesis was obtained and generated through extensive fieldwork. However, the 'historical' component of the research process occurred solely online; material pertaining to locative media exists almost entirely online.<sup>12</sup> For this reason, the internet served as a source for archival material. "An archive", as Geoff Cox articulates, "constitutes a repository or ordered system from which history is written, and meanings produced" (Cox, 2007, ¶2). Archives are fundamentally concerned with collection, management and preservation of artifacts. These repositories afford us a glimpse of a past, and formulate a hypothesis of a future, and in doing so, position the present (see: Breakell & Worseley, 2007, p.175).

In delineating the utilization of the internet as archive, or more specifically, in describing the process of archival-research online,<sup>13</sup> this chapter addresses the

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<sup>12</sup> This is still the case.

<sup>13</sup> I deliberately use 'archival-research online' to accentuate the manner in which archival research is *performed* online.

volatility associated with tracing the emergence of new media practices, a process contingent on efforts of preservation on my part, through an accumulation and organization of data. The complexities associated with the collection, management and conservation of digital data and documentation,<sup>14</sup> are addressed from the position of researcher-archivist, a figure prone to 'archival impulses' (Foster, 2006, p.144). This chapter concludes with a locative media timeline, which is not a definitive or exhaustive trajectory, rather a method to begin to trace the emergence of the field. The timeline is a prelude to the genealogical analysis covered in the subsequent chapter.

#### **RESEARCHER-ARCHIVIST**

In "The User-Archivist and Collective (In)Voluntary Memory: Read/Writing the *Networked Digital Archive*", James MacDevitt (2010) demonstrates, I think, the manner in which the term 'archive' has become synonymous with a myriad of online data banks, and in turn, reveals how material changes in the archive necessarily affect material

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<sup>14</sup> Although my research and expertise circumvents the complexities associated with the exhibition of projects, I recognize the immediacy of the issues, particularly in terms of project preservation, which isn't simply concerned with remounting works, but also the difficulties associated with showing works when corresponding technological platforms become obsolete.

practices. According to MacDevitt, "the age of the *Networked Digital Archive*", "the notion of the user can, and often does, take on new associative meanings" (2010, p.109). For MacDevitt, this transpires into the newly constituted user-archivist, a figure folded together from two archival identities; the user and the archivist (p.115). The user-archivist interacts with the Networked Digital Archive – a collection of artifacts and information resources made available on the internet, and accessible through a website interface. "From the perspective of the *User-Archivist*", MacDevitt writes, "the *Networked Digital Archive* is a site of activity, of coming into presence, not a locus of preservation" (MacDevitt, 2010, pp.117-119). Therefore, in certain instances, the user-archivist experiences/reads the data directly, and in others, she will "(re)experience/(re)read it as it is manifested in *aggregated data representations*" (MacDevitt, 2010, p.118; see also: Chan, 2007, p.5). The consequence of this, "mediated legibility", is "that the creation of meta/data for aggregation has as much effect on *aggregated data representations* as computational algorithms" (p.118). In other words, the aggregate behaviour of visitors, which is compiled by user tracking, is then examined and translated into computational adjustments at the user end. Within this

configuration, the user-archivist “does not just consume the met/data of the Archive, but produces<sup>15</sup> them as well” (MacDevitt, 2010, p. 115).

MacDevitt’s text offers a sensible venue for my work to intervene. Similar to what is summarized above, my research process grappled with the transformations of archival practices, and the positionalities engendered by these changes. Whereas MacDevitt focused on the archive as noun, as a collection of historical documents or records, and, as a place where such documents or records are kept, my analysis concentrates on the archive as verb, to store or transfer data. In MacDevitt’s work, the archive, albeit immaterial or virtual, is actualized (i.e. real), and in mine, the archive exists as a potential that has yet to be activated. It is for these differences that I adopt and reconfigure user-archivist to researcher-archivist.

The researcher-archivist simultaneously archives while she conducts research, and her productive efforts materialize the archive itself. In investigating and studying materials

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<sup>15</sup> Although MacDevitt focuses on the potential for the user-archivist to resist forms of domination within power structures, he is also attune to the fact that the user-archivist is a position of privilege.

and online,<sup>16</sup> the researcher-archivist assesses, collects and synthesizes material, and then organizes it; she performs first, the actions associated with a researcher, and second, those attached to an archivist.<sup>17</sup>

### **Fever for an (Archival) Impulse**

Archival-research practices centered on the question: how is one to trace or archive the past while identifying one's research needs in the future? For Brügger (2008), when a media researcher "sets out to archive a website", she must take into consideration the following: "first, that the processes of research and archiving are closely connected, and second, that archiving [a website] has to be accompanied by methodological deliberations" (p.171). "In other words", as Brügger clarifies, "[w]hat one wishes to examine in a later analysis should to a certain degree

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<sup>16</sup> Arguably, research online, which is conducted externally from institutional parameters, disentangles the research process from disciplinary protocols. Yet, the allure of a utopian rhetoric of the internet, which posits the world wide web, or more appropriately the 'information highway', as affording users with 'information at your fingertips', disregards the fact that the internet, is regulated by protocols that are determined by a relatively small and select group of experts (Galloway, 2004; see also: Kittler, 1995; Lovink, 2002; Tedre et al., 2002). In a similar capacity, archives and records, as Cook & Schwartz (2002) write, "always reflect power relationships" of "their creation and use by their makers and in their appraisal and management by archivists" (p.172). Additionally, there is the issue of web page removals, which is a marker of power, especially given Derrida's decree that, "what is no longer archived [in the same way] is no longer lived [in the same way]" (p.18).

<sup>17</sup>'Organizing' adheres to provenance or a 'respect des fonds', which necessitates retaining copies of (online) artifacts in the format originally produced by their creator.

already be anticipated at the time of archiving" (Brügger, 2008, p.171). Brügger's commentary hints at the performative dimension involved in archival construction. The researcher-archivist must always already be mindful to future research necessities. In archiving information, she is necessarily representing existing material in accordance to an existing (original) model (i.e. the Archive). It is through the repetition of specific practices that the researcher-archivist recreates a copy of the original. She is continuously attentive to the ways in which "presence is shaped by absences, every present moment is haunted and contaminated by the past and the future" (Gibson-Graham, 2006, p.238). The research-archivist therefore, is haunted by the spectre of 'the Archive'. Possessed by this apparition - or apparatus - of representation, she works impulsively to collect, yet does so analytically; she is haunted not by origins, rather, by departures.

It seems logical then, that in the absence of 'the Archive', the researcher-archivist be stricken with the infamous archive fever, which for Derrida (1996)

is to have a compulsive, repetitive, and nostalgic desire for the archive, an irrepressible desire to return to the origin, a

homesickness, a nostalgia for the return to the most archaic place of absolute commencement. (p. 91)

There were moments during the archival portion of research in which I felt feverish, but only as a result of countless hours in front of the computer screen. In fact, I became increasingly less interested in, and more immune to, "the desire to recover moments of inception", or "to find and possess all sorts of beginnings" (Steedman, 2002, p.5). Instead, my practices were swayed by an archival impulse, which, according to Hal Foster (2006) is,

as much preproduction as it is postproduction: concerned less with absolute origins than with obscure traces [...] drawn to unfulfilled beginnings or incomplete projects [...]that might offer points of departure again. (p.144)

The researcher-archivist collects impulsively yet not without forethought. She is always attentive, focused, and critical.

#### **"404 PAGE NOT FOUND"**

Niels Brügger (2008) situates online historiography, specifically website archiving, as an intersection between media history and internet history. "In this discipline",

Brügger explains, "the individual website is regarded as the unifying entity of the historical analysis rather than the Internet or the Web" (2008, p.155). However, in my particular case, archival-research online focused entirely on material pertaining to locative media. The 'research' process comprised an assessment and synthesis of websites, blogs, and listservs, all of which supplied a vast amount of material, which consisted of articles, bibliographies, project documentation, policy reports, correspondences, festival and conference schedules and reports, meeting minutes, and visual documentation. Research transpired within what Schneider & Foot (2006) describe as a 'web sphere'; "a set of dynamically defined digital resources spanning multiple Web sites deemed relevant or related to a central event, concept, or theme" (pp.20-21, pp.27-35).

Preliminary research afforded me with a sense of key events, projects and texts, yet did not convey the extent of data available. "Digital documents", according to Eric Ketelaar (2003), "are fluid, open and dynamic; because of links with other texts a document is connected with others" (¶16). The digital certainly imparts new possibilities, however, as Peter Lyman soberly observes, "the boundaries [of the digital object] are ambiguous (2002, ¶11; see also:

Ernst, 2006). For instance, in an archive, one is given access to a particular fond, which is organized according to archiving practices and standards, and is tended to by an archivist or librarian. Material has been organized and fixed, and enumerated. Whether it requires one week or one year for a researcher to work through a fond is negligible; archived data is predetermined and constant from the outset. This is not to suggest that an archive is ever closed.<sup>18</sup> Conversely, this is to allude to the ephemeral mode of archival work online.

The figure of the research-archivist was a partial response to my rabid frustrations over indeterminate data, and my ensuing spiral into information glut. More specifically however, the research-archivist was engendered through error, namely "404 Page Not Found". Lyman (2002) describes the situation accordingly:

Web pages disappear every day as their author's revise them or servers are taken out of service, but users become aware of this only when they enter a Universal Resource Locator (URL) and receive a "404 Page Not Found" message. (¶2)

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<sup>18</sup> In fact, for Derrida (1996), "the archivist produces more archive, and that is why the archive is never closed" (p.68)

Given that the research process spanned nearly four years, which is by no means an exceptional statistic for doctoral research, and the fact that much of my research was conducted online, which is neither a novelty given a propensity of internet research, I was blinded by convention. I should have been more attuned to the volatility of internet sources. Instead, I conflated immediacy and permanence, meaning, I overlooked the possibility that web sources could simply disappear. For instance, when I began research, the Locative Media Lab (2004) and the [Locative] Listserv archives (2003; 2004; 2005) were both available online and provided crucial material. Even though the listserv has ceased operation towards the end of 2005, in August 2009, listserv archives were still available online. Then, a few months later, upon visiting the site, I received a "404 Page Not Found" message. It was this message that led me to take stalk of my sources and begin extensive archiving, spurred by a "crisis of preservation" (Hand, 2008, p.132). The archival portion of the archival-research online process entailed archiving material through Zotero.

## **Zotero**

Developed at the Centre for History and New Media at George Mason University, Zotero (2010) is a free, open-source program that can be downloaded as a Firefox browser extension, and is compatible with Windows, Mac, or Linux systems. The program is a desktop application that 'lives' or is embedded in one's internet browser. As a research tool, Zotero aids in the collection and organization of research sources, and in addition, allows researchers to share information, such as citations, documents or webpages, in a style similar to that of iTunes. Launched in October 2006, the program has received over 1 million downloads. Needless to say, it is a popular tool used by individual researchers and advocated by educational institutions. For instance, the online research guide available at the Massachusetts Institute of Technology's (MIT) library website recommends the software, and provides a summary of its utility, including the following (MIT, 2010):

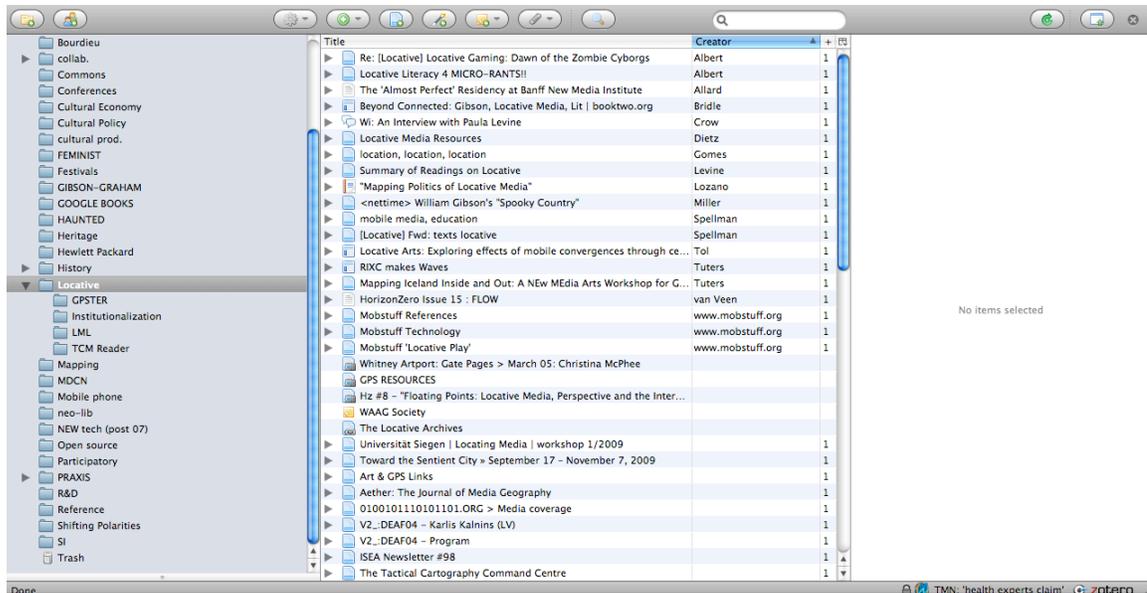
- Annotate and organize research results, including video.
- Save information about a reference, including author, title, and other publication information.
- Create libraries and save searches, and share collections with other people.

- Attach files, links, notes, and PDFs to records.
- Store a screenshot of a web page.
- Export information as formatted citations in word processing programs (Word, Google Docs).
- Tag and sort records and perform advanced searches.
- View records in personal collection when offline.
- Cite records in any language.

Evidently, there are numerous advantages in using Zotero as a research management tool. As proven by personal experience, online and 'live' versions were susceptible to dissipation into the ether.<sup>19</sup> It was necessary therefore, for the sake of my current research and future work, to ensure material is procurable, independently of the internet.

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<sup>19</sup> In fact, my archival copies of the Locative Media Lab website and the *[Locative] Listserv* archive, which were already offline by the time I embarked on this archival task, were extracted from the Internet Archive's searchable database, 'Wayback Machine'.



**Figure 1.** Zotero screen shot

## **TIMELINE**

In as much as Zotero proved to be an excellent tool for archiving, for instance it enabled me to save material in a variety of formats, and establish a rudimentary means of organizing data, the program, like any archive, simply stored the material. Data was not concretized. Therefore, to make the material discernible I embarked on the construction of a timeline, the foundations of which, that is, the informational building blocks, were gathered from new media art and technology blogs, project websites, the Locative Media, *CRUMB*, and *Nettime* listservs, and finally, locative media literature.

## **Websites**

The locative media community is fundamentally web based and supported by websites and blogs, which publicize various locative media projects and general happenings. Project specific sites focus on publicity, yet also supply extensive documentation such as photographic and video evidence, general reports, technical specifications, names of collaborators and institutional affiliations, financial support information, venues of exhibition, press releases, and research publications. For example, although Blast Theory has been contested<sup>20</sup> as 'locative media' (see: Russell, 2004a), part of the group's celebrity and prominence can be attributed, I think, to its online presence. Every Blast Theory project has a website that provides a detailed description of the project and extensive documentation. And every project website links to the Blast Theory homepage, which is frequently updated.

## **Blogs**

Blogs such as *Pasta & Vinegar*, *We Make Money Not Art*, and *Networked Performance* were integral as research sources. These blogs provided commentaries, summaries of projects

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<sup>20</sup> Blast Theory, according to Russell (2004a), "are a perfect example of some of the most banal traits of tech/location-based games" (¶1).

and events, and links to primary sources, and are recognized as valuable sources of information, not only concerning specific projects, but also in terms of providing interviews with artists and groups, reviews of print sources, and up-to-date information concerning exhibits, symposiums and conferences. In turn, these blogs provide instantaneous access to those interested in locative media, albeit removed from the live context, yet enable one to be 'in the know' so to speak. As a researcher on a very limited budget, I was able to survey the field and gain a sense of happenings without having to travel internationally.

### **Listservs**

Ethnographic research conducted through listservs can present a researcher with an ethical dilemma, often articulated in terms of a researcher's positioning as covert or overt in relation to the particular group or community that is followed. If access is not restricted, then it is public (Langer and Backman, 2005) meaning that in CMC's one should disclose identity and intentions, whereas in non-restricted environments, one's identity and research agenda may remain undisclosed. My interactions with the [Locative] Listserv and *CRUMB*, were documentary,

as opposed to participant observation. "The mode of communication on listservs" as Katherine Clegg Smith (2004) explicates, "is established for generalized distribution of messages to participants who may or may not be present" (p.226). Within this configuration, as Clegg Smith continues:

[O]ne is 'speaking into cyberspace' to an invisible audience of a potentially indeterminate size. The researcher is not 'seen' to be intruding, and thus may be less imposing on the interaction that is occurring (Clegg Smith, 2004, p.226)

I was not a subscriber to either community and both message archives were open, or public. In fact, the [Locative] Listserv had ceased operation in 2005, and with *CRUMB*, I studied only locative media threads, predominantly from April 2004, as locative media was the special topic for that month. In other words, my interactions with the listserv were comparable to working with transcriptions.

### **Literature**

My research began with a review locative media literature, which I found through preliminary web searches and by cross-referencing bibliographies (Albert, 2004b; Fusco,

2004a; Hemment, 2004a, 2004c; Holmes, 2004a; Kalnins, 2004; Lenz, 2004; Lichty, 2004; Nova, 2004; Pope, 2005; Russell, 1999, 2004a, 2004d; Tarkka, 2005; Tuters, 2004a, 2005; Tuters & Varnelis). These texts, recount, for the most part, subjective appraisals of an emerging field. Locative media emerged within an insular milieu, and numerous individuals active in its promotion, were active in its initiation. In as much as the literature accentuated the cornerstones of locative media, including the theoretical and practical impulses of early practitioners, it was limited in scope. Because of these limitations, I focused largely on the other online sources for historical references.

#### **TIMELINE AS METHODOLOGY**

As a methodological tool, the construction of the timeline was an effort in data organization. It was an intricate and involved process and demanded that I synthesize a mass of data into a manageable form. For practical reasons, I organized the material chronologically. First, as far as I am aware, a timeline of locative media does not exist. Second, arranging the material in a standard and conventional manner would enable others to add to it with ease. In part, this responds to what Geoff Cox (2007)

identifies as a challenge associated with constructing an archive: "to construct one that remains active in the way that meanings are able to continually produced" (p.3). Despite the fact that the timeline was initiated due to personal research needs, in its current form, I view it as a work-in-progress, and others can add to, or reconfigure it.<sup>21</sup> It also served as a means to assess how to proceed with the work. Echoing this sentiment, Joey Sprague (2005) asserts: "Reflecting on methodology – on how we do what we do – opens up possibilities and exposes choices" (p. 5). In following Sprague, it became increasingly evident that in as much as the timeline revealed, it also concealed. In this regard, the timeline transmits an 'illusion of transparency' (Lefebvre, 1991, p.27). The effect of this, I think, is that it becomes a *trompe l'oeil*, in which its perceivable form, that being concise and intelligible data, stands in for the field, as though the timeline *is* locative media. In turn, the field appears to be organized and straightforward and more importantly, accessible, as though what one sees is what one gets. The illusion of the timeline relies in the transparency itself. In an effort to rectify these issues, in the preceding chapter, I attend to

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<sup>21</sup> The timeline as presented within this thesis is a provisional archive of locative media. In order to nurture its participatory potential, I anticipate reworking the data for online publication, through which others can access and contribute to the ongoing archival process.

the emergence of locative media through a genealogical lens.<sup>22</sup>

## ANNOTATED LOCATIVE MEDIA TIMELINE, 1999-2007

### SEPTEMBER 1999

#### Headmap Manifesto

Authored by Ben Russell, *Headmap Manifesto* has been cited as an antecedent to locative media (Tuters, 2004a; 2004b; Lenz, 2004; Galloway, 2008). The document, according to its author, is an extensive "sequence of text fragments dealing with the social and cultural implications of location-aware devices" (Russell, 1999, p.1). It was originally published on Russell's site, headmap.org, and although the site is no

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<sup>22</sup> An archaeology in the Foucaultian sense, the timeline was a synchronic method of analysis. By situating events in the formation of the field of locative media, it provides a general overview of the field into which MDCN and Almost Perfect were inscribed. The timeline therefore, constitutes a methodological framework in assessing the field of locative media, however it is also served as the source material for genealogical analysis. In following Foucault (1983), genealogy is a diachronic method aimed at defining a target and aim (Foucault, 1983). For Ann Vickery (2000), genealogy draws attention to, the vicissitude of cultural activity by foregrounding the exchanges of this activity rather than the objects that are part of it. It would politicize the structures that frame a text's production, reproduction, and reception. (Vickery, 2000, p. 14)

As a method of inquiry, genealogy signals an enterprise of critical knowledge. A genealogical method traces the emergences of discourses and delineates the manner in which these discursive events constitute knowledges and practices. In turn, an archaeological-genealogical method, as Mark Poster explains (1994), is best designed to explore the interplay between discourse and practice.

longer online, the manifesto can be accessed through secondary websites.

### **Trace**

Trace was a 'memorial environmental sound installation', produced by Terri Rueb and with assistance from the Banff New Media Institute (BNMI). The installation was created for a network of hiking trails near the Burgess Shale fossil beds in Yoho National Park, British Columbia. Participants were provided with a knapsack, equipped with a small computer, headphones, and a global positioning satellite (GPS) receiver. The computer and receiver worked in conjunction with a digital database of recordings, and as participants walked the demarcated trails, sound recordings commemorating personal loss were triggered (Rueb, 2004).

## **FEBRUARY 2000**

### **GPS Drawing**

Jeremy Wood utilized GPS data to create 'line drawings', in the form of animals, symbols and words. The drawings, generated by Wood's movements through physical environments, including land, water and air, and with a GPS device, were formed from a sequence of plotted movements, similar to a connect the dots exercise (Hemment, 2004a, ¶5;

Hight & van Dijk, 2006, ¶3; see GPS Drawing, 2010).

## **MAY 2000**

### **Selective Availability**

By April 1995, NAVSTAR<sup>23</sup> was in full operational capability with a complete constellation of 24 satellites in orbit. The following year, President Bill Clinton approved a national policy on the future management and use of the U.S. Global Positioning System, and GPS was declared to be a dual-system, serving both military and civilian requirements. This latter group however, was granted selective access. Then, at midnight on May 1, selective availability was disabled and the precision of civilian GPS improved from 300 meters (roughly 1000 feet) to 20 meters (roughly 65 feet).

### **Geocaching**

The first 'hide and seek' activity using a GPS receiver took place on May 3, 2000, and was initiated by Dave Ulmer in Oregon. Ulmer, who posted the location on the Usenet newsgroup sci.geo.satellite-nav, identified the coordinates as N 45 17.460 W122 24.800, and described the cache as, "a black plastic bucket buried most of the way in the ground"

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<sup>23</sup> Navigation Signal Timing and Ranging Global Positioning System

(Ulmer, 2000). As noted in Ulmer's post, the bucket contained, "Delorme Topo USA software, videos, books, food, money, and a slingshot!" (Ulmer, 2000). Since then, numerous international geocaching associations have formed.

## **JULY 2001**

### **Private Reveries, Public Spaces**

Curated by Giles Lane and Alice Angus, *Private Reveries, Public Spaces*, was based on the July 2001 commissioning of projects from fourteen artists and designers. The call for projects stipulated that proposals were to address the theme of converging media technologies, such as wireless and mobile communications, with a focus on the social and cultural implications of the shifting relationship between private and public spaces. The selected projects were then conceptualized into online prototypes (Proboscis, 2002). The initiative was produced by Proboscis<sup>24</sup> (2010a), and funded by the Daniel Langlois Foundation, and the Arts Council of England New Media Projects Fund (Proboscis, 2010b).

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<sup>24</sup> Proboscis, a UK based artist-run and led studio, is also responsible for the Urban Tapestries project.

## AUGUST 2001

**Acoustic Space Lab Symposium** (August 4-12, Irbene, Latvia)

The Acoustic Space Lab began as a pilot project between several international artist groups and individuals from the Xchange network, including RIXC/E-LAB (Riga/LV), Derek Holzer (Amsterdam/NL/USA), RadioQualia (London/UK/Adelaide/AU), Projekt Atol (Ljubljana/SI) and L'audible (Sydney/AU). The aim of the event was to investigate the potential for 'collaborative audio communication tools', and to broaden the meaning of 'net.radio', particularly in relation to streaming media standards and technical limitations. Participants collaborated on networked media, and radio and satellite technology field experiments. The symposium took place in Irbene, and this location was chosen in part because of its proximity to the d=32 meter dish antenna. During Russia's occupation of Latvia, the d=32 had been used by the KGB to spy on satellite transmissions between Europe and North America. When the Russian Army departed the region in 1994, the antenna was abandoned and nearly destroyed (Acoustic Space Lab, 2001). In the context of locative media, this event shares much in common with the Locative Media Workshop, notably the rhetoric of technological experimentation with military technology, and, within the border of an abandoned military

base. Additionally, it was organized and attended by a few of the same individuals affiliated with the Locative Media Workshop (also referred to as Longitude 21.00, Latitude 56.55).

#### **SEPTEMBER 2001**

##### **Blinkenlights** (September 11, Berlin)

The first interactive light installation under the moniker, Blikenlights was at Haus des Lehrers, Alexanderplatz in Berlin, Germany. The instillation, initiated by the Chaos Computer Club, was envisioned as the world's largest interactive computer display. The name of the project is derived from the moniker for the front-panel diagnostic lights that were monitored for computations and diagnostic software bugs on early computers (Blikenlights, 2010; see also Thayer, 2003). Since 2001, the project has been mounted in various international cities.

##### **Can You See Me Now?** (November 30-December 1, Sheffield, U.K.)

Can You See Me Now? was a joint project between Blast Theory (2010a) and the Mixed Reality Lab, and was originally commissioned for Shooting Live Artists - a strategic initiative by Arts Council of England, BBC Online and b.tv/The Culture Company. Since it's first

demonstration at the b.tv festival in Sheffield, CYSMN? has been presented internationally, and at notable events such as at the Dutch Electronic Arts Festival (DEAF) in Rotterdam (in 2003). Described by Blast Theory as a 'mixed reality game', CYSNM? intermixes real world players with players online: players in the real world and players online are required to find one another within a specified city quadrant. Real world players are equipped with a PDA and GPS (Global Positioning System). This configuration traces and relays the location of street players to those playing online, and in turn the positions of online players, that is, in the virtual version of the city, are sent to real world players through the PDA. The point of the game is for the real world players to track and find the online players; if a real world player arrives within 5m of an online player, the game is over for that online player (Blast Theory, 2010a, 2010b; Can You See Me Now?, 2010).

#### **NOVEMBER 2001**

##### **GPster**

Envisioned and prototyped by Karlis Kalnins and Marc Tuters, GPster.net was conceived as a public online database, to which anyone could add or search for

waypoints.<sup>25</sup> According to Kalnins (2002), development was spurred by an interest in building creative location-based projects', and enabling the general public and art communities to access location-based technologies (Kalnins, 2002). The highly technical project operated on a mySQL database that ran on a managed web server (Kalnins, 2002). GPster received ample support from numerous institutions and funding bodies including, Telefilm Canada, The Banff Center, The University of Tennessee, GPS Central.ca (Calgary), Place Matters (New York), and E-Lab/RIXC (Riga) (GPster, 2003a).

## **JANUARY 2002**

### **Bureau d'études**

The duo - artists Léonore Bonaccini and Xavier Fourt - established a presence online, and provide access to their 'cartogrammes'. These diagrams, mapped information concerning global power structures, particularly the manifestation of corporate and state partnerships.

### **Amsterdam RealTime**

The project was a collaborative effort between the Waag Society, Esther Polak and Jerome Kee, and organized for the

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<sup>25</sup> A set of coordinates that identify a physical space and are used for navigation.

exhibition, *Maps of Amsterdam 1866-2000*, held at the Amsterdam City Archive from October 3 to December 1, 2003. Research on the project cumulated in the development of a GPS tracking system, which was a GPS equipped PDA that calculated geographical positions. Data calculated by the devices were sent – in real time – to a central database, which then translated movements into a line diagram (Wag Society, 2010a; 2010b).

### ***Pursed Lip Square Jaw***

Anne Galloway began the blog, which functioned first as a research notebook for her PhD dissertation, yet became an important news source for urban computing and locative media (Galloway, 2008; *Pursed Lip Square Jaw*, 2009).

## **APRIL 2002**

### **Urban Tapestries**

A collaborative public authoring tool developed by Proboscis in partnership with the London School of Economics, Birkbeck College, Orange, Hewlett-Packard Research labs, France Telecom R&D UK, and Ordnance Survey (*Urban Tapestries*, 2008), *Urban Tapestries* enabled individuals to access and author location-based content, such as text, audio and images.

### **BotFighters**

Produced by the Swedish Company, It's Alive! the game operated in the physical world and online. Players used a mobile phone in the real world to locate – through text messaging – and destroy other players (bots). If a player destroyed a target, they received credits and advanced on the score list. Players could track their progress, and create and update their robot (avatar) online (Sotama, 2002).

### **OCTOBER 2002**

#### **Smart Mobs: The Next Social Revolution**

In a July 4, 2003 post on the [Locative] Listserv, Mark Tutters cited *Smart Mobs* as a 'key inspiration' for conceptual themes in the Locative Media Workshop announcement (Tutters, 2003c). The post situates mobile communication devices and pervasive computing as enabling technologies of 'smart mobs'. According to Tutters, these technologies are both beneficial and destructive; smart mobs could allow individuals to 'amplify human talents for cooperation', yet, could also be used 'to coordinate terrorist attacks' (Tutters, 2003c).

#### **Geograffiti** (September 13, Banff)

Geograffiti was developed as an application for GPster. In

tandem, the GPster database and the Geograffiti application enabled individuals to tag physical spaces with text or media files, which could then be accessed by others in-situ (GPster, 2003b). The project debuted at the conference, Quintessence: The Clumpy Matter of Art, Math and Science Visualization, hosted by the Banff New Media Institute (Kalnins, 2002).

### **34North 118West**

Described by one of its creators as the first 'narrative archaeology' experience (Hight, 2006), 34N118W is a narrative experience covering four blocks in downtown Los Angeles near Sci-Arc, The Southern California Institute of Architecture. Created by Jeff Knowlton, Naomi Spellman, and Jeremy Hight, the walk offered in-situ historical narratives of the area. Participants were outfitted with a GPS enabled slate laptop, and encountered sound files attached to 'hotspots' as they walked through the demarcated space (Jeremy Hight, 2006; 34 North 118 West, 2002).

## **MARCH 2003**

### **Pasta&Vinegar**

Initiated and maintained by Nicolas Nova as part of his research process, the blog engaged with mobility, urban

environments, digital entertainment and new interfaces (Pasta & Vinegar, 2010). Nova also developed the mobile game, Catch Bob (2004-2007) (see: CRAFT, 2010), which he described as, "an experimental platform in the form of a mobile game for running psychological experiments" and "designed to elicit collaborative behavior of people working together on a mobile activity" (CRAFT, 2010).

**[MURMUR] Toronto**

A location-based story-telling experience for various places in Toronto. These particular sites, marked with a [murmur] sign, alert a walker to the presence of a story and provide a phone number. A pedestrian then calls that number (with their cellular phone) and listens to a narrative in-situ.

**Ars Electronica** (September 6-12, Linz, Austria)

Blast Theory is awarded the Golden Nica for Inter-active Art for their project, Can You See Me Now?

**MAY 2003**

**Psy.Geo.Conflux** (May 8-11, New York)

From May 8 to 11, 2003, the first Psy.Geo.Conflux Festival was held in New York city. Organized by Glowlab founder, Christina Ray, festival content merged around the principle

of psychogeography, which for Ray, encompassed "the meaning of living in a city", finding one's "own path in the city," and discovering the "patterns we generate" (Christina Ray cited in Zimmerman, 2003, ¶5; see also Nova, 2003b; Kilgannon, 2003; Ray et al. 2003).

**Art + Communication: Media Architecture** (May 16-17, Riga, Latvia)

Organized by RIXC, the center for new media culture/Latvia, Riga, Karlis Kalnins proposed the term, 'locative media' at this event. Others corroborate Tuter's claim (Tuters, 2004d, ¶2; Hemment, 2004; Russell, 2004b; Bleecker & Knowlton, 2006; Galloway & Ward, 2006; Galloway, 2008). The term 'locative media' was not circulated until after this event.

## **JUNE 2003**

### **[Locative] Media listserv**

In preparation for the July workshop, the [Locative] Listserv is created, and on June 25, 2003, Rasa Smite circulates the first email (Smite, 2003, ¶2).

### **Uncle Roy All Around You**

A mixed reality game in which both online and real world players roam a city quadrant in search of 'Uncle Roy'.

Blast Theory and the Mixed Reality Lab collaborated on the project, and received support from British Telecom, the Arts & Humanities Research Board, Equator and the Interdisciplinary Arts Department of Arts Council England (Blast Theory, 2010c).

### **JULY 2003**

#### **Locative Media Workshop** (July 16-36, Liepāja, Latvia)

The Locative Media Workshop, also referred to as Longitude 21.00, Latitude 56.55, was organized by RIXC, in collaboration with GPster/Canada, and sponsored by The Daniel Langlois Foundation for Arts, Science and Technology, the Latvian Cultural Capital Foundation and the Nordic Cultural Foundation (Locative Media, 2003). The workshop was held at the K@2 Culture and Information Centre in Karosta, Latvia.

### **September 2003**

#### **Next 5 Minutes (N5M): International Festival of Tactical Media** (September 11-14, Amsterdam)

The N5M festival began in 1993, with the theme 'camcorder revolution', and this fourth installment focused on the potential for tactical appropriation of media technologies.

A group meeting for [Locative] Media listserv subscribers<sup>26</sup> was organized through the listserv, and held on Saturday, September 13<sup>th</sup> at 7pm. The purpose of the meeting was to discuss discursive currents and future possibilities of the field, and, a proposal was put forth for the formation of a non-profit entity around locative media. This materialized into the short-lived Locative Media Lab.

### **NOVEMBER 2003**

#### **Pre/Amble Festival** (November 1-2, Vancouver)

Similar in scope and theme to Psych.Geo.Conflux, Pre/amble also featured a few of the same projects. Like the New York festival, it was free and open to the public, and emphasized psychogeography in contemporary art practice, featuring both artist talks and walks (Pre/amble, 2003a; 2003b). Kate Armstrong organized the event.

### **DECEMBER 2003**

#### **Notes on Locative Media** (December 9-20)

Simon Pope initiated a very short-lived blog through which he detailed his encounter with locative media (Pope, 2003), and these observations eventually materialized into, *The Shape of Locative Media* (2005).

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<sup>26</sup> Also, Esther Polak presented an iteration of the work she had begun at the Locative Media Workshop (Albert, 2003).

## **FEBRUARY 2004**

**Transmediale** (January 31–February 4, Berlin)

The prize for software is awarded to Wilfried HouJeBek for dot.walk, despite the fact that he did not employ or produce software. The project operated by directives or instructions, which were printed on pieces of paper in Lite-C (a programming language used for multimedia applications), from which participants had to translate into English, and walk the city based on the decoded directions (socialfiction.org, 2002a, 2002b; van Veen, 2004; Tuters & Varnelis, 2006). Operating under the guise of Socialfiction.org, Wilfried HuJeBek's work is influenced by psychogeography. According to the project website, which details the 2002 walk in London, the "psychogeographic aim of the project is to view the city as a database, or switchboard. The city as computer" (socialfiction.org, 2002b).

## **MARCH 2004**

**We Make Money Not Art**

Régine Debatty began the blog as a means of exploring the intersections between art, design and technology. The blog publishes current news concerning the use and appropriation of technology by artists, hackers and interaction

designers, and includes write-ups on projects, conferences, festivals and publications (We Make Money Not Art, 2010). It has become a celebrated source for technology, art and design news. Debatty is often invited to present and attend numerous international conferences (i.e. Futuresonic06, Social Technologies Summit).

### **Locative Media Lab**

Following the brainstorming meeting at N5M in September, Ben Russell created a web site for the group at <http://locative.net> (Walsh, 2004). The web site acted as a point of convergence, and it also highlighted member projects and initiatives, and provided locative media resources. Saul Albert (2004b) later aligned locative media with the "group of people who have been assembled under the banner of <http://locative.net>" (Albert, 2004b), or the Locative Media Lab. The site is no longer online.

### **I Like Frank (Adelaide, Australia)**

I Like Frank was co-produced by Blast Theory, the Mixed Reality Lab and five local artists and scientists during Blast Theory's appointment as Adelaide Thinkers in Residence. It Touted as "the world's first 3G mixed reality game" (Blast Theory, 2010d), online players and real world players collaborated using the internet and mobile phones

respectively. Online players directed real world players through the city in search of postcards that provided directives for real world players to follow (Blast Theory, 2010a).

#### **APRIL 2004**

##### ***CRUMB*: Exhibiting Locative Media**

'Exhibiting Locative Media' was the topic of the month on the *CRUMB* (New Media Curating) listserv. Drew Hemment selected respondents, and discussion converged around the query: "What are the practical challenges of exhibiting media which are international yet local, mobile yet grounded?" (Graham, 2004). The special topic coincided with the upcoming Futuresonic 04, one of the first international events to feature locative and mobile media projects (Albert, 2004b).

##### **PAC Manhattan**

A large-scale version of the 1980s video game Pac-Man, which implemented the New York City grid as game interface. Like many of the projects discussed thus far, it too was a mixed reality encounter and consisted 5 players (1 Pac-Man and 4 ghosts) in the street, who were paired with a player in the control room. The players were continuously in contact via cell phone, street players updated their

controller at every intersection, and the controller, would update the street player as to their location in the game. The game employs mobile telephony, Wi-Fi, and custom software that tracks 'live' players, and broadcasts their location over the internet. The game was developed at New York University's Interactive Telecommunications graduate program (Pac Manhattan, 2004).

### **Drift**

Terri Rueb presented Drift at Ohne Schnur/No Cord: Communication Art at the Interface Between Art, Technology & Society, an event organized by the Institute of Art History of Ludwig Maximilians University (LMU), in Munich, (April 3-4 at the Cuxhaven Art Association). Equipped with a Pocket PC, GPS device and headphones, participants wandered the Watten seashore for sounds, which included footsteps on different surfaces, and literature passages dealing with the theme of wandering, being lost, and drifting were spoken in different languages. Covering approximately a 2 km x 2 km, the soundscape shifted according to location and time. At low tide, all the sounds were in one location, and at another during high tide. As individuals roamed through the demarcated space, sounds played automatically (Rueb, 2006). The software was created

by Computer Science students under the direction of Dr. Zary Segall at the University of Maryland Baltimore County (see: Rueb, 2006).

**Futuresonic04** (April 28-May 8, Manchester)

In his curatorial statement, Drew Hemment described Futuresonic04 as, "the first major exhibition worldwide on mobile, wireless and locative arts. It followed pioneering events and workshops by RIXC in Latvia, and preceded Wireless Experience at ISEA2004" (Futuresonic, 2004). Albert (2004b) cites the festival as the, "first large public trial of locative media", which presumably means beyond the confines of a particular group of people, and into a larger digital media arena.

**MAY 2004**

**[RAM]5: Open Source Media Architecture** (May 5-9, Riga, Latvia)

Organized by RIXC, the workshop investigated open source in relation to contemporary practices of architecture, locative art and media streaming, and "turning closed systems into open-ended narratives" (Smite, 2004, ¶30). The locative media portion of the workshop had evolved from, and was in part determined by, the Locative Media Workshop (Smite, 2003 & 2004; Locative Media, 2003).

**CitiTag (Bristol)**

A location-based multi-player game in which players, equipped with a GPS and WiFi enabled iPAQ PocketPC, roam a particular quadrant of a city in search of players from the opposing team. Upon encountering an opponent, one either tags or is tagged. If a player is tagged, s/he must find a team player to be untagged. The project was a collaborative effort between HP Labs and Open University's Knowledge Media Institute (KMi). A pilot trial occurred at Open University in March 2004.

**Speakinghere**

Produced by Paula Levine at the IntraNation Residency at the Banff New Media Institute (BNMI), *SpeakingHere* is a GPS controlled narrative walk in which eleven people, each speaking a different language, describe the landscape as seen through their studio window. These descriptions, along with video pans of the area described, were shot daily for one week. This information was 'embedded' into the same landscape, and participants, equipped with laptops, headphones and GPS receivers, walked through the landscape, and received the audio and visual content (Levine, 2010b).

**Shadows from Another Place: San Francisco <> Baghdad**

The project mapped missile and bombsites in Baghdad, upon

San Francisco. Each site in San Francisco mirrored an attack site in Baghdad. Documentation, such as photographs, maps and GPS coordinates, the same technology employed by the military to target the Baghdad sites, were integrated with those from San Francisco. Paula Levine produced the project while in attendance at the IntraNation Residency at the Banff New Media Institute (BNMI) (Levine, 2010c).

#### **JULY 2004**

##### **Networked Performance**

Spurred by an interest in tracing current 'network-enabled practices' and creative pursuits of practitioners, Jo-Anne Green and Helen Thorington of Turbulence.org, and Michelle Riel, Assistant Professor of New Media at California State University Monterey Bay, began the Networked Performance blog. The blog is a central hub for current research intersecting numerous fields, research practices and processes (Turbulence, 2010).

#### **AUGUST 2004**

##### **Stedelijk Museum (August 25, Amsterdam)**

The symposium featured presentations from members of the Locative Media Lab, specifically Pete Gomes, Esther Polak, Jo Walsh, Schuyler Erle, Ben Russell, Wilfried HouJeBek (Stedelijk Museum, 2004).

## SEPTEMBER 2004

### **Ars Electronica** (September 2-7, Linz, Austria)

The Golden Nica for Freestyle Computing is awarded to Thomas Winkler for GPS Tron. The project adapted the classic arcade game for mobile phones. To play the game, a user must run the client software on their GPS equipped mobile phone. This configuration tracks player movements, which are represented by a red trail, and every 200meters is converted to 1cm on the screen. The point of the game is to corner one's opponent (GPS Tron, 2010).

### **Mobile Digital Commons Network I** (Montréal-Banff-Toronto)

Launched by Concordia University and the Banff New Media Institute, MDCN was an interdisciplinary research network, bringing together designers and artists, computer scientists and engineers, and communication and media studies scholars. It was funded through Canadian Heritage's New Media Research Networks Fund.

## OCTOBER 2004

### **PLAN: Pervasive and Locative Arts Network**

An announcement of the newly formed PLAN (PLAN, 2006a) and a call for workshop proposals was circulated on the [Locative] Listserv. Funded as part of the Engineering and Physical Sciences Research Council's (EPSRC) Culture and

Creativity program, PLAN was an international and interdisciplinary research network in which 'practicing artists, technology developers and ethnographers' convened around pervasive and locative media. The aim of PLAN was to advance, 'interdisciplinary understanding and building consortia for future collaborative projects' (PLAN, 2006b). Research focused on the investigation of cultural and creative potentials of pervasive and locative media (PLAN, 2006f). The network organized three events: 1) a two-day conference and workshop at the Institute of Contemporary Arts, London (PLAN 2006g); 2) a specialized workshop for a small group of 'technically capable' individuals (PLAN, 2006h); and 3) a 'Social Technologies Summit' held at Futuresonic06 (2006i).

#### **DECEMBER 2004**

##### **Questioning the Frame: Thoughts about Maps and Spatial**

##### **Logic in the Global Present**

In her piece, Fusco is critical of a laissez faire attitude of mapping and cartographic practices, particularly those that are abstract and omit 'categories of embodied difference such as race, gender and class' (Fusco, 2004a). Based on a lecture delivered at the School of the Art Institute of Chicago in November, as part of the series:

MAPPING / CULTURE / BORDER / HACKING /, its publication in *In These Times*, erupts intense criticism, on various listservs, including *Nettime*, *Locative Media*, and *Rhizome*. The thread that ensues on the [Locative] Media Listserv is disappointing at best. For Thayer (2004), the piece demonstrates that Fusco 'regrets not being a 'hacker'', and Chardonnet makes the crude assertion that Fusco seeks out the work of white men simply to be critical (Chardonnet, 2004). Brian Holmes (2004b) writes and circulates a detailed response in which he specifies his experiences working with mapping and cartographic practices, and cites his own work on 'imperial infrastructures' (Holmes, 2004a), which predates Fusco's piece.

## 2005

### **Transcultural Mapping Reader**

During the summer of 2004, Rasa Smite from the Centre For New Media Culture, RIXC, with support from the Culture 2000 Program of the European Union, co-organised the 'Trans-Cultural Mapping' workshops with K@2 (Latvia), Projekt Atol (Slovenia), Piknik Frequency (Finland), TEKS (Norway), LORNA (Iceland), Ellipse (France). Each workshop focused on issues of locality in response to European unionization (UNESCO, 2004; Bergaust, 2004; Tuters, 2004c, 2004g).

Following the workshops, Rasa Smite and Marc Tuters circulated a call for papers for a publication that convened around workshop themes. In turn, Smite and Ben Russell co-edited the Trans Cultural Mapping (TCM) Reader Online, which included excerpts of workshop presentations and new pieces. As stipulated in Ben Russell's introductory remarks, the TCM reader is to be read as setting some boundary stones for the test category of locative media (Russell, 2004b). Tuters later revealed that the 2003 Locative Media Workshop served as a model for TCM workshops (Tuters, 2004c).

#### **FEBRUARY 2005**

##### **PLAN: ICA** (February 1 & 2, London)

The formative members of PLAN (see PLAN, 2006c) organized a two-day conference and workshop at the Institute of Contemporary Arts (ICA). As specified in the event announcement, the formal gathering was to launch the network, and bring together leading international figures to review the emerging fields of locative and pervasive media (PLAN, 200d).

##### **The Shape of Locative Media** (February 9)

*The Shape of Locative Media* is published in *Mute*. In it, Simon Pope examines the current theoretical inflections of

locative media, situates the field in relation to other art practices, and imparts critical commentary concerning the future direction of locative media (Pope, 2005).

#### **MAY 2005**

##### **Sampling the Spectrum: The Politics, Practices and Poetics of Mobile Technologies** (May 4-8, Montréal)

Organized and hosted by the Mobile Digital Commons Network, the event featured both MDCN participants and researchers from outside the network. The event was held at the Society for Arts and Technology/la société des arts technologiques, and open to the public. The symposium marked an end to MDCN I.

#### **SEPTEMBER 2005**

##### **Networked Publics**

From September 2005 to June 2005 thirteen scholars at The University of Southern California's Annenberg Center for Communication worked jointly under the guise of 'Networked Publics.' The group published a blog, which documents research processes and findings, and, eventually, published a book of the same name. The team included: Walter Baer, François Bar, Julian Bleecker, Anne Friedberg, Shahram Ghandeharizadeh, Mizuko Ito, Mark E. Kann, Merlyna Lim, Fernando Ordonez, Todd Richmond, Adrienne Russell, Marc

Tuters, Kazys Varnelis (Networked Publics, 2006).

**Ars Electronica** (September 1-6, Linz, Austria)

Esther Polak is awarded the Golden Nica for Interactive Art for the project, MILK.

**Mobile Digital Commons Network II**

MDCN reconvened research after receiving funding from the New Media Research Networks Fund. Research institutions included, Concordia University, the Banff New Media Institute, the Ontario College of Art and Design, and York University. Research focused on the development of mobile and sensor based experiences, and user-integration research.

**OCTOBER 2005**

**PLAN: Mixed Reality Lab**

Held at the Mixed Reality Lab at the University of Nottingham, the second PLAN event targeted a 'technically capable group'; individuals with previous technical experience with pervasive and locative platforms, and specific technologies, including "sensors and actuators, present and next generation cell phone networks and handsets, web 2.0 methods and standards, interaction and industrial design, mathematical modeling and simulation"

(PLAN, 2006e).

**Scape the Hood** (October 7-9, San Francisco)

In collaboration with the KQED Digital Storytelling Initiative and Hewlett-Packard/Mobile Bristol, Paula Levine produced Scape the Hood. Equipped with HP iPAQs and GPS devices, participants roamed a three-block radius in San Francisco (South of Market), and provided with historical facts, narratives and sounds of the space and its various historical incarnations. The project was featured at the 8<sup>th</sup> Annual Digital Story-telling Festival (DSF)(Levine, 2010a).

**MARCH 2006**

**The Tactical Sound Garden**

First demoed at the Mobile Music Workshop in Brighton, the Tactical Sound Garden is primarily a toolkit, that is, an open source platform to be utilized in the creation of public sound gardens. The toolkit requires a dense WiFi zone, in which sounds are planted within a demarcated space. These 'plantings' are mapped onto spatial coordinates through a 3D audio engine, and sound files are dispersed within the predetermined space. In order to experience the sound garden, participants require a mobile device with embedded sound files. As participants roam through the space, sound files are triggered based on GPS

coordinates that were previously determined in the 3D audio engine (Tactical Sound Garden, 2006).

### ***Spook Country***

William Gibson's novel features locative media as a central current in its story line (Gibson, 2007). Interestingly, Gibson had been alerted to the Locative Media Workshop by Bruce Sterling, and responded on his blog with:

I have a special fondness for descriptions of places like this. They trigger ghost-dialog: "Forget it, man, she's \*Karostan\*. Latvian 'alien' passport. It's not going to happen. (Gibson, 2003).

### **APRIL 2006**

#### **Signature** (April 4-July 9, Santa Rosa)

Paula Levine produced the project for the Force of Nature: Centennial Exhibition Commemorating the 1906 Bay Area Fire and Earthquake, Contemporary Project Space, at the Sonoma County Museum. Much like Levine's other work, Signature merged time and space through mapping. For this particular piece, a contemporary image of Santa Rosa dissolves, with the sounds of the 1906 earthquake to reveal the presence of the Roger's Creek Fault running silently beneath the city (Levine, 2010d).

## **JULY 2006**

### ***Leonardo, Locative Media Special Issue***

Drew Hemment served as guest editor of the locative media themed issue. The issue included a collaborative bibliography, project synopsis and numerous articles.

### **Social Technologies Summit** (July 20-22, Futuresonic06, Manchester)

Futuresonic organizers and PLAN coordinated the Social Technologies Summit, which was aimed at "bringing together leading figures to explore 'a whole new way of doing things in the air'" (Futuresonic06, 2006a). The summit included a keynote address from Toshio Iwai, Japan's leading artists and game developer at Nintendo, in addition to a series of conference panels, performances, an exhibit of pervasive and locative instruments (Futuresonic 2006b), and finally, 'Off the Map', an exhibition of pervasive and locative projects (Futuresonic, 2006c). Ben Russell and Drew Hemment curated the event (PLAN, 2006i).

## **AUGUST 2006**

### **Ars Electronica** (August 21-September 5, Linz, Austria)

Antoni Abad is awarded the Golden Nica for Digital Communities for the project, canal\*ACCESSIBLE.

## NOVEMBER 2006

**Almost Perfect** (November 5–December 2, Banff, Alberta)

A 'rapid prototyping' residency sponsored by Hewlett-Packard and hosted the Banff New Media Institute. The residency provided an opportunity for individuals to conceptualize and prototype locative media projects under the guidance of Hewlett-Packard's (HP) Mediascape authoring toolkit.

What resonated for me during the construction of the timeline was the presence of psychogeography within the field of locative media. As I traced its emergence, both theoretically and practically, it became increasingly more apparent that in as much as it was embraced, it was also examined within a critical lens. And this critical traction was itself susceptible to further debates and negotiations, which pivoted on a bifurcation of perspective, specifically, insider/outsider. In what follows, I offer a genealogy of psychogeography and attend to the discursive invisibilities inscribed by its adoption. Beyond the specificity of psychogeography, chapter 2 demonstrates the manner in which any attempt to define locative practices are always already situated within discourses of power. And as the case studies further reinforce, the ability to

partake in shaping spaces of enunciation is marked by struggles over the production of meanings, in terms of both discourse and practice.

## **CHAPTER 2: A LOCATION OF ONE'S OWN**

### **A Feminist Genealogy of Psychogeography**

A feminist genealogy of locative media is not only about identifying the activities and achievements – the material productions – of women within the field. Women have, and continue, to produce within and around the domain of locative media, and many of these activities are documented in the timeline itself. For instance, Terri Rueb, Esther Polak, and Paula Levine experimented with location-based technologies prior to the formalized coining of the term; Rasa Smite organized and hosted numerous workshops and conferences that convened around the integration of location-based technologies into arts practice; Christina Ray and Kate Armstrong implemented psychogeography as a theoretical framework in their exploration of emerging technologies, and additionally, organized events for others to showcase projects exploring similar concepts; and finally, Anne Galloway, Minna Tarkka, Régine Debatty, Jo-Anne Green, Helen Thorington and Michelle Riel, blogged and published extensively on location and pervasive technologies, providing both insights and perspectives on emerging technological formations. Taking stock of such contributions is important and necessary, yet, so too is

ascertaining ideological positions throughout the field, which encourage (or not) feminist perspectives, particularly theoretical underpinnings that might (re)materialize or (re)produce a gendered bias.

This chapter attends to biases and inadequacies in the way that psychogeography, as a theoretical paradigm has shaped the field of locative media. The objective of this frame of analysis is to call into question the manner in which psychogeography, as a model for spatial intervention, is perpetuated as intrinsic to the field. I begin by broadly outlining initial enthusiasm and applications of psychogeography, followed by an overview of criticisms. Then, I refine my analysis and focus on a discussion thread in the [Locative] Media Listserv, which erupted following the publication of an article, by Coco Fusco (2004a), critiquing the manner in which mapping practices within new media art often ignore categories of embodied difference. This chapter works towards unraveling the affinity between psychogeography and locative media, and situates the relationship as a discursive construct; that is, the location of psychogeographic practices and the capacity for these practices to be reproduced, are located in discourse.

## **GENEALOGY**

In "Nietzsche, Genealogy, History", Foucault (1984) aligns his project with Nietzsche's repudiation for the hunt of origins, in which history, as a totalizing force, assimilates or dissolves events. Unlike history, genealogy is not an indicator of originative determinants. As Foucault clarifies, a genealogical approach is "not opposed to history, only the search for origins" (1984, p.77). Characterizing genealogy by two moments: descent (Herkunft) and emergence (Entstehung), Foucault's demonstrative aim is the configuration of 'effective history', which focuses on changes in force relationships (Prado, 2000, p.41), and excavates "a complex system of distinct and multiple elements" that elude synthesis (Prado, 2000, p.39). Genealogy is concerned neither with an ontological beginning (descent), nor a final end (emergence). A genealogical approach, traces the descent and emergence of concepts, ideas, and institutions (Prado, 2000, p.38), and contests governing discursive norms. Genealogy, as Philip Goldstein (2005) adds, examines "internal conflicts and external authority or social influence as well as the nexus or mutual elaboration of power and knowledge (p.44; see also: Han, 1998, pp.123-27, 196-98; Poster, 1984, pp.39).

As a method of inquiry, genealogy imparts a technique to ascertain and interrogate discourses of power and practice that influence the institution of locative media. "This process", as Wanda Pillow (1997) explains,

interrupts traditional notions of subjectivity, takes into account the 'politics of the gaze' (who studies whom) and focuses attention on not only the politics of what gets said...but how what is said...defines what we say. (Pillow, 1997, p.142)

A genealogical analysis makes apparent what is otherwise hidden within the timeline; it undermines inherited certainties, and induces, "politically informed counter memories" (Braidotti, 1994, p.207). "Genealogical thinking", argues Kathy Ferguson, "provides resources for feminists trying to think critically about prevailing forms of power without reproducing those forms in the guise of liberation" (2000, p. 225). Such an endeavour, as Alys Eve Weinbaum (2004) forewarns, includes forging "new relationships with familiar objects of knowledge by posing questions that may be uncomfortable but are nonetheless urgent" (p.63).

## **PSYCOGEOGRAPHY**

### **Situationist International (SI)**

In *Formulary for a New Urbanism*, Ivan Chrcheglov (1953) reflects on the banalization of modern urban life, in which the city, brimming with commodified forms, is incapable to incite affective response from its dwellers. To counter the boredom of the city, as Chrcheglov proposed, one must invent new, changeable decors (¶9), of which the "main activity of the inhabitants will be continuous drifting" (¶19). Years later, Guy Debord contributed to Chrcheglov's conceptualization of urban drifting with his formulation of the *dérive*. As "a technique of rapid passage through varied ambiances", the *dérive* involves "playful-constructive behaviour and awareness of psychogeographical effects", yet differs from "the classic notions of journey or stroll" (1958a, ¶1). For the Situationist International, psychogeography was an observational mode, of "processes of chance and predictability in the streets" (Debord, 1955, ¶1). The SI embraced psychogeography as a framework to study the capacity for the geographical environment to influence individual emotions and behaviours. Despite their 'spirit of discovery' (Debord, 1955, ¶2), the Situationist International, as Jeremy Crampton (2010) recently divulged, were known to prepare "a number of maps of Paris in the

1950s to show the flows and forces they perceived in the environment (p. 165). The walks, "influenced by the contours of the 'psychogeographical relief'", were often undertaken in a small group of two or three people as "this allowed crosschecking and the possibility of an objective conclusion" (Crampton, 2010, p.165). The Situationist International's approach to psychogeography, much like its take-up within locative media, is an organized, and to a certain extent, predetermined venture within the city.

### **Headmap Manifesto**

*Headmap Manifesto* (1999) by Ben Russell has been described as a precursor to locative media (Tuters, 2004a & 2004b; Lenz, 2005; Tuters & Varnelis, 2006; Hemment, 2006; Hemment et al., 2006; Galloway 2008). According to Russell, the manifesto is an extensive "sequence of text fragments dealing with the social and cultural implications of location-aware devices" (p.1). For the most part, the text focuses on the spatialising possibilities of new<sup>27</sup> emerging wireless digital technologies. As Russell details, these 'location-aware' devices would interact within the physical

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<sup>27</sup> These technologies would have been new at the time. Russell articulated characteristics of 'location-aware devices' that had yet to come into existence. The first version was published over a year before the disablement of selective availability and the first recorded geocaching.

world such that computational relationships would no longer be confined to the computer screen. For Russell, this shift in computing would simultaneously mark a shift from an 'inside' view towards an 'outside' view, what Russell unapologetically describes as "a recolonisation of the real world", characterized by "computers becoming invisible, mobile, networked and location-aware" (p.1). The 'manifesto' amassed discourses of radical cultures of technology, politics, sexuality and community formations, in conveyance of a utopian future, in which everyday life is cushioned, and in turn, dynamically energized by location-aware devices. Much of the manifesto consists of lengthy quotes, extracted from a variety of texts and authors, which are interspersed with commentary from Russell. For instance, in the section, 'Situations', Russell extrapolates<sup>28</sup> quotes from, *Leaving the 20th Century: The Incomplete Work of the Situationist International* (Gray, 1974).

Subsequent to Russell's manifesto, and perhaps also in lieu of the publication of updated versions, and his fraternization with key spokespeople of the locative media

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<sup>28</sup> The subsections, 'Drifting and Psychogeography' and 'Formula for a New City' are most dense.

network, psychogeography became a widely circulated descriptor within the field (Tuters 2004a, 2005; van Veen, 2004; Tuters & Varnelis, 2006; Chang & Goodman, 2006). According to David Pinder (2005), its influence in the artistic take-up of location-based digital technologies, points towards how psychogeographical practices have been reworked from paper maps to digital mapping technologies, such as GPS<sup>29</sup> (p.408). However, evidence of psychogeography is visible not only within projects, but events and festivals. In what follows, I detail two projects and two festivals embracing psychogeographic principles: 1) [murmur] and dot.walk; and 2) Psy.Geo.Conflux and Pre/Amble.

### **[murmur]**

Co-produced in 2003 by Shawn Micallef, Gabe Sawhney and James Roussel during a residency at the Canadian Film Centre's new media lab Habitat, [murmur] is a site-specific story-telling experience, designed for fixed locations in Toronto. The sites are marked with a [murmur] sign, which alert a walker to the presence of a story, and provide a phone number to call and receive the automated narrative.

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<sup>29</sup> Pinder provides the example of London-based group Proboscis, responsible for developing the 'Urban Tapestries' software platform. The software enabled the authoring of virtual annotations of the city through mobile phones and PDAs (endnote 18, in Pinder, 2005, p.408).

All of the content is in audio format, as opposed to screen-based content, thereby enabling an individual to roam the space uninhabited while listening to the narrative (Murmur Toronto, 2010a, 2010b).

In "Sonic Signage: [murmur], the Refrain, and Territoriality", Darren Wershler (2008) aptly describes the project as 'neo-Situationist' (p.411). As opposed to leaning on the Situationist International for a precise definition of psychogeography, the creators approach the term as, "an exploration of the urban environment for its own sake" (Micallef in O'Donovan, 2003, ¶5). This implies action on the part of the walker who, in strolling through the city, discovers, through narrative anecdotes, how the city is changing. In accordance to this design ethos, "[murmur] is very much a flâneur experience", which as Sean Micallef details, has been "updated and augmented with modern technology" (in O'Donovan, ¶7). Continuing, Micallef (2003) explains:

While drifting through the city, accessing a [murmur] story gives the user another perspective on a given space - whether it is the past, present or even a futuristic interpretation of that place. Hearing these

stories, like a psychogeographic walk through a city, can give one a new appreciation of places that may have seem nondescript or banal.

O'Donovan, 2003, ¶7)

For the creators of [murmur], "a psychogeographic *dérive*" involves "stepping outside of the daily routine", which in turn offers a different approach and perspective, a "richer perspective" (Micallef in O'Donovan, 2003, ¶5).

### **dot.walk**

Operating under the guise of Socialfiction.org, Wilfried HuJeBek's project, dot.walk, envisioned the city as a computer. In fact, as detailed on the project website, the "psychogeographic aim of the project is to view the city as a database, or switchboard" (socialfiction.org, 2002b). HouJeBeck won the 2004 Transmediale award for software despite the fact that the project refrains from the use of software. Conversely, the 'software' is analog; directives or instructions are printed on pieces of paper in Lite-C - a programming language used for multimedia applications - and participants are required translate the code (into English) and walk the city according to the translated directives (socialfiction.org, 2002a, 2002b; van Veen, 2004; Tuters & Varnelis, 2006).

## **Psy.Geo.Conflux**

From May 8 to 11, 2003, Psy.Geo.Conflux, what has since become Conflux,<sup>30</sup> was organized by Glowlab<sup>31</sup> founder and practicing psychogeographer, Christina Ray. According to Ray and fellow organizer Dave Mandl, a member of the Brooklyn Psychogeographical Association, the intention of organizing the festival was to,

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<sup>30</sup> According to David Darts, an art professor at New York University, and 2009 Conflux curatorial director, the origins of the festival were rooted in psychogeography, however, it has "evolved to more of an art and technology fest, fusing urban public spaces with exploration and experimentation" (Darts cited in Wortham, 2009, ¶2). Each year, festival headquarters change. For the 2010 Conflux Festival, NYU Steinhardt's Barney Building served as home base, and provided artists and attendees with a central space to congregate. Past headquarters have included: ABC No Rio, Lower East Side (2003); ParticipantInc, Lower East Side (2004); Providence Initiative for Psychogeographic Studies in Providence, Rhode Island as 'Provflux' (2005); McCaig-Welles Gallery, Williamsburg (2006); The Change You Want To See, Williamsburg (2007); Centre for Architecture, Greenwich Village (2008); Steinhardt School of Culture, Education, and Human Development (NYU) (2009). Additionally, the festival web site (Conflux, 2010a) is quite explicit in terms of what is expected from applicants. As a festival sponsored by Glowlab, an artist-run center with limited resources, festival organizers provide interested applicants with specific details in regards to mounting projects. For example: projects must be contained within a particular radius of the city; artists are responsible for all of the legal parameters surrounding project mounting, which includes a knowledge of city laws and acquiring any necessary permits; all of the technical needs, including skills and equipment must be covered by the artists. Organizers are explicit in their expectations that artists, "are expected to be self reliant for all aspects of their projects", which includes, "securing funding, planning, permits, or any other aspect of Conflux events (Conflux, 2010b).

<sup>31</sup> Glowlab was launched in 2002 by Brooklyn based artist and curator Christina Ray (see: Christina Ray, 2010). As an experimental, web-based arts lab, the mandate of Glowlab focused on supporting "visibility and expression of artists" within the community (Christina Ray, 2010, ¶2). In 2008, Glowlab moved from Brooklyn to Manhattan with the launch of exhibition space "at the edges of SoHo", and adopted "an innovative model advancing a niche collective of artists, thinkers and technologists" (Christina Ray, 2010). In 2010, Ray re-launched the gallery once again, this time under her name.

explore the various ways in which artists, writers, and theorists are interpreting the idea of psychogeography today, at a time when the paper maps used in early dérives have been supplemented by mobile phones, GPS systems, and advanced field-recording techniques. (Ray et al., 2003, ¶1)

For Ray, the project encompasses "the meaning of living in a city", finding one's "own path in the city," and discovering "what patterns we generate" (Ray cited in Zimmerman, 2003, ¶5).

The event, which was free and open to the public, featured, eight different walks around the city using a variety of organizing principles; a neighborhood-sized chess game using humans as pieces; a public audio blog constructed from mobile-phone messages; an art exhibition featuring work in a number of media, some of it interactive; live music performances incorporating environmental sound recordings; and an unauthorized "noise parade" through the neighborhood that brought hundreds of baffled

but excited residents pouring out into the streets (Ray et al., 2003, ¶1).

Brooklyn-based artist Sharilyn Neidhardt employed psychogeography to explore different approaches to the game of chess. For the event, Neidhardt organized Human Scale Chess, a life sized version of the game. Chess Champions Jennifer Shahade (Women's International Master), and Gregory Shahade (Men's International Master) played a real time match, and each play on the board was relayed via cell phone to the human pawns, located on the street board, which constituted a partitioned space within the lower east side (Human Chess, 2003). In other words, the game between the Chess Champions was mirrored on a human scale version of the game (Human Chess, 2003).

Kate Armstrong, founding Director of Upgrade Vancouver<sup>32</sup> demonstrated her walk, PING. The project implemented a telephone menu system to deliver commands to participants, and participants could make choices based on the commands, which in turn, yielded instructions. The following is a sample command given to participants:

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<sup>32</sup> Cited as one of Vancouver's first initiatives to explore the intersection of art and technology, the Upgrade has spawned international nodes that host various art and technology events. The first international gathering was held from September 23-24, 2005 at Eyebeam in New York City (see Upgrade International, 2010a, 2010b, 2010c). Upgrade Vancouver operated from 2003-2010 (Upgrade Vancouver, 2010).

Press 1 if you are near a French tabac. Press 2 if you feel more like a flâneur today than you normally do. Press 3 if you find the neighbourhood through which you are moving to be either sad or pleasant or if you are in view of a deep pit. (Armstrong, 2003, ¶9)

The system was inspired by the internet protocol of the same name, which transmits signals across a network to verify the presence of machines on the network (Pre/Amble, 2003b). As Armstrong explains:

PING is inspired by a UNIX command which tests for the presence of another computer on a network by sending out a signal and waiting for confirmation that the computer exists. I will distribute a telephone number. You will dial it and walk out and move through the street acting upon directions that the system produces in response to your choices and to your continued existence on the network. (Armstrong, 2003, ¶3)

In following the psychogeography rhetoric, Armstrong described PING "as a tool to remix desire and urban experience", in which the "is inspired to move through the city in a new way, leading to new and overlapping

experiences and perspectives" (Pre/amble, 2003b; see Kilgannon, 2003).

### **Pre/Ambles**

On November 1 & 2, 2003, Kate Armstrong organized and curated Pre/Ambles, a festival of art and psychogeography, which was held at the Western Front Artist Run Centre in Vancouver. Similar in scope and theme to Conflux, Pre/ambles also featured similar projects; Armstrong provided a demonstration of PING, and Sharilyn Neidhardt restaged Human Scale Chess (see Pre/amble, 2003b; 2003e). Like the New York festival, the Vancouver one was free and open to the public and explored methods of psychogeography in contemporary art practices, and the festival featured both artist talks and walks. Pre/Ambles also occasioned a site-specific reworking of [murmur] for Vancouver's Chinatown, providing an aural history in both English and Chinese (Pre/amble, 2003d; Murmur Vancouver, 2010a, 2010b). The event featured, for example, Artist Run Limousine, a 24ft 1981 Cadillac Fleetwood transformed by Matt Smith and Sandra Winter into an urban interactive installation, or audiobile, in the creation of 'sonic maps'. Equipped with onboard GPS, various audio samples, sound clips, looping

ambiences and narratives, would be triggered depending on the location of the limousine.

### **Critical Inflections**

In as much as the aforementioned projects and festivals exemplify the presence of psychogeography within locative media, evidence of the concept's centrality is apparent in critical commentaries, particularly those interrogating the coupling of Situationist International (SI) tactics with technological practices implicated within military and commercial infrastructures. For example, Brian Holmes (2004a)<sup>33</sup> provides a critical assessment of the adoption of the *dérive* within locative media practice, suggesting that although the, "aesthetic form of the *dérive* is everywhere", "so is the hyper-rationalist grid of Imperial infrastructure" (2004a, ¶11). Holmes sites "proponents of 'locative media'", naming Ben Russell and Marc Tuters, to be invested in a "new kind of locational humanism, tailored to the worldwide wanderer" (2004a, ¶ 2). While not completely debunking the possibility for the civilian appropriation of military technology, Holmes is attentive to the ambiguities of projects that permit, "an inscription of the individual, a geodetic tracery of individual

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<sup>33</sup> An initial version of this text was presented at the RIXC Media Architecture conference in Riga, May 16-17, 2003.

difference", and simultaneously prove the "infallible performance by the satellite mapping system" (Holmes, 2004a, ¶10).<sup>34</sup>

Echoing Holmes's sentiment, Saul Albert (2004b) cautions that Situationist International (SI) practices need to be integrated critically, beyond terms of 'wandering a city', because locative media experiences are highly contrived (Albert 2004b, p.1). Indeed, locative media experiences are incredibly programmed and dependent on specific, or literally pre-programmed paths, and impromptu actions are non-negotiable for the user. These experiences rely on the recognizant capabilities of location-aware technologies, devices that are preprogrammed to respond to location. Accentuating a crucial difference between the Situationist International (SI) and locative media practitioners, Ben Russell (2004b) observes how,

[u]nlike the original situations we have access to a technology which can alter spaces without physical intervention, that is fundamentally about sociality. A platform for designing and

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<sup>34</sup> Holmes draws on Esther Polak's 'RealTime' project, citing it as, "[t]he most beautiful example to date...where GPS-equipped pedestrians gradually sketch out the city plan of Amsterdam, as a record of their everyday itineraries"(2004a, ¶10). Nevertheless, as Holmes argues, "the work is a fragile gesture, fraught with ambiguity" (ibid.).

supporting real complex forms of sociality  
(p.5).

Similarly, Simon Pope (2005) suggests that in as much locative media work is recurrently "advanced under the banner of psychogeography," this reconceptualization does not necessarily align itself with the original Situationist International project. As Pope offers:

There's a willful skimming of the surface of psychogeography, taking it to mean an unconstrained movement in the streets, and apparently less of an alignment with the wider project of anti-urbanism. This can leave an impression of a practice whose relation to 'the city' is closer to the disinterestedness of Conceptualism than the supposed engagement of the SI. (2005, p.6)

In questioning, on the one hand, why the SI framework is attractive, and on the other, obstacles associated with its adoption, the critiques I have paraphrased, while important to the development of a larger critical discourse of locative media, remain acritical of psychogeography in general. By this, I am suggesting that two levels of

critique are necessary. The first should account for the adoption of psychogeography as a theoretical and conceptual framework within locative media practice, and the second, needs to interrogate the paradigm itself. The psychogeographic project is haunted by the spectre of the flâneur; a specific historical subject coded as male/white/middle class, and in possession of enormous privilege. The flâneur is imbued with the authority to traverse multiple public spaces and in a multitude of ways, be it for pleasure or protest. It is a body not made suspect. Thus, the acritical resurrection of psychogeography necessarily revives a spirit of flânerie that is disassociated from contemporary identity politics. The preceding section accentuates, I think, the perilousness for critical deliberation of theoretical paradigms that inform locative media practice. This issue became apparent in a 2004 debate on the issues of critical spatial practices in new media culture on the [Locative] Listserv.

#### **QUESTIONING THE FRAME**

In "Questioning the Frame: Thoughts About Maps and Spatial

Logic in the Global Present", Coco Fusco (2004a) examines the utopian rhetoric of 'new media mantras',<sup>35</sup> in which networking technologies affect contemporary political and cultural life. Fusco is critical of the "technocentric rhetoric of networks and mapping" (Fusco, 2004a, ¶9), particularly idealistic interpretations, which insinuate that forms of critical agency are propelled by networking technologies, and in ways that differ profoundly from campaigns of the past (Fusco, ¶2). Positioning political engagement on a continuum, Fusco locates for instance, the "alienation caused by multinational corporate domination (otherwise known as Empire)", which many middle-class young adults in the Global North feel, "as the last chapter in a long history of reactions against imperial projects" (Fusco, 2004a, ¶11). The crux of Fusco's argument however, concerns the manner in which practices of mapping have been

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<sup>35</sup> Fusco later revealed that the text was actually a commentary based on a lecture she had given at the School of the Art Institute of Chicago in November 2004. The series entitled, MAPPING/CULTURE/BORDER/HACKING/ was described accordingly:

This lecture series examines the work of artists, artist-collaboratives, and film/video makers whose works address or proceed from shifts in articulations of global culture, politics of the border and dilemmas of transnational or diasporic identities--identity as a spatial concern. Special attention will be given to artists who use the gesture and organizational logic of mapping, cartographic sciences and the grid to locate identity as well as its displacements. (Fusco, 2004b, ¶4)

This commentary, as she explained, was prompted by the lecture series description, which she found, "so baffling and over laden with jargon" (Fusco, 2004b, ¶3).

assimilated into new media culture (§12). “[I]n the context of the art world,” writes Fusco, “maps have come to abstract and thereby silence individual and group testimony” (Fusco, 2004a, §13). Such a “fetishizing of spatial extremes” (§14), privileges “super-human sight, of safe distance and of omniscience” (§15), as opposed to “the view of the world from the ground” (§16) (i.e. to lived experiences). For these reasons, one should “proceed with caution” when applying terminology of ‘the networks’, what Fusco diagnoses as “a catch-all phrase for modes of communication and exchange facilitated by the internet” (2004a, §1). To extol network rhetoric, is to bestow primacy to space and simultaneously downplay time (i.e. history), which subsequently,

evades categories of embodied difference such as race, gender and class, and in doing so prevents us from understanding how the historical development of those differences has shaped our contemporary worldview. (2004a, §2)

Attentive to the manner in which residues of domination exist and persist in the contemporary present, Fusco is concerned less with who (is mapping), and how (it is mapped), and focuses specifically on what (is mapped). In

other words, Fusco *questions* how these mapping practices *frame* (or not) the experiences of specific groups, and how strategies of domination are elaborated and diversified through such mapping practices (see also: Fusco, 2002, p. xvi).

The piece was widely circulated within new media circles, including the [Locative] Listserv. In fact, without mentioning locative media,<sup>36</sup> Fusco managed to pinch a nerve. The piece incited an intense discussion, beginning with a post from Palli Thayer. On December 16, 2004 Thayer wrote:

I just wish she would mention some of the mapping projects she's talking about. She really seems to have a narrow understanding of what artists are doing with locative media. She seems to suggest that one of the problems is that the artists have too much control over the social picture that the maps portray. And other art forms don't? I'm going to have to read this through a couple of times to make sure I really understand what she's saying but after a couple of scans it really looks ridiculous and I almost

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<sup>36</sup> It has been perpetuated as critique of locative media (see: Teodor, 2008).

get the feeling that she regrets not being a "hacker".

The following day, Ewen Chardronnet (2004) offered his opinion:

I remember reading some dialectics in her critics on "art and science" hype and "critical art ensemble trial" hype. And now the "locative media" hype... You can be sure there will be a critic on "pervasive arts" and "space arts" soon, etc. and of course better if those arts are done by white male artists.

Finally, Brian Holmes (2004b) circulated a 1400 word response on the [Locative] Listserv. In the opening paragraph, the author charges Fusco with employing a 'disciplinary lecture' in which her "unwillingness to engage with current conditions and projects", reduces "the past to a complaint". Holmes goes to great lengths to counter Fusco's claims concerning the limitations of mapping practices, arguing for instance, that certain practices, notably those of Bureau d'Études, utilize mapping techniques in order to reveal capitalist structures of domination. A significant portion of Holmes' response is devoted to a summation of his piece, "Drifting through the

Grid: Psychogeography and Imperial Infrastructure" (2004).

Elaborating on his work, Holmes writes:

I tried to show how changing conditions had made the once subversive traditions of psychogeography quite superficial, to the point where the aesthetic forms the artists were using seemed to render the very infrastructure of their projects invisible. And when I recently published that paper out of context in *Springerlin*, I took the time to name all the artists and projects in question, so as to establish the precise referents of the critique.

I wish Coco Fusco would make that kind of minimal effort, as it would bring her sharp observations into contact with actual projects, and open up a space of possible transformation.

(2004, ¶1)

It is rather odd that Holmes launches into a summary of his work, especially since Fusco does not address it. Perhaps this is precisely the point? Fusco does not address him?

The respondents overlook the crucial determinant of Fusco's appraisal of networking culture and mapping practices; the manner in which technologies are always already implicated

in infrastructures of exclusion, in which access and use are intertwined with forces such as race, gender, class, age. Fusco's critique is not rooted in gender alone. Unfortunately, their disparaging responses, which inflect a misogynistic tone, accentuate a gendered bias. Recall for instance that for Thayer, Fusco's commentary reflects her regret of "not being a 'hacker'". These assessments intimate that voicing criticisms of locative media stem from jealousy, or worse, from the desire to want to be one (a white male artist). In their respective responses, Thayer, Chardronnet and Holmes assert a phallogentric authority over the norms of critique.

Fusco's proverbial, 'rocking of the boat', points to the frailty of discursive authority (i.e. power/knowledge); it is procured through a constitutive order in which it accounts for what it claims to expose. Critical discourses of locative media impose specific norms of critique that are not only interest-dependent and manufactured within a particular nexus, but also reify specific critical practices and paradigms. If Fusco's polemic threatens the security of critical objectivity, then the reprisals expose the potency of symbolic violence: if one does not recognize (or misrecognizes) possession of symbolic power, that being

the power of consecration or revelation (Bourdieu, 1989), then it does not exist. In his response to Fusco, Holmes advocates that artists look "outside the boundaries of class, ethnicity and nationality" in order, "to delve more deeply into the diverse efforts that are being made to resist the impositions of a homogeneous control structure on the entire world" (¶7). Holmes takes attributes of class, ethnicity and nationality for granted, and he misrecognizes transcendence of such categories as universal affordances. Such a fallacy (and phallacy) is compressed by misrecognition, in which an investment (or 'self-interest') in progressive tactics (i.e. psychogeography, mapping) disavows recognition of how myths, values, assumptions, silences, and prejudices inform institutional positioning (Fraser, 2003). Or, as Marion Young (1990) has eloquently argued:

insisting that citizens should leave behind their particular affiliations and experience to adopt a general point of view, serves only to reinforce that privilege... the perspectives and interests of the privileged will tend to dominate this unified public, marginalizing or silencing those of other groups. (p. 120)

Discourses of locative media did not evolve by happenstance, though central tenants of the field appear to have evolved free from interference, as if perfectly natural. Often, in the excitement of the new, it is difficult to scrutinize favoured theoretical and practical paradigms, particularly when these paradigms, such as psychogeography, propose radical and avant-garde options . This is not to suggest that psychogeography is corrupt, rather, it is precisely in that which is taken-for-granted, by the semblance of 'critical objectivity', in which relations of power are concealed.

A radical reconstitution<sup>37</sup> of locative media that *reframes* critical concerns through a cacophony of feminist voices is necessary. Here I allude to a feminist point of view of technology, as articulated by Nell Tenhaaf (1992): "female invisibility in the discourses of technology calls for nothing less than a radical reconstitution of technology, its development and its uses"(p.24). A feminist reconstitution of locative media would have intricate

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<sup>37</sup> Here I allude to a feminist point of view of technology, as articulated by Nell Tenhaaf (1992) in, "Of Monitors and Men and Other Unsolved Feminist Mysteries: Video Technology and the Feminine". In it Tenhaaf writes:

From a feminist point of view, female invisibility in the discourses of technology calls for nothing less than a radical reconstitution of technology, its development and its uses. (p.24)

associations with other discourses and feminisms that precede it (Jones, 2003, p.142), and therefore be, "forceful, passionate, and politicized without sliding into prescriptions of what everyone else should or must do in order to be considered feminist" (Jones, 2003, p.142). A feminist intervention in locative media should be concerned with theorizing power (and the power of theorizing), and premised on interruptions, and, vocalizing assumptions and silences that are otherwise assimilated by power/knowledge.

## CHAPTER 3: SMELLS LIKE TEAM SPIRIT<sup>38</sup>

### The Conditions and Constraints of Collaborative Production

In early 2004, Canadian Heritage<sup>39</sup> announced the creation of a new funding program, the New Media Network Fund (NMRNF), as part of its Digital Futures Financial Support Program.<sup>40</sup> The object of the NMRNF was to support, “innovative applied research at the intersection of technology and culture”

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<sup>38</sup> The title is a play on the name of the lead single from Nirvana's second album, *Nevermind* (1991). According to musical folklore, the title was derived from, “Kurt Smells Like Teen Spirit”, which Kathleen Hanna (of riot grrrl, Bikini Kill, Le Tigre fame) had spray-painted on Cobain's wall. Taking it as a proclamation of their anti-establishment sensibilities, Cobain felt that it embraced the sentiments of his newly penned song. Hanna later revealed that, “Kurt Smells Like Teen Spirit”, was by no means politically charged. In fact, it was meant literally, as in Cobain smelled like Teen Spirit, the brand of deodorant worn by his girlfriend, Tobi Vail (a band mate of Hanna's). As an anecdote, this tale demonstrates, I think, the capacity for collaborative practices to be reified.

<sup>39</sup> The office of Minister of Canadian Heritage came into force July 12, 1996, following a merger between the offices of Minister of Communications, and Minister of Multiculturalism and Citizenship. Canadian Heritage is responsible for,  
national policies and programs that promote Canadian content, foster cultural participation, active citizenship and participation in Canada's civic life, and strengthen connections among Canadians. (Canadian Heritage, 2009a)

In order to fulfill its mandate, Canadian Heritage manages policies and programs that include: Arts and Cultural Industries, Heritage Objects and Spaces, Holidays, Celebrations and Commemorations, Anthems and Symbols, Monarchy in Canada, Exchanges, Jobs and Studies, Cultural Diversity and Rights, Official Languages, Sport, and International Activities. Additionally, Canadian Heritage provides numerous Financial Support Programs, such as: Aboriginal Peoples' Program, Arts and Culture, Canada's Heritage, Citizen Participation, Digital Future, Multiculturalism and Human Rights, Official Languages, and Sport.

<sup>40</sup> There were six funding categories in the Digital Future Financial Support Program. These were: Canada New Media Fund, Canadian Memory Fund, Community Memories Program, Gateway Fund, New Media Research Networks Fund, Partnerships Fund, and Virtual Museum of Canada Investment Program.

(Canadian Heritage, 2007b, p.3).<sup>41</sup> A prerequisite for funding demanded a network organizational model, in which a group of public and private sector partners<sup>42</sup> consolidate into a working group.<sup>43</sup> Therefore, the grant was directed at partnering universities with industry and community organizations, and focused on new media technological innovation and content development (Longford, 2007). As specified in the NMRNF's *Program and Application Guide*, a network would,

develop a research program made up of component projects centered on a particular theme that is relevant to the cultural sector and promotes innovation in new media or interactive digital content.

It was necessary that research "result in technological innovations<sup>44</sup> for use in the cultural sector", specifically, "tools, processes, and software that can be used in turn in creating, managing, or delivering digital cultural content" (Canadian Heritage, 2007b, p.3).

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<sup>41</sup> Innovation had to be in the realm of digital cultural content.

<sup>42</sup> As stipulated in the guide, these are: "Canadian organizations, including private-sector small and medium-sized enterprises active in the cultural new media sector, non-governmental research institutes, public educational institutions with a research mandate, and not-for-profit arts and cultural organizations" (Canadian Heritage, 2007b, p.3).

<sup>43</sup> The purpose of which was to promote shared knowledge, resources, and facilities.

<sup>44</sup> Innovation had to be in the realm of digital cultural content.

A small group of researchers, including Michael Longford, Dr. Barbara Crow and Dr. Sara Diamond, authored a grant application and in it, they proposed the Mobile Digital Commons Network; a network project that consisted of five smaller projects, each of which involved the research and development of mobile applications for Canadian public spaces. The grant was successful and funding was to be allotted for two years. However, from the time the application was submitted, to notification of acceptance, and commencement of funding, a federal election was called, and the funding timeline was reduced to eight months.<sup>45</sup> Despite the condensed funding period, network researchers completed the bulk of proposed work and reapplied for the same grant, and with success. Therefore, MDCN existed in two incarnations, MDCN I (2004-2005), and MDCN II (2005-2007), and funded for a total of three years. The focus of this chapter however, is on MDCN II, though MDCN I is referenced occasionally.

As a national network, the Mobile Digital Commons Network amalgamated artists and designers, computer scientists,

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<sup>45</sup> As background, in August 2002, Prime Minister Jean Chrétien informed the public of his intent to step down as Prime Minister in February 2004. In November 2003, Paul Martin won the Liberal Party of Canada leadership, and is sworn in as Prime Minister in December 2003. In May 2004, Parliament is dissolved for a June 28 election, and Martin was re-elected and the Liberals win a minority government.

engineers, and communication scholars from Concordia University, Banff New Media Institute, Ontario College of Art & Design, York University, and Hexagram. It was constituted by eight research projects,<sup>46</sup> with a total of 68 personnel trained in the design, development, production, and assessment of location-based mobile applications. To be precise, research and development focused on a range of technical, conceptual and methodological innovations for mobile experiences in outdoor public spaces. And the applications to emerge from this research agenda included: a guided natural history walk for a portion of the Hoodoo Trail in Banff National Park; a historical ghost capture game in Montréal's Mount Royal Park; an SMS messaging broadcasting system for large urban screens; an audio soundscape and sound walk for an urban park in Toronto. The project applications were authored using the Mobile Experience Engine (MEE), software developed by network engineers, which allowed for the creation of mobile applications in the design process. The final research initiative of the network, EMU: Evaluation, Mobility, Usability, the qualitative research hub of the network.

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<sup>46</sup> Please see Appendix 2 for a visualization of MDCN projects.

In August 2005, I interviewed for a temporary research position with Michael Longford, a professor in the Design and Computation Department at Concordia University. The post entailed assisting Longford in the compilation of a research report, which focused on the activities of a Canadian research network. As it turned out, I was hired, and began employment immediately. The work itself was self-explanatory, yet the research endeavours of this research network – the Mobile Digital Commons Network – were beyond the scope of my previous, and what were at the time, current research interests. A considerable amount of my first week was spent ‘Googling’ key works such as, ‘WiFi’ and ‘Bluetooth’, and slowly, I grasped the scope of the network. At the cessation of my work term with Longford,<sup>47</sup> I was hired by Dr. Barbara Crow and Dr. Kim Sawchuk, the project leads of EMU: Evaluation, Mobility, Usability, the user integration arm of MDCN. Then, six months after, while still working with EMU, I was employed full time on *The Haunting*,<sup>48</sup> under the direction of Longford, as a means to

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<sup>47</sup> Work included completion and submission of the report to Canadian Heritage, and assisting in the co-ordination of a network meeting.

<sup>48</sup> *The Haunting* was a cell phone based experience designed for a portion of Mount Royal Park. Media files were stored on Nokia phones and content was triggered in-situ based on GPS co-ordinates. For specific details, please see ‘*The Haunting*’ in the glossary.

integrate EMU's research into the design and production process.<sup>49</sup>

The Mobile Digital Commons Network was not a research site I abandoned once sufficient data was collected. Having been employed by the network over the course of 3 years, my experiences necessarily shaped (or not) analysis. I acknowledge my proximity to the research context, and recognize the pressures associated with such a position, namely, a sense of obligation to my colleagues. While this burden of representation is never fully shed, it has not compromised my capacity to occupy a critical position. I was perpetually cognizant of my competing positions, taking seriously Haraway's advice; "one cannot relocate in any possible vantage point without being accountable for that movement. Vision is always a question of the power to see"<sup>50</sup> (Haraway, 1997, p.287).

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<sup>49</sup> My duties increasingly assumed that of a project manager, and I assisted Longford in the day-to-day administrative tasks, such as organizing meetings, scheduling field-work trips to the park, and as a liaison with the EMU team for workshops and field trials, and when organizing production weekends with our OCAD colleagues. I also assumed the task of 'costume designer', assembling historically accurate costumes for video shoots. And finally, I played the role of one of the characters, 'Tomasina'.

<sup>50</sup> "[N]ot a sign of weakness or deficiency, but a manifestation of a vision of moral maturity that views the self as being immersed in networks of relations with others" (Benhabib, 1988, p. 78)

This chapter explores my situated perspective of the Mobile Digital Commons Network, as an individual privy to network activities and practices, and also, as a researcher examining MDCN's practices and processes of production in relation to the field of locative media. Further, I engage with a critique (Hanke, 2009) that implicates the network in 'academic laissez-faire', a form of knowledge production willingly subservient to the neoliberal economy (p.555). To an extent, MDCN is passed off as yet another highly funded project on emerging technologies, or, a cog in the neoliberal wheel propelled by the autonomous power of capitalism and new communication and information technologies (Negraponte, 1995; Barlow, 1996; Dyson 1998, in Mosco, 2005, p.68). In this chapter, I engage in a productive dialogue with Hanke's work, and impose my 'experiential authority' (Clifford, 1988: 35) on the Mobile Digital Commons Network, in order to comprehend the issues raised by Hanke from within this location of practice.

### **Definitions**

Scrutinizing the infrastructures that enabled the formation and sustenance of MDCN demands attentiveness to its structuring terminology. In what follows, I define the conceptual terms that underscored and configured MDCN. This

bureaucratic background is indispensable, I think, because these governing conditions both enabled and constrained a certain mode of locative media production within a neoliberal economy.

### *Network*

A 'network' was predefined as consisting of at minimum, "four distinct partners", one of which had to apply as the host organization. This entity would then serve as the principle contact with Canadian Heritage, as well as coordinating all aspects of the network. Fulfilling this role in the Mobile Digital Commons Network was Concordia University, under the supervision of Michael Longford.

### *Cost-Shared*

The network's partnership with Canadian Heritage was not akin to a grant. The New Media Research Networks Fund was a 'cost-shared program'. A requirement for funding concerned matched funds, meaning, applicants pledged cash and in-kind contributions to the research program, matching a minimum of 25% (in cash) of eligible costs (2007b, p.16).<sup>51</sup>

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<sup>51</sup> However, "a salary that is paid to an individual who is working directly on the research can be considered a cash contribution (as a source of revenue to the Network)." As explained in the Program and Application Guide,

the organization paying the salary (must be pro-rated to the time the employee actually spends on the research if

Therefore, given that MDCN received \$1,152,715 in funding, the network matched \$657,492. The distribution of these funds were governed by a 'categorical threshold percentage', which stipulated the percentage of funding allocated to items such as new equipment and software, translation and interpretation, salaries and benefits, and legal fees.

### *Network Agreement*

A Network Agreement, a legally binding document that specified the rights and responsibilities of governing partners, was signed by MDCN's principle partners, which included, the Ontario College of Art and Design, York University, the Banff New Media Institute. Participant institutions were: Hexagram,<sup>52</sup> Blister Entertainment,<sup>53</sup>

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it is not full-time). For example, if a company employee is working on one of the projects 25% of the time, then 25% of his/her salary from the company can be considered a cash contribution to the project by the company. Any such claims of salaries and time must be verifiable by an auditor. It is strongly recommended that organizations expecting to claim salaries implement a system to track these costs – such as keeping detailed timesheets. (2007b: 9)

<sup>52</sup> An institute for Research-Creation in Media Arts and Technologies, Hexagram was "[e]stablished in 2001 to provide state-of-the-art equipment, resources and management infrastructure to new media art and design researchers" at Concordia University and the Université du Québec à Montréal (UQÀM), the Institute now includes researchers from the Université de Montréal and McGill University" (Concordia, 2010b).

<sup>53</sup> During MDCN, Blister Entertainment was a wholly owned company of Calgary based KnowledgeWhere Inc. In August 2008, KnowledgeWhere was acquired by Useful Networks; a "Denver-based company that delivers innovative mobile location technology products to end users via the Internet and mobile carriers." Useful Networks, "is a privately held

BravoFact!,<sup>54</sup> Université du Québec à Montréal (UQAM), TRILabs,<sup>55</sup> and New Emerging Wireless Technologies (NEWT).<sup>56</sup> I differentiate between the institutions in this manner because in accordance to the New Media Research Network Fund, there is a fundamental difference between a 'partner' and a 'participant'. The former, "makes a contribution that is integral and adds a distinctive value to the overall research program" and has "a role in the decision making process and governance of the network" (2007b, p.4), whereas the latter contributes to "the work of the Network (financially or otherwise) but is not involved in the decision-making processes or governance"(2007b, p.4).<sup>57</sup>

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subsidiary of Liberty Media. Liberty Media Corporation owns interests in a broad range of electronic retailing, media, communications and entertainment businesses" (Kirchner, 2008; see also Liberty Media, 2010; KnowledgeWhere, 2010).

<sup>54</sup> Established in 1995, Bravo!FACT (Foundation to Assist Canadian Talent) is funded by Bravo!, CTVglobemedia's Canadian national cable arts channel. The foundation provides grants for the production of shorts across Canada (Bravo!Fact, 2010).

<sup>55</sup> A not-for-profit research consortium for telecommunications and information technology research with five labs across the Prairie Provinces, which employ university professors, graduate students, industrial partners, and staff researchers (TRILabs, 2010a).

<sup>56</sup> As a division of TRILabs, NEWT was established in Calgary in 2002 by HP, IBM, Nortel, Sun and TELUS, and with support from TRILabs, CRC, Calgary Technologies Inc., Alberta Innovation and Science, and Western Economic Diversification Canada. It is, "a not-for-profit wireless technology commercialization support centre providing hardware and software development and test support to developers and users of wireless products and services with lab facilities, test networks, technical staff and industry contacts" (TRILabs, 2010b).

<sup>57</sup> However, this does not include "individuals or organizations hired under contract"(2007b, p.4).

### *Deliverables*

'Deliverables' is bureaucratic vernacular to denote the network's research output (Canadian Heritage, 2007b, p.14).<sup>58</sup> Defined at the outset, the deliverables were incorporated into the Network Agreement, and were therefore contractual. In the context of the Mobile Digital Commons Network, every project had a set of deliverables for each fiscal year (2005-2006 & 2006-2007).<sup>59</sup> Essentially, the deliverables, albeit contractual, defined the research goals.

### *Reports*

The network reported to Canadian Heritage on a quarterly basis. The core material focused on the deliverables, specifically, detailing the measure of progress (Canadian Heritage, 2007b, p.14), yet also chronicled network dissemination activities, which included conferences, workshops, talks, publications, and other communications initiated by network members, including public events, press releases, guidelines, survey result, and other

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<sup>58</sup> These do not include activities undertaken as part of the research process (Canadian Heritage, 2007b, p.14).

<sup>59</sup> For the project specific deliverables, please see "Deliverables' in the appendix.

reports.<sup>60</sup> As part of the process, the network submitted financial reports, which accounted for the distribution of funds.<sup>61</sup>

## **RESEARCH PRACTICES**

In "Reflections on the Academic Milieu of Media Studies", published in the *International Journal of Communication* in May 2009, Bob Hanke "[i]mports a Foucaultian perspective on governmentality into arts education, communication studies, and the knowledge economy," and appraises the extent in which, "events and elements of media studies have become complicit in neoliberal discourse" (2009, p. 551). A central tenet of Hank's critique is that in spite of the network's invocation of "a digital 'commons' against the enclosure of the commons and the monopolization of the wireless spectrum by telecommunications corporations" (p. 566), MDCN pinned "its democratic hopes on the Mobile Experience Engine (MEE)" (Hanke, 2009, p.566). Indeed, the

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<sup>60</sup> MDCN dissemination activities include: 65 conferences/workshops/talks, 33 publications and 35 'other' communications.

<sup>61</sup> Michael Longford, as the principal investigator at the host institution, was responsible for overseeing the distribution of funds across the network, and in turn, the reconciliation of these funds. The process began within the Network. Mich Sardella, Administrator & Faculty Liaison in the Department of Design and Computation Arts, managed the budgetary concerns of the network. Mich compiled the reconciled budget, and would send it to Nancy Sardella, Senior Financial Officer in Financial Services. Nancy approve the document and forward it to her supervisor, Chao Ling Pan, Project Accountant Manager in Financial Services. Following Chao's verification it was submitted to Canadian Heritage.

network was entangled within debates concerning issues of privatization and the electro-magnetic spectrum, and advocated non-proprietary software. For instance, the Mobile Experience Engine was developed in part, as a response to the convoluted state of the commercial mobile platform world. Cell phones for instance, run on as many as eight<sup>62</sup> different operating systems, meaning that devices with similar attributes have widely differing capabilities. Therefore, streamlining applications<sup>63</sup> is arduous; the tools must be continuously redesigned to fit the operating system. During MDCN I, the network employed the Mobile Bristol<sup>64</sup> toolkit,<sup>65</sup> a 'drag and drop' graphical user interface that authors location-based experiences for the Hewlett-Packard iPAQ.<sup>66</sup> Despite the ease of use of HP's toolkit, its limiting factor was that operability necessitated an iPAQ. The engineers built the MEE as an alternative to the device specific Mobile Bristol toolkit,

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<sup>62</sup> The number of operating systems has grown since MDCN.

<sup>63</sup> This of course was before iPhone 'apps' feature, in which users create applications for the device.

<sup>64</sup> The Mobile Bristol/HP toolkit is explained in great detail in the proceeding chapter.

<sup>65</sup> The toolkit emerged from the Mobile Bristol program, a £3.2 million venture between, Hewlett-Packard, the University of Bristol, and The Appliance Studio, which investigated mobile devices and pervasive information technologies in relation to urban and public spaces. As defined by its developers, Mediascape is "a commercially important class of media-oriented, context-sensitive, mobile applications" (Hull et al., 2004, p.1), and are "largely concerned with delivering or capturing digital media in response to contextual cues such as the user's location" (Hull et al., 2004, p.3).

<sup>66</sup> The HP iPAQ is a Personal Digital Assistant (PDA).

and an open source alternative. As a software tool for generating code, the MEE creates a layer of code that can be compiled for different (mobile) platforms.<sup>67</sup> For instance, specific parameters (or mathematical variables) for an interactive experience are input in XML,<sup>68</sup> and the MEE generates an appropriate software application. The novelty is that the original layer of the software can then be rewritten for different mobile platforms. However, use of the MEE required advanced knowledge of coding, demonstrating that open source does not equate accessibility (see: Sampson, 2009, ¶2; Galloway & Thacker, 2007).

Technologically, MDCN was entangled within debates concerning issues of privatization and the electro-magnetic spectrum, and in addition, actively participating in the open-source movement as an alternative measure to proprietary software. However, the doctrine of the commons

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<sup>67</sup> The MEE essentially modifies or 'hacks' into a cellular platform.

<sup>68</sup> Extensible Markup Language is a version of HTML. According to the World Wide Web Consortium (W3C)(2004) XML is a class of data objects that,

partially describes the behavior of computer programs that process them. XML documents are made up of storage units called entities, which contain either parsed or unparsed data. Parsed data is made up of characters, some of which form character data, and some of which form markup. Markup encodes a description of the document's storage layout and logical structure. XML provides a mechanism to impose constraints on the storage layout and logical structure. (World Web Consortium, 2004)

flourished beyond the technological, extending into research processes and practices. The Evaluation, Mobility, and Usability (EMU) team, approached its methods of research and dissemination as a means of fostering shared knowledge. This was not only in terms of material made available, but also in the tools employed in the research process and dissemination. An alignment with the commons was fundamentally about principles and values, notably, neoteric processes in the creation and sustenance of collaborative actions.

### **The Commons**

In their co-authored introduction to *Understanding Knowledge as Commons* (2007), Charlotte Hess and Elinor Ostrom chart two intellectual histories of the commons: 1) the history of enclosure;<sup>69</sup> and 2) the history of openness and inclusiveness.

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<sup>69</sup> Garret Hardin (1968) articulated concerns of overpopulation, examining 'the tragedy of the commons' of a communally shared field, on which individuals permitted their cattle to roam freely. Hardin argued that such an arrangement would lead to a degradation of the field as a common resource because individuals would ultimately put private gain - that being to raise more cattle, thereby consuming more grazing space - over collective loss. Since the publication of Hardin's piece, supporters of privatization have applied 'the tragedy of the commons' as demonstrative of how co-operative forms of ownership pose a threat to the management and sustenance of the commons. However, the threat of enclosure is not merely one focused on 'subtractive' resources, in which individual use reduces the benefits available to others (Hess & Ostrom, 2007, p.5). "[T]he narrative of enclosure", as Hess and Ostrom explain, is also "one of privatization", such as, the "ability of new technologies to 'capture' resources that were previously unowned,

## *Enclosure*

The first history, which the authors posit as the European tradition, concerns the threat of enclosure, or 'capture' of resources. For instance the wireless spectrum<sup>70</sup> is a 'resource' that Canadians not only benefit from, but also rely on within everyday life as a foundation to multiple communications infrastructures. The current regulatory framework however, is largely based on formative radio engineering, when interference was a ubiquitous problem (Shirky, 2005, ¶10).<sup>71</sup> Paradoxically, as radios became smarter and corrected interference, broadcasting policies became increasingly static.<sup>72</sup> In Canada, regulations on the

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unmanaged, and thus, unprotected" (Hess & Ostrom, 2007, p.12; see also: Kluitenberg, 2003).

<sup>70</sup> The radio spectrum is the regulated portion of the electromagnetic spectrum. Its boundaries (radio waves) range from 9 kHz (kilohertz; thousand cycles per second) up to 3000 GHz (gigahertz; billion cycles per second). The frequency (2.4 GHz range), which is license exempt, falls within microwave portion of the spectrum, which includes the entire Super High Frequency (SHF) band, or 3 to 30 GHz.

<sup>71</sup> Early radio hardware was unable to differentiate between two transmissions on the same wavelength (Lessig, 2003, ¶3-4). To remedy this inconvenience, and ensure unhindered reception, limits – in the form of government regulation – were placed on the use of a particular frequency. In order to use a frequency, one had to own it (Shirky, 2005, ¶14). Over the last century, progress in radio technology has eradicated the obstacles of interference, and, as Lawrence Lessig (2003) summarizes, "new technologies for transmitting radio signals effectively allow two transmitters to use the same channels at the same time" (¶4).

<sup>72</sup> In *Television*, Raymond Williams (1974) notes how the relationship between broadcasting technology and broadcasting policy is not predetermined or inscribed within a technological form, rather:

The technology of broadcasting was introduced as a marginal element in very complex social structures. It is indeed difficult to realize how marginal it then seemed, as we look back from a period in which broadcasting policy has become a central issue of politics. (p. 32)

Thus, Williams' observations still hold true.

radio spectrum have been in effect for over a century, however, the spectrum auction<sup>73</sup> is a recent phenomenon, the outcome to a June 1996 amendment to the Radiocommunication Act. This modification granted the Minister of Industry explicit authority to hold spectrum auctions in the allocation of licenses (Industry Canada, 2001).<sup>74</sup> As Graham Longford (2007) explains, "Industry Canada regulates spectrum and the issue of licenses for the use of certain frequencies on an exclusive basis" (p.96). License-holders must meet certain conditions set out in their licenses (e.g., non-interference with neighbouring frequencies, Canadian content obligations for broadcasters), and are subject to periodic review (2007, p.96). A large portion of the spectrum – the largest in fact – is licensed and regulated, and handled mostly by corporate<sup>75</sup> interests, and of course, the government. In part, corporations are entangled in broadcasting policy and regulation because spectrum management is so costly. There is however, a small

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<sup>74</sup> In 2006, the federal government instructed the CRTC to rely on market forces when fulfilling the policy objectives of the Telecommunications Act.

<sup>75</sup> Both Shirky (2005) & Lessig (2001) attend to concerns over "wasteful hoarding of the spectrum" (Lessig, p.242). "These organizations", as Shirky clarifies, "use only a tiny fraction of this spectrum, treating the rest of it as "white space", a buffer zone against competition from other signals" (Shirky, 2005, ¶14). The author notes that the disproportion "between used and unused signal is becoming more extreme as broadcasters transition to digital signals, which requires an even narrower slice of frequency than analog signals do" (¶14). See Taylor (2010) for a comparative analysis on the digital television transition in the United States and Canada.

segment of spectrum that is unlicensed, free, and obtainable for public use (Crow & Sawchuk, 2008a, p.98). "It is this portion of the spectrum", write Crow & Sawchuk, "that is primarily available to wireless technology activists and not-for profit and community-based organizations" (p.98). Critics of the auction process voice concern over the exorbitant amount of capital required for bidding on spectrum allocations (Crow & Sawchuk, 2008a, p.97). Such a practice forecasts a future in which Canadian interests<sup>76</sup> are for sale to the highest bidder<sup>77</sup> (see: Longford, Moll & Shade, 2008).

In MDCN I, network projects engaged directly with 'the wireless commons'. For instance, the Digital Cities project, under the direction of Michael Longford, assisted Île Sans Fil (ISF),<sup>78</sup> a non-profit community wireless group in Montréal, with the expansion of their wireless network. By the end of MDCN I, the wireless network expanded from eight to over 100 hotspots, with free internet access in public places across Montréal, including cafes, libraries

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<sup>76</sup> I.e. telecommunications services vital to economic, cultural and social lives

<sup>77</sup> Moreover, a successful bidder is also the strongest competitor, thereby decreasing competition in an already competitively starved market.

<sup>78</sup> Translated as 'wireless island', ISF's WiFiDog OS Software has been implemented by over 30 community wireless networks across four continents (see: Île Sans Fil, 2010 & WifiDog, 2010).

and community centres. And despite the limitations of the Mobile Experience Engine, the research and development around wireless technologies, particularly with the expansion of the ISF network and development of environmental sensors, demonstrates, even if in a limited capacity, how the availability of a portion of the spectrum for 'play' may encourage non-commercial research and development in parallel to vested and regulated interests.<sup>79</sup> Additionally, Dr. Barbara Crow and two research assistants, Candice D'Souza and Samantha Moonsammy, conducted extensive research on the wireless spectrum, comparing Canadian legislation to the European Union, Finland, Japan, the United Kingdom, and the United States. Research materialized into a report, which provided summaries and recommendations on the mobile communications industry from international organizations, wireless associations, research centers, social movements and non-profit

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<sup>79</sup> For example, when the microwave range was widely exempt from licensing in numerous countries, and the range was opened for public use, although within strict power limits, the low opportunity cost and international market for products encouraged technology developers to invest large sums in research and development. In turn, products such as microwave ovens, garage door openers, baby monitors, and cordless phones (see: Priest, 2005). And Wifi is also a giant demonstration project of what can happen when the problem of non-interference is left up to smart devices, rather than arranged by fiat. (Shirky, 2005, 22)

organizations. The report was submitted to Canadian Heritage and made available on the MDCN website.<sup>80</sup>

### *Shared Knowledge*

Hess and Ostrom (2007) describe the second intellectual history of the commons as pertaining "to shared spaces that allow for free speech and the democratic process" (2007, p.13). Within this trajectory, which the authors align with the United States, the commons is a shared knowledge resource and encompasses: 1) "all intelligible ideas, information, and data in whatever form in which it is expressed or obtained" (p.7); and, 2) "understanding gained through experience or study" (p.8). At stake within the knowledge commons is the enclosure, commodification and over patenting of digital information (Hess & Ostrom, 2007, p.4). Restrictions on the access and use of information, is necessarily a restriction on the use of ideas and concepts.

The Evaluation, Mobility and Usability (EMU)<sup>81</sup> team facilitated a knowledge commons both internally and

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<sup>80</sup> Intent on continuing with the policy based inquiry, a similar component was proposed in the second grant, however, Canadian Heritage, in an effort to conserve the parameters of the funding initiative, asked that the component be refined to reflect new media development and innovation. Given the network wide interest in iterative design process, what had been policy based research in MDCN I was refocused around user integration and iterative design, and collaborative research practice

externally to network. One of EMU's deliverables entailed theoretical and practical 'user integration' research. A fundamental component of this work concerned field trials, in which participants (i.e. members from the public) were invited to 'test' a project.<sup>82</sup> This was an invaluable process as it enabled a design team to assess project components, and, acquire feedback from individuals removed from the project, which widened the discursive lens. A design team would then move forward with production and in response to participant feedback. The Evaluation, Mobility, Usability team labeled the process participant-creation: the principle of user-testing, which has "tended to treat the public as potential consumers who are a fountain of information to be 'data mined'" (Crow & Sawchuk, 2008b), is replaced with an approach attentive to user-integration, which privileges the dialogic dimension (Crow & Sawchuk, 2007) of user feedback (see also: Fischer, 2003).

In conjunction with participant-creation research, the Evaluation, Mobility, Usability team cultivated resources on mobilities related material, including documentation on

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<sup>81</sup> As Crow and Sawchuk detail, "EMU stands for the three conceptual pillars that uphold the MDCN evaluation component: evaluation-mobility-usability" (Crow & Sawchuk, 2008b).

<sup>82</sup> EMU employed numerous methods to gather data including: surveys, participant observation, focus groups, and interviews. Field trials were conducted CitySpeak, *Tracklines*, and *The Haunting*.

international art and gaming projects, journal articles, policy reports, research methods, conferences and events, and participant-creation material generated by the team. Further, EMU organized the material and made it available online using wiki software. In part, EMU chose a wiki because the MDCN website had been created using the software.

The team utilized both the private and public capabilities of the software. The 'public' face of the website was accessible to all visitors, however a password was necessary in order to alter content. Conversely, the private or 'backend', which offered various functionalities such a shout box, a discussion thread, and attachment upload and download, was accessible only to EMU and by password. This private space was used as a resource deposit, discussion thread as well as an internal document repository. In this sense, EMU implemented the private portion of the wiki as a virtual meeting space. When the team had amassed a significant amount of material and developed categories, the material was organized and migrated to the public page and organized according the classificatory scheme.

As a research tool, the wiki catered to EMU's needs: one portion of the team was located in Toronto at York University, and the other, in Montréal at Concordia University, and the synchronous mode of e-mail did not support collaborative work (see also: Barratt, 2006). Elaborating on the benefits of wikis for group collaboration, particularly for individuals separated by time and place, West & West write:

Wikis present an approach to group writing and editing that is more efficient than forwarding e-mail attachments with tracked changes, a method that supports only one editor at a time and create issues with [...] multiple and conflicting versions of the same document. Wiki documents are available for editing and commenting to all members at all times. No one has to wait for a current file to be forwarded to them. (West & West, 2009, p. 3)

Implementation of the wiki proved to be successful. The tool eased the burden of the team's physical divide, and succeeded in facilitating the management of resources.

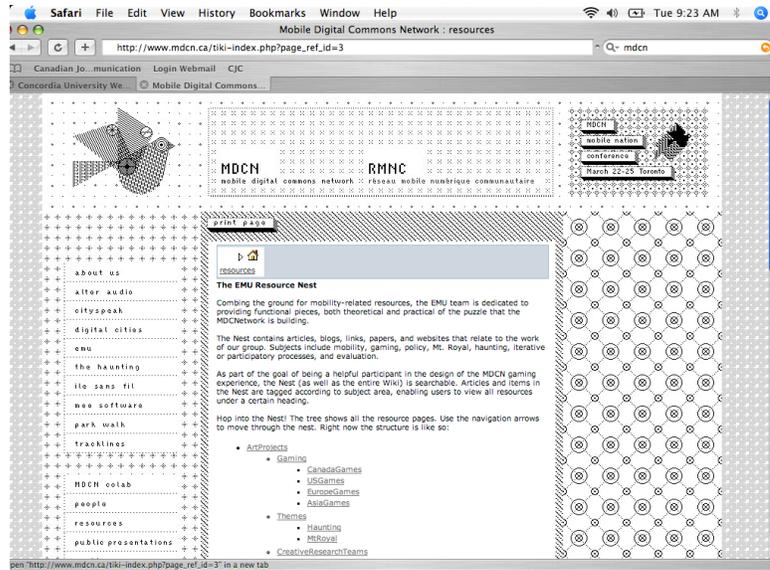


Figure 2. EMU resource page.

Within a year of collecting, managing and organizing resources, and, facilitating field trials, the Evaluation, Mobility and Usability team launched *Wi: Journal of the Mobile Digital Commons Network*.<sup>83</sup> The impetus for the creation of the journal arose from the congenital progression from collection and organization to dissemination. It was a mode of inquiry, of assessing the possibilities for integrating a publication platform into the research process, which was not quite a research blog, nor was it a formal academic publication. It was an amalgamation of the two. Supported by blogging software,

<sup>83</sup> Following MDCN, the journal was relaunched as *Wi: Journal of Mobile Media*. In this current form, the journal “publishes the latest in Canadian mobilities research, encompassing disciplines such as design, engineering, computer science, communications and media studies (Wi, 2010)

the journal offered the same functionalities of a blog. Visitors had the option to post comments, subscribe to news feeds, and repost articles through the trackback function. Much like an academic journal, *Wi* instituted an editorial team, an editorial board, and blind peer-review. Although articles maintained academic standards, namely engaging with existing research literature and offering original material, *Wi* also published interviews, event and project reviews, and art pieces, which expanded the scope beyond traditional academic publications. The journal provided a means to connect to critical concerns beyond the Mobile Digital Commons Network, and engage with a wider audience of researchers and practitioners.



**WI: JOURNAL OF MOBILE MEDIA**

**ALL ISSUES**

- ▶ Summer 2009 (10)
- ▶ Spring 2009 (10)
- ▶ Spring 2008 (7)
- ▶ Winter/Spring 2007 (8)
- ▶ Fall 2006 (8)

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**ISSUE**

**FALL 2006**

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**FALL 2006**

**LETTER FROM THE EDITORS**

09.16.06 | [Full Article](#) | [Comment?](#)

Welcome to the first issue of *Wi*, a publication initiative of the Mobile Digital Commons Network. The purpose of this online journal is to highlight and disseminate the on-going research results of two years of collaboration amongst designers, theorists, artists, engineers, software developers as a research network in mobile, wireless ...

[Read More...](#)

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**FALL 2006**

**MAPPING THE MOBILE DIGITAL COMMONS NETWORK**

09.16.06 | [Full Article](#) | [Comment?](#)

By Michael Longford

This map visually represents the disparate elements of the MDCN network. The Mobile Digital Commons Network is a national collaborative research

**Figure 3.** *Wi: Journal of the Mobile Digital Commons Network*

The EMU team participated practice-led research. Such research, as Estelle Barrett discerns, is invested in the “production of knowledge or philosophy in action”, and builds on Heidegger’s notion of ‘handlability’, in that the process demonstrates how “knowledge is derived from doing” (Barrett, 2007, p.1). As opposed to selecting a particular framework and conducting research and development in accordance to one model, *The Haunting* team worked generatively, through practice and theory. Practice in this sense, as Wenger argues, is “always a social practice”. “[I]t connotes doing, but not just doing in and of itself. It is doing in a historical and social context that gives structure and meaning to what we do” (Wenger, 1998, p. 47).

Espousing the commons to designate the cultural forms and practices engendered by the Mobile Digital Commons Network, provides what David Bollier (2007) describes as, “a coherent alternative model for bringing economic, social, and ethical concerns into greater alignment” (p.29). Many variations exist however, shared characteristics often include: 1) a dissatisfaction with the standard market narrative; 2) distrust that strict property rights and market exchange are the only way to manage a resource well; and 3) trepidation of the market’s tendency to regard

everything as a commodity for sale (p.28). Therefore, the commons offers a counter to capitalocentrism, that being, the invincibility of capitalism as an economic system, and, as a determining force that precludes the possibility for “cohabitation and contestation among multiple economic forms” (Gibson-Graham, 2006, p.xxi). The commons in this sense, accounts for a model of social production, which “works in tandem with the market, performing its own significant work” (Bollier, 2007, p.38). It confirms that “value can be created and sustained outside of the market system” (p.29). Nevertheless,

### ***Designation***

Despite the centrality of the commons, the Mobile Digital Commons Network was not immune to the forces of a larger cultural field.<sup>84</sup> In fact, it was incorporated within

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<sup>84</sup> In May 2006, the United Nations Educational Scientific and Cultural Organization (UNESCO) through its Global Alliance for Cultural Diversity designated the city of Montréal a UNESCO ‘City of Design’, as part of its Creative Cities Network, another project under the patronage of UNESCO. The Creative Cities Network focuses on connecting “cities who want to share experiences, ideas and best practices for cultural, social and economic development” (UNESCO, 2010c). The Global Alliance for Cultural Diversity, was “[l]aunched in 2002, the Global Alliance for Cultural Diversity is a UNESCO initiative to strengthen local cultural industries and promote the diversity of cultural expressions, by creating partnerships between private, public and civil society sectors” (UNESCO, 2010a). ‘Design’ constitutes the fields of interior, industrial, graphic, fashion or architectural (UNESCO, 2010g). Cities include: Berlin, Germany (2005), Buenos Aires, Argentina (2005), Kobe, Japan (2008), Montréal, Canada (2006), Nagoya, Japan (2008), Shenzhen, People’s Republic of China (2008). In addition to design as a creative designation, UNESCO includes literature, film, music, craft and folk art media arts and gastronomy. Montréal is the

Montréal's 'culture of design', entrapped by shared sensibilities<sup>85</sup> among key (economic) actors, in and across the local design field (Leslie & Rantisi, 2009, p.183). On August 31, 2006, *The Haunting* and *CitySpeak*, MDCN's Montréal based projects, were asked to partake in 'Vitrine technologique: imaginons notre culture au future', organized by the office of the Quebec Minister of Culture and Communication, and Canadian Heritage, and hosted by La Société des arts et technologiques (SAT).<sup>86</sup> Coordinated, "to enable each participant to grasp and observe the direct impact of digital technologies on the chain of activities in the cultural and media sectors" (Government of Quebec, 2006, p.2), the event was structured by two components: the first, consisted of private meetings for government and

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only Canadian city currently part of the Creative Cities Network. (For a complete listing of cities involved, see: UNESCO 2010d. See also: UNESCO, 2010b; 2010d; 2010e; 2010f).

<sup>85</sup> As design practices and artifacts are established and reinforced through shared sensibilities, or what the authors cite as a 'placed-based aesthetic consent', a distinctive identity of the Montréal-ness of Montréal is instituted (Leslie & Rantisi, 2009, p. 183). In fact, Montréal and its design sector have become synonymous with design (Stolarick & Florida, 2006, in Leslie & Rantisi, 2009, p. 181). And design is the largest cultural sector in the province. Montréal was cited as the sixth largest center of design in North America, following New York (Leslie & Rantisi, 2009, p.181). By 2007, 20 256 jobs in Montréal were in design, reaping 'economic benefits' of over \$750 million (CDN) (UNESCO, 2009g, p.1).

<sup>86</sup> Founded in 1996, the Society for Arts and Technology [SAT] is, as stipulated on its website,

a transdisciplinary centre dedicated to research, creation, production, presentation, education and conservation in the field of digital culture. It brings together creators who work with digital technologies, fostering collaboration among diverse artistic and scientific disciplines, establishing partnerships with industry and educational institutions and promoting its members at home and abroad. (SAT, 2010)

industry delegates, and focused on digital technologies in everyday Canadian life; and the second, provided a technological showcase, to “offer a glimpse of the types of content now under development that could soon be an integral part of our everyday cultural and media landscape” (Government of Quebec, 2006, p.4). *The Haunting* and *CitySpeak* participated in the exhibition, which consisted of content demonstrations on cell phones, an iMac running project visualizations, and research assistants on hand to discuss the projects and answer queries. Additional participants included *Panoscope*, *Cyclorama*, and *SAT[o\_Sphere]*, all immersive sound projects, and DigiScreen, the Montréal-based digital cinema and distribution company, established by Softimage founder Daniel Langlois (Government of Quebec, 2006, p.7). Event delegates toured the exhibit space during morning, lunch and afternoon breaks.<sup>87</sup>

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<sup>87</sup> Important to note, I think, is that *The Haunting* and *CitySpeak* were the only projects with women. A few of the other projects reflected this unbalance in a rather Freudian manner. One of the immersive projects consisted of an apparatus that resembled the murder tool in the British psychological thriller, *Peeping Tom* (1960; see: Cohen, 1960) In the film, the protagonist lures young women into his studio under false pretenses (i.e. as models), and, as he films his subjects, he impales them (or penetrates them) with the sharpened and protruding leg on the camera’s tripod. To add to the horror, the killer not only films his murderous acts, but also forces his victims to witness their own terror in a concave mirror fastened to the lens. The contraption in the exhibition space consisted of a large concave disc on top of a sphere base. And when one peered through the sphere and into the base, one could see 360 degrees. And second project, featured an abnormally large joystick as the central device/controller. While I am certainly

In the evening, the event opened to the larger design arts and technology public, and a portion of the space was dramatically transformed into a living room, best described as a 'mashup' between IKEA and Apple: the entire space was white, including the ode to mid-century modern furniture, decorative accessories, and technology, and, an iMac assumed the position of a television. The living room provided the backdrop for the evening's opening address, which stressed McLuhan's conception of technology-as-extension-of-the-body to reinforce the manner in which a global transition in the media arts has traversed beyond industrial confines, and into the consumer market, and more specifically, *into* the private sphere of the home. In this regard, the model living room perpetuated a technological utopianism, insinuating that technology necessarily brightens our future. This glimpse into the future implied, I think, that in brightening our future, it simultaneously whitens it.<sup>88</sup> The Mobile Digital Commons Network was necessarily implicated within this logic. Its *designation* as a Canadian

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reading into the space and projects, it is nevertheless imperative to be mindful that in as much as gender is redefined, negotiated, or violated, it is still "a way to sort people", and, "a way to assign power in particular contexts" (Lerman, Oldenziel, Mohun, 2003, p.4).

<sup>88</sup> This harkens back to Coco Fusco's (2004a) sober observations concerning the exclusionary reality of the networked logic. Reverberating Fusco's sentiments, Adam Banks (2006) writes:

It is also maddeningly clear that technologies and the roles they play in [American] society are still deeply implicated in the stubbornness of [American] racism and the legacies of exclusion rooted in that racism that continue to test us. (p.xi)

Heritage funded project, and its proximity to the design community, both physically and discursively, allied the network to this larger (cultural) field invested in commercialization of culture. It was an instrument of cultural hegemony.<sup>89</sup>

Analysing the role of interpreters at Western government-funded heritage sights, Susan Ashley writes:

Heritage institutions...traditionally function as subtle hegemonic devices for the production and public representation of knowledge, meaning, and belonging. (2006, p.639)

Ashley argues that although these individuals serve as agents of cultural and communicative production (p. 640), there exists for these interpreters, the potential "to create spaces and conversation for alternative ideas about heritage knowledge" (2006, p.650). The interpreters, as Ashley details, "resist and subvert both commodification and ideological hegemony by using these spaces as local sites of conversation" (p.644). The Mobile Digital Commons

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<sup>89</sup> Culture is a resource implemented in the governing of national relations. In the preservation of international interests, culture, along with politics and economics, is one of Canada's 'three pillars' of its foreign policy, and holds a key role in Canadian public diplomacy efforts (see: Potter, 2009). In their comparative study between public diplomacy in Australia, Austria, Canada, France, Japan, Netherlands, Singapore, Sweden, and the United Kingdom, Wyszomirski, Burgess & Peila (2003) note that cultural diplomacy, is a form of 'soft power' (p.2).

Network did not operate *at* a physical Heritage site, it did however, operate *within* a symbolic one. Network members, as 'agents of cultural and communicative production', did not resist or subvert neoliberal forces per say. After all, the productive space was governed by a contract with Canadian Heritage. Yet, the New Media Networks Fund provided MDCN with a level of autonomy; while we had deliverables to meet, the methods and means in which we were to meet these deliverables were not predefined. Autonomy in this sense concerns the extent to which MDCN managed to refract external demands to its own logic (Johnson, 1993, p.14; Bourdieu, 1993; 1994). Hanke, however, cites such 'autonomy' as a symptom of neoliberal governance; as a response "to demands for more autonomy by 'supplying' individuals and collectives with the 'possibility of actively participating' in matters which had been the domain of industry or state" (Hanke, 2009, p.557). If in following Bourdieu, the overall degree of autonomy possessed by a field,

is the extent to which it manages to impose its own norms and sanctions on the whole set of producers, including those who are closest to the dominant pole of the field of power and

therefore most responsive to external demands"

(Bourdieu, 1994, p.40),

then, autonomy is not a symptom. It is a struggle. Therefore, the unfulfilled utopian rhetoric of "an unbounded interdisciplinary space and disciplinary innovation" (Hanke, 2009, p. 565), and, institutional focus on specific research agendas, are not just symptoms of neoliberalism. Rather, these are struggles over the maintenance and support of particular forms of power, which have been and continue to be reframed and labeled according to historical circumstance.

The Mobile Digital Commons Network is implicated in a neoliberal agenda, and is, as Hanke observes,

haunted by the spectre of the Canadian wireless industry monopoly and the digipreneurs who will deploy the same sociotechnical know-how and open-access resources for their own commercial interests. (2009, p.566)

However, MDCN is not a symptom of neoliberalism. Its practices reflect a struggle over the negotiation of meaning (Wenger, 1998),<sup>90</sup> which for Etienne Wenger (1998),

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<sup>90</sup> For Wenger (1998), negotiation of meaning entails both interpretation and action. It is a constant process that is marked by continuous

is a dual process of both participation and reification (p. 55). "Participation", as Wenger explains, "refers to a process of taking part and also to the relations with others that reflect this process. It suggests both action and connection" (p. 55), and is marked in terms of membership in social communities and active involvement in social enterprises (p. 54). And reification is a process through which a certain understanding is given form (Wenger, 1998, p.59).

This form then becomes a focus for the negotiation of meaning, as people use the law to argue a point, use the procedure to know what to do, or use the tool to perform an action.

(Wenger, 1998, p. 59)

Given that productive agency within MDCN was governed and structured by the Network Agreement, the practices to emerge from the Mobile Digital Commons Network were a reification of it.

In the following chapter, the location of practice is a locative media prototyping residency at the Banff New Media Institute. Despite the change of venue, struggles over the

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interaction, gradual achievement and reciprocity, and is derived from historic and dynamic, and contextual and unique cues (p. 54).

negotiation of meaning persist. This second case study highlights the manner in which the reification of technology, specifically the Mobile Bristol Toolkit, congeals human experience and practice into a technological form. Whereas this case study attended to the conditions and constraints of collaborative production, the focus of analysis in the following chapter centers on the struggles and negotiations faced by individual participants.

## CHAPTER 4: PRACTICE MAKES ALMOST PERFECT

### Participation-as-Labour

In July 2006, the Banff New Media Institute (BNMI) circulated<sup>91</sup> a call for project proposals for a co-production residency. It read:

Co-production Lab: Almost Perfect

Program Dates: November 5 – December 2, 2006

Application Deadline: June 1, 2006

Peer Advisors: Chantal Dumas, Paula Levine,  
Julian Priest

FEE: \$1,540

Almost Perfect is a rapid prototyping lab that explores the creation of pervasive mobile media in the Banff region. With the dedicated support of peer advisors, technicians, and production facilities participants can develop basic to advanced level prototypes in the areas of locative media, telematics, audio art, and responsive environments. This residency will also explore the political and social economic contexts of locative media.

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<sup>91</sup> In addition to the Banff New Media Institute's (BNMI) mailing list, the call for projects circulated via media art blogs and listservs.

Almost Perfect is a joint venture between BNMI and HP Bristol. Prototype development will be realized through the use of GPS enabled HP iPAQs and software developed by HP Research Labs Bristol.

The residency intended to provide an opportunity for individuals to conceptualize and prototype locative media projects under the guidance of Hewlett-Packard (HP). Having spent the summer engaged in research and participant field trials with the Mobile Digital Commons Network (MDCN), the residency offered an excellent opportunity to extend my research and explore location-based technologies beyond the context of MDCN. In turn, I applied<sup>92</sup> with the intent of conducting qualitative research, as opposed to prototyping a project, and from November 5 to December 3, 2006, I took

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<sup>92</sup> I was clear of my intentions in the application, and in addition to a biographical statement, project abstract, artist statement, project proposal, sample of writing, curriculum vitae and \$58 application fee, I included a detailed 'production schedule', which was essentially a research plan that focused on participant observation, interviews, and focus groups. I provide a detailed description of this process in the proceeding chapter. The Mobile Digital Commons Network paid for my flight and one week's accommodation, and in return, I assisted Dr. Barbara Crow and Dr. Kim Sawchuk with the *Tracklines* field trials, which occurred November 14 and 17, and solicited involvement from the residents, advisors, HP staff, and the general public. The remainder of the tuition fee was waved by the BNMI as 'scholarship' because I did not use the technical services of HP or the BNMI. I was provided with studio space, shared accommodations, and a meal plan, and access to the Banff Centre resources.

part in *Almost Perfect*, a locative media prototyping residency held at the Banff New Media Institute (BNMI).



**Figure 4:** Studio Door

Because of Hewlett-Packard's (HP) prominence in the day-to-day residency activities, including Mediascape software workshops, the use of HP technological devices and software applications, and the allocation of HP developers to assist in production, HP's role constitute a substantial portion of analysis. That said, this chapter is not about HP per se, rather, it addresses the productive practices instituted by the partnership between Hewlett-Packard (HP) and the Banff New Media Institute, what I have designated as participation-as-labour.

## **THE PARTNERS<sup>93</sup>**

### **The Banff New Media Institute**

Instituted in 1995 to support and cultivate the exploration of digital technologies and the arts, the Banff New Media Institute became a fundamental component in the Banff Centre's artistic offerings.<sup>94</sup> In "Researching and Presenting a History of New Media: Ten Years of the Banff New Media Institute", Sarah Cook (2005) reveals how,

[f]undamental to the BNMI is the belief that the creative sector - arts and cultural industries, in collaboration with scientists, social scientists and humanists - has a critical role to play in developing technologies<sup>95</sup> that work for human betterment. (p.2)

Day-to-day programming initiatives of the BNMI intersect disciplines such as fine arts, design, computer and engineering science, education, health, cultural industries, and the social sciences and humanities (Cook,

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<sup>93</sup> Although the partnership was primarily between the Banff New Media Institute and *Hewlett-Packard*, both Telefilm Canada, and the Canada Council for the Arts imparted additional funding.

<sup>94</sup> The BNMI operates independently, meaning it does not receive funding from the Centre. Its support structure, as founder and former director Sara Diamond explains, "combines public research funding, production funding, training and professional development funds, private sector donations and partnerships, and in kind donations from large and small companies as well as universities and other institutions" (2004, ¶48). For funding details, see 'The Banff Centre' in the appendix.

<sup>95</sup> Cook also reveals that the institute has facilitated the development of intellectual property and prototypes for cultural and commercial projects (Cook, 2005, p.2).

2005, p.1). Further, the BNMI had established a research and development agenda surrounding location-based technologies, most notably with its in-house research lab, the Advanced Research Technology (A.R.T.) Mobile Lab. Founded in 2005 to enable design-driven research into mobile and location-based media, art, technology and cultures of use, the A.R.T. Mobile Lab figured prominently in the Mobile Digital Commons Network (MDCN) with *Tracklines*; a walking tour for a portion of the Hoodoo trails in Banff National Park (Art Mobile Lab, 2007 & 2008). Beyond the formation of the lab, the BNMI organized workshops on wireless and location-based technologies, such as *Inside/Outside: Responsive Environments & Ubiquitous Presence* (2004), *Bodies in Play: Shaping and Mapping Mobile Applications* (2005), *Bodies in Motion: Memory, Personalization, Mobility and Design* (2005), and *Wireless Laboratory* (2006). Finally, the institute supported<sup>96</sup> several co-productions engaged in research and development of mobile and location-based technologies, including Teri Rueb's 'Trace' (1997, 2000), Marc Tuters and Karlis Kalnin's wireless interactive media project 'Geo-Graffiti' (2002), Paula Levine's Mediascape installation 'Between

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<sup>96</sup> Support included financial, in-kind (i.e. work space, access to specific technologies), and technical expertise.

Conflict and Resolve' (2006), and Blast Theory's co-production workshop featuring 'Can You See Me Now?' (2006).

### **Hewlett-Packard**

Hewlett-Packard's involvement<sup>97</sup> in ubiquitous computing is at the level of technological development, both in terms of hardware and software, and, Human Computer Interaction (HCI) user research. In their introduction in the *Almost Perfect* handbook, HP Labs situate their participation as, "part of a wider project we are running to investigate how locative and other context-based services might evolve based on user experience" (*Almost Perfect*, 2006, p.vii). Indeed, the residency was an occasion to extend their work with artists and in a similar capacity to the Arnolfini<sup>98</sup>/Mobile Bristol commission. In an e-mail circulated on July 1, 2003, by the Live Art Development Agency listserv, a call for project proposals offered the following information:

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<sup>97</sup> An examination of *Hewlett-Packard's* (HP) involvement in the growth of information technology over the past six-decades substantiates the company's extensive military connections and consumer market dominance, and demonstrates HP's progression into the realm of ubiquitous and mobile communication technologies. For a concise timeline of HP, see '*Hewlett-Packard*' in the appendix.

<sup>98</sup> Arnolfini is a contemporary arts organization that includes gallery spaces, a bookshop, café, reading rooms and organized activities/events. It is housed in a converted warehouse and located in Bristol's harbour side (Arnolfini, 2009).

Arnolfini would like to offer two new live art commissions:

Digital/Live Art (Research and Development)

In association with Hewlett-Packard and Mobile Bristol, Arnolfini is seeking two research and development projects to deliver innovative artworks exploring the individual's location in the city and the nature of 21st Century experience.

The research will encourage the innovative use of developing situated computing technologies exploring the fusion of digital experience and physical space.

Budget Available: £5,000 per commission, inclusive of all costs.

Timescale: October 2003 - January 2004

The objectives of the commission were to develop a Mediascape project with minimal technical support, and dispense feedback on the process to HP researchers. In turn, Zoe Irvine, a sound artist without programming or ubicomp experience, and Daniel Belasco Rogers, a performance artist with some Flash programming and GPS experience were selected (Arnolfini, 2003; Hull et al.,

2004). Both artists were allotted three weeks to prepare audio material, and one week to author and test the Mediascape. In the end, projects were cited as works-in-progress, yet were robust enough for exhibition using the iPAQ (Hull et al., 2004)

In addition to alluding to Almost Perfect as an opportunity for user research, Hewlett-Packard's introductory write-up postulated the residency as providing HP researchers with increased knowledge, "to go beyond the delivery of anything, anytime, anywhere" towards "the delivery of the right thing at the right time to the right place" (Almost Perfect, 2006, p.vii). And side from delineating their gains from participation, Hewlett-Packard proposed their contributions as the following: 1) share insights and knowledge obtained from extensive research and development in the domain of pervasive mobile media; 2) provide instruction on the Mediascape Authoring platform;<sup>99</sup> and, 3) demonstrate the capacity of "how a Mediascape can take the experience of digital sounds and images beyond the confines of PC, cinema and TV" (Handbook, 2006, p.vii).

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<sup>99</sup> Released to the public under a free for commercial use licence.

## *Toolkit*

The nucleus of the Mediascape system is the Mobile Bristol toolkit,<sup>100</sup> which emerged from the Mobile Bristol program, a £3.2 million<sup>101</sup> venture between Hewlett-Packard, the University of Bristol, and The Appliance Studio.<sup>102</sup> This research and development initiative pivoted on mobile and pervasive technologies for urban and public spaces.<sup>103</sup> The toolkit itself consists of a Windows based editing suite, which authors a location-aware application that is then downloaded onto an HP iPAQ for exhibition purposes. More specifically though, the toolkit is supported by an 'authoring environment' (Hull et al., 2004) or, a 'point and click' graphical user interface (GUI) through which a user designs a Mediascape experience for a specific location in the real world.

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<sup>100</sup> When the program ended in 2005, HP acquired the rights to Mediascapes. The toolkit is now referred to as an Mscape Suite (Mscapes, 2009).

<sup>101</sup> The program had £1.5 million of UK Department of Trade and Industry (DTI) funding until April 2005, and matched funding from The Appliance Studio and *Hewlett-Packard* (Geelhoed, 2005). Mobile Bristol was also part of the DTI funded City and Building Centre project, which also funded Urban Tapestries established to explore uses of mobile technologies in the city (Mobile Bristol, 2009).

<sup>102</sup>The Appliance Studio, founded in 1999 by two senior managers from Hewlett-Packard's European research headquarters, is a private company based in Bristol and is involved in international innovation and IP work, focusing on information application (The Appliance Studio, 2009) It was a founding member of Mobile Bristol and as a result launched a new initiation, the Pervasive Media Studio (The Pervasive Media Studio, 2009).

<sup>103</sup> Or what HP researchers describe as, "media-oriented, context-sensitive, mobile applications" (Hull et al., 2004, p.1) for "delivering or capturing digital media in response to contextual cues such as the user's location" (Hull et al., 2004, p.3).

### *Process*

First, one uploads a map of the particular site into the program. Image and sound files are then uploaded, and 'tagged' on the map. These marked locations, or 'hotspots',<sup>104</sup> can be customized according to varying criteria, most important of which is determining how an interaction<sup>105</sup> is triggered (Hull et al., 2004, p.16). Ergo, in the authoring environment, a user is required to identify four items: 1) what digital content is to be encountered by the user; 2) where the content is to be encountered; 3) how the interactions are to be triggered, and; 4) how the interactions are presented to the user (Hull et al., 2004, p.7)

### *Rapid Authoring*

As an authoring tool, the software generates or 'authors' application scripts in Mobile Bristol Markup Language (MBML).<sup>106</sup> The script itself is derived from a user's actions

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<sup>104</sup> In earlier versions of the software, the longitude and latitude of the hotspots tagged on the digital map had to be determined in-situ using a GPS receiver. Later versions of the toolkit included map alignment software. This software required a user to venture into the real space, stand in several points in the area, and indicate (i.e. point and click) one's location on the digital map as displayed on the iPAQ. The iPAQ's GPS then calculates the co-ordinates on the map based on the point and click action. Therefore, the hotspots tagged on the GUI map correspond to actual GPS co-ordinates, and when in-situ, the GPS receiver, attached to or embedded in the iPAQ, fixes with a satellite and triggers specific files at specific co-ordinates.

<sup>105</sup> When or how a user may encounter a sound or image file.

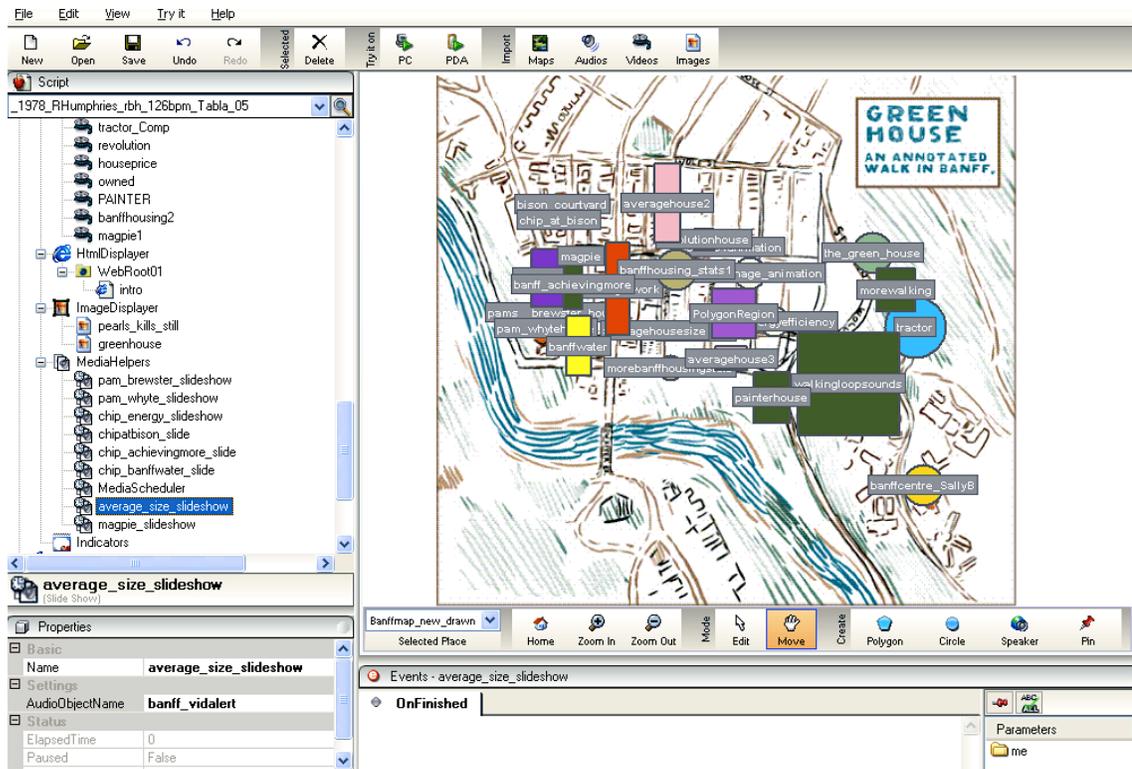
<sup>106</sup> An XML based markup language.

in the drag and drop interface. Therefore, the actions and selections in the desktop authoring environment define the script, and once downloaded onto an iPAQ, the coded specifications respond to physical criteria<sup>107</sup> and trigger 'real world' interactions. Hewlett-Packard researchers refer to this process as 'rapid authoring,' that being, "an activity that focuses on domain specific<sup>108</sup> content and behaviour rather than on underlying computational mechanisms" (Hull et al., 2004, p.3). According to researchers, the aim of rapid authoring is two-fold: first, the software "enables as many kinds of people as possible, many of whom will be non-programmers, to author novel, context-sensitive, ubiquitous computing applications" (Hull et al., 2004, p.3); and second, "the authored applications can be deployed, at least experimentally, and evaluated for their value to real users" (Hull et al., 2004, p.3).

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<sup>107</sup> i.e. a user moves in a specific direction, enters a 'hotspot' and triggers a file (image or sound).

<sup>108</sup> In software development, a domain-specific language (DSL) is a programming language implemented to perform a certain task in a specific domain (see: MSDN, 2009). In this respect, it is different from a general-purpose language in that in using DSL, one creates a specialized language (i.e. Mobile Bristol Mark-up Language) for a specific domain (i.e. Mediascape program), rather than a general purpose language that is applicable to multiple software problems.



**Figure 5.** Mediascape screen grab of, *Green House: An Annotated Walk in Banff*, by Sarah Lazarovic. Copyright: Sarah Lazarovic.

## THE RESIDENCY

### 'Magic Moments'

During the first week of the residency,<sup>109</sup> Josephine Reid, an experience design researcher from HP Labs Bristol, led the initiatory sessions on Mediascape design. The proverbial golden rule of HP experience design emphasizes context, or, the environment, specifically, that one must 'get to know'

<sup>109</sup> The core participants of Almost Perfect included four peer advisors, ten residents (myself included), and four Hewlett-Packard professionals, in addition to BNMI staff. For specific details, see 'Almost Perfect Participants' in the appendix.

a physical space prior to engaging in Mediascape production. Steve Woollard, the only resident with Mediascape design experience, had interned at HP Labs in Bristol, and was indoctrinated into experience design through his work on the Titanicscape project.<sup>110</sup> In relating his experiences, Woollard reinforced the design methodologies advanced by Reid.

It's difficult. You've got to think spatially, you've got to know everything about the environment. You've got to be a geographer or geologist. You've got to be a sociologist, you've got to be a designer, you've got to be an artist, and you've got to be a marketing guru. You've got to be all of these things and you actually have to be in touch with people. You have to know people, you have to know the environment and ingrain yourself deeply into the community. (Woollard, 2006)

Context therefore, determines not only the subject matter, but also the particular application, and overall interaction design (Reid et al., 2005a, p.3). And when a

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<sup>110</sup> The Titanicscape project involved four Northern Ireland schools. Children from age 7 to 14 were taught how to use the Mscapes toolkit and invited to make a Mediascape centered on the site of the Titanic dock. In addition to the four schools, the initiative involved the Ulster Mediascape Project lab that included HP Labs. It has since grown to involve over 20 schools and has spawned a yearly MscapesFest (Northern Ireland Government, 2008; Mscapes Wiki, 2009).

Mediascape experience is designed without appearing contrived (Reid et al. 2005b: 1), or, overly reliant on the iPAQ (i.e. technology), a 'magic moment' ensues. These are moments, according to Hewlett-Packard rhetoric, which prove to be both moving and memorable (Reid et al., 2005, p.1), and occur at points of unexpected connection between physical and virtual worlds (p.2). These 'moments' are also contingent on what HP researchers have described as 'parallel worlds', generated from both a combination, and a collapse, of virtual and physical spaces (Reid et al. 2005b). To situate this description within Human Computer Interaction (HCI) discourse, it is during a 'magic moment' when one's experience of the physical world is 'augmented' by digital technology (see: McCullough, 2005).

### *Doubloons*

Despite a concentrated emphasis on context, HP contradicted their design ethos with a demonstration of a packaged Mediascape experience called Doubloons:<sup>111</sup> a pirate adventure in which individuals sail to various Caribbean Islands in

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<sup>111</sup> The game was created by FluffyLogic (2009), a Bristol based interactive media firm, also responsible for additional Mediascape games, as well as the Mediascape Wizards website (FluffyLogic, 2009; Mscapes, 2009). In addition, the Mobile Bristol team consulted the firm during the development of the Mediascape platform in regards to interactive systems and computer games.

search of treasures.<sup>112</sup> While this successfully demonstrated how to engage with an iPAQ during a Mediascape experience, it did not sufficiently connect to the methodological concerns outlined in the workshops. In fact, it contradicted HP experience design. Granted, in order to have reinforced principles of parallel worlds and magic moments, the team would have had to create a site specific experience for the Banff Centre campus, nevertheless, it would have been more evocative of the experience design advocated in the workshops and detailed in the research reports. The trial had us (the residents) roaming the BNMI parking lot, in assorted directions, cued by the visuals and sounds from our respective iPAQs. If the goal was to create a parallel world, the chilled November weather could not have been more divergent from sailing the Caribbean Sea.

### ***Tracklines***

During the second week of the residency, the A.R.T. Mobile Lab invited residents to partake in a *Tracklines*<sup>113</sup> field

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<sup>112</sup> Walking within a demarcated space in the parking lot represented 'sailing' and the 'islands' were tagged locations within the parameters of the demarcated space.

<sup>113</sup> The project website intelligibly describes *Tracklines* as, a trail-based mobile media installation; a guided interpretive strategy in which hikers employ GPS-enabled smart phones to navigate a landscape seeded with location-based stories. *Tracklines* is not a game, per se. Instead,

trial.<sup>114</sup> The *Tracklines* production team was not only versed in Hewlett-Packard's experience design methodology, they also integrated this framework into their design practice. Therefore, in following HP, the team integrated the physical environment<sup>115</sup> into their research and design process, and in following the integrative design approach of the Mobile Digital Commons Network (MDCN), a significant portion of *Tracklines* production focused on user integration through public field trails. Within the context of Almost Perfect, the *Tracklines* demonstration offered a competing interpretation of 'locative media'.

### *Platform*

A fundamental difference between the locative media practices upheld by Hewlett-Packard, and those implemented

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it is more closely related to a museum audio tour or sound walk, and as such the project falls more properly within the emerging genre known as the Mediascape. Think of it as a kind of "walkumentary" combining elements of traditional documentary, land-based oral storytelling, and trail-guiding with new trends in mobile digital media delivery. A stroll of imagination in which single users or groups (2-3 maximum per phone) explore Banff trails through an open-ended, non-linear mode of geo-cached information access (*Tracklines*, 2008).

<sup>114</sup> Dr. Barbara Crow and Dr. Kim Sawchuk, project co-leads of the research and evaluation arm (EMU) of the Mobile Digital Commons Network (MDCN), attended the residency from November 13 to 17. The purpose of their visit was to host a seminar on experience design methodology, emphasizing the importance of user integration in the design process. Additionally, they (myself included) conducted several user integration field trails for *Tracklines*, one of which included residents, advisors, and HP staff. The trials were then immediately followed by a feedback session involving A.R.T. Lab Researchers and field trial participants.

<sup>115</sup> A portion of the Hoodoo Trail in Banff National Park.

by *Tracklines* concerned the platform. The Mobile Bristol toolkit was compatible with Windows Mobile 2003 (or newer), and free to download, albeit proprietary. And the platform used to create *Tracklines*, that being the Mobile Experience Engine (MEE), generated a script that could be compiled on different mobile platforms,<sup>116</sup> and the software was open source. Despite these variances, a crucial difference between the two concerned usability, notably, ease of use. The Hewlett-Packard software provided a relatively straightforward interface, while the MEE, still within its developmental phase, necessitated coding. Therefore, the accessibility of the MEE, even though the software was non-proprietary, was considerably reduced as use demanded specialized knowledge.

These variances were made apparent to the residents, yet, what resonated within the group during the post-field trial discussion, and, persisted as a dominant topic of conversation throughout the residency, were the general limitations of locative media, which were articulated in relation to pre-residency expectations concerning technological capabilities. These presumptions included: 1)

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<sup>116</sup> Only two platforms were tested.

masse accessibility; 2) content streaming; and, 3) editing content in-situ.

## **Technological Preconceptions**

### *Accessibility*

Describing his "first interaction with the field", Michael Heimbinder detailed his encounter with "a mobile phone tour guide that provides historical facts narrated by famous actors and actresses" (Heimbinder, 2008). "For example", clarified Heimbinder, "you can tour Ground Zero with Sigourney Weaver on your phone." Although he refrained from the tour, divulging: "I wasn't interested in that type of application; I don't want to hear Sigourney Weaver narrate 9/11 to me" (Heimbinder, 2006). He was however, "interested in the possibility of being in a specific place and having content delivered in place" (Heimbinder, 2006). The project referenced by Heimbinder, "The Rise of New York" is a cell phone tour developed by Candide Media Works,<sup>117</sup> and sponsored by The Alliance for Downtown New York.<sup>118</sup> The tour consists of sixteen points of information that are narrated by Sigourney Weaver. In order to access the information, users

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<sup>117</sup> According to Business Week online, Candide Media Works "creates Web content for media clients and develops online and wireless products" (Business Week, 2008).

<sup>118</sup> "The Downtown Alliance is striving to make Lower Manhattan a wonderful place to live, work and play by creating a vibrant multi-use neighborhood where businesses can prosper and the residential community can flourish" (Downtown Alliance, 2008).

dial a local tour number, and for an introductory price of \$5.95, all of which is donated to the World Trade Center Memorial Foundation, users can access information at any point on the tour.<sup>119</sup> Information includes historical facts, and features contemporary political figures, such as former Mayor Rudolph Giuliani, discussing the September 2001 attacks (So, 2004). Equating the "The Rise of New York" with locative media, Heimbinder had surmised that in creating a Mediascape for a specific location, anyone with a mobile device could access content. The difference however, is that "The Rise of New York" is an automated tour guide for cell phones,<sup>120</sup> and although the information is location specific, the technology employed is not context aware.

### *Streaming & Editing Content*

Darrick Baxter, a web designer interested in importing content to mobile devices, was cognizant of the technologies employed in locative media, nevertheless, "before the residency", as he explained, "I had the perception that with locative media, content could be streamed in real time, and delivered simultaneously to

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<sup>119</sup> Each stop spans roughly two minutes, and includes forty minutes of cell phone time during a two-hour walking tour, and users are allotted seven days from the time of access, to complete the tour.

<sup>120</sup> In this sense, it is very similar to [Murmur].

multiple mobile devices" (Baxter, 2006). "It was an awakening to discover", he revealed, "that we had to preload existing content onto the device" (Baxter, 2006). Similarly, Lily Shirvanee cited the inability to "edit in real time" as an obstacle. As Shirvanee explained, "a big point of locative media is being able to edit where you are, to be able to change things where you are" (Shirvanee, 2006). Given that media files were stored on the iPAQ and triggered by GPS co-ordinates, files were not downloaded, and in turn, could not be altered or uploaded to a remote server.

Despite the fact that technological preconceptions fueled misconceptions, the splintering of presumptions impelled residents to confront the egalitarian rhetoric of locative media. Diagnosing the democratic disjuncture of the field, Kurtis Lesick asserted:

[I]t isn't as democratic as the assumption is. The assumption for most mobile phone based media is that it's democratic as almost everyone has a phone. But that is far from the truth [...] for people to come out here and experience it, they have to have specialized equipment. So there isn't democratic access to it. (Lesick, 2006)

Indeed, the technological challenges faced by residents, which in part stemmed from an illusion of transparency concerning technological parameters, provoked the utopian rhetoric of locative media. In the proceeding section on project reconfigurations, it will become increasingly apparent how the emphasis on Mediascape design was a source of further mystification, and extended beyond the realm of technology.

### **Project Reconfigurations**

A significant impediment facing residents concerned project feasibility. Upon applying to the residency, artists submitted project proposals, and even though they were granted acceptance based on these proposals, the majority of projects could not be supported by Hewlett-Packard's toolkit, or location-based technologies in general. This is not to imply that participants were insufficiently prepared. In fact, all had completed a significant amount of preparatory research, that is, aside from the Mediascape software. At that time, the software was only compatible with Windows, and all but one resident were Mac users. As Sarah Lazarovic offered: "I tried to explore the Mediascape

program on my own, but I don't own a PC. I was really just hoping that I would like it" (Lazarovic, 2006).<sup>121</sup>

By the end of the first week, residents were strongly encouraged to reconfigure projects within the scope of the Mediascape platform. "When I was doing my entrance interview", detailed Lesick, "I was told that I should put my project aside and just come up with a new one, just to play with the Mediascape program" (Lesick, 2006). In order to grasp the platform, Lesick repurposed an older project into a Mediascape, thus enabling him to focus on ascertaining and employing the software, as opposed to creating original material (Lesick, 2006). Applying to the residency on account of his burgeoning interest in immersive interactive experiences, Lesick proposed 'Antenna': a multi-narrative documentary focusing on the impact of international development work by Canadians (Lesick, 2006). Lesick had intended, and also formally proposed in his application, to separate the multiple narratives across multiple mediums, such as the internet, mobile devices and television. Following the disclosure of technological parameters, Lesick revealed,

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<sup>121</sup> Throughout the residency, artists were granted access to PCs that contained the software. However, the software was pre-installed, meaning that none of the residents formally consented to the terms of use presented at the time of downloading.

In some ways I'm a little bit scared that the technology won't support what it is that I want to do [...] looking at Mediascape... I expected the genre of locative media to be more sophisticated than it is by now. Not to say that it isn't sophisticated, but those capabilities that I would almost assume to be a standard are not.

(Lesick, 2006)

The disjuncture between project proposals and actual technological capabilities, led to what Jon Cohrs diplomatically expressed as, "interesting challenges in regards to limitations of the technology" (Cohrs, 2006). Cohrs, collaborating on a project with Michael Heimbinder, was counseled, much like Lesick, to reconfigure his proposed project. That project, 'Habitat Map', originated after Heimbinder, a freelance technical writer and web designer, read a report on global climate change. The article proposed that while 74 percent of the population acknowledged climate change, only 26 percent are genuinely concerned (Heimbinder, 2006). "Environmental issues tend to be invisible until materialized in the public as symptoms", expressed Heimbinder. "I wanted to create a tool that could demonstrate how the movement of objects and processes

through space and time manifest into everyday contemporary life" (Heimbinder, 2006). For Heimbinder, a mapping project was best suited to support his objectives; those being, to materialize otherwise invisible environmental concerns, such as water or soil contamination, and, encourage collaborative action. After presenting his ideas to Cohrs, who in turn offered suggestions on how to shape the map into an interactive experience, they congealed their vision into a project proposal for a collaborative map, through which individuals could receive and transmit content, both on-line and in-situ. This would enable both individuals online and those equipped with a mobile device and in the real world, to tag and upload content to a communal map and in real time. Cohrs and Heimbinder had anticipated creating such a map for Newtown Creek.<sup>122</sup>

Needless to say, Cohrs and Heimbinder were unable to actualize what they had first proposed. "There are constraints to the technology that I wasn't aware of", admitted Cohrs. "I feel as though a lot of growth [in the

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<sup>122</sup> Newtown Creek forms one border between Brooklyn and Queens. It was one of the most heavily used bodies of water and has become one of the most polluted ex-industrial sites in the United States. And with little government intervention, that is, "until the latter part of the 20th Century, industries along the creek had free reign over the disposal of unwanted byproducts" (Newtown Creek Alliance, 2008). And if that weren't enough, the creek receives approximately 4,000 million gallons of combined sewage overflow every year.

field] needs to happen" (Cohrs, 2006). Echoing Cohrs' refined awareness, Heimbinder summarized his technological enlightenment,

What I've come to realize, especially since having conversations with people, and looking at the HP technology and the *Tracklines* platform, is that it is a lot harder to deliver content than it is to receive it. A lot of projects get around that by just using audio, which I think is problematic because it doesn't allow you the option to navigate information, it just feeds it to you.

The residency then, was not an occasion for participants to execute their proposed projects. Instead, it served as a backdrop to be trained in HP experience design. And while major complaints were not voiced – participation in the residency was a privilege after all – the calculated focus on Mediascape design imported challenges. Articulating some of these difficulties, Sarah Lazarovic also alluded to underlying pressures:

It's only a month<sup>123</sup> so I have to focus on getting the Mediascape done, but I'm also learning how to use the software. I'm trying to get used to the technology and figure out what I can do. It's hard because you're making all of this beautiful stuff but you wonder who will actually see it. (Lazarovic, 2006)

In her application, Lazarovic had proposed to prototype a 'sustainable development' walking tour for a neighbourhood in urban Toronto. And like the other residents, Lazarovic was swayed to renegotiate her project, although the revised version did not stray significantly from the proposed. In lieu of a Toronto neighbourhood, Lazarovic authored a Mediascape experience on sustainable building projects, including private homes and businesses, for the town of Banff. And, despite frigid temperatures, which induced technological glitches, Stephan Schulz and I successfully completed the tour.

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<sup>123</sup> The residency was a month long, but given that the first week involved various introductory sessions, such as general program introductions, artist talks, entrance interviews, a Banff Centre tour, information session to help acquaint residents to the centre and safety acquaint concerning climate and wildlife artist talks, and the part of the last week involved project presentations, exit interviews and open studios, time was of the essence. In addition, Mediascape workshops were scheduled every morning for the first two weeks.



**Figure 6:** *Greenhouse: An Annotated Walk in Banff*, by Sara Lazarovic. Copyright: Andrea Zeffiro.



**Figure 7:** *Greenhouse: An Annotated Walk in Banff*, by Sara Lazarovic. Copyright: Andrea Zeffiro.

Lazarovic was more than adept at designing and successfully implementing a Mediascape authoring schedule; her extensive background in media production, ranging from motion graphics, short films, in addition to successful

journalistic pursuits in both writing and illustration, pre-disposed Lazarovic to the pressures of delivering content within a static timeframe. Yet despite her successful prototype, Lazarovic voiced reservations concerning subsequent take-up of the toolkit. "My weariness," as she conceded,

is that everything has been really simple. I've been able to integrate my GPS technology and build my map and it's already on the Mediascape software. It seems so user friendly but then I'll get home and wonder how I'm going to do this. It's a very different ballgame to have the two technicians who built the program right there and help you on the fly. (Lazarovic, 2006)

### **Post Residency**

Admittedly, successful post-residency adoption of the toolkit posed numerous challenges beyond the vacancy of engineers. An authentic Mediascape experience necessitates specific equipment that is costly, despite the fact that the software is free to download. At the time of the residency, an HP iPAQ with the necessary integrated technologies, specifically GPS, Bluetooth and WiFi, GPRS and infrared, retailed at \$500. Granted, one could purchase

an unequipped iPAQ and integrate a GPS receiver, but that is beside the point. The mandatory tool is in the hundreds of dollars, and this cost reflects one device. To follow in the lead of successful practitioners, multiple devices are needed to facilitate a collective experience. Indeed, an individuated experience could be manufactured, but this runs counter to Mediascape ideology. Therefore, to acquire multiple devices, either a grant or a partnership with an institution is necessary. Hypothesizing the parameters of such a production model, Kurtis Lesick revealed:

When it comes down to it, if I'm trying to do a grant proposal or pitching a project to a client, there has to be an audience, and right now for Mediascape, it absolutely necessitates that you curate a project for a specific location and people can't just show up and access it, even if they have a PDA, which a lot of people don't have.

Further, Lesick alluded to the possibility of additional bureaucratic entanglement:

You need to supply the equipment for people to rent, or sign out, which also requires that you have a home base, like a gallery or a business,

something to be custodian to those objects, and  
it all has to be maintained. (Lesick, 2006)

And while it may not be difficult to find partnering institutions, it may be an approach many artists are unfamiliar with, or, not keen on pursuing. "I still feel like I'm a lower case artist and I don't like to depend on a lot of resources," admitted Lazarovic. Even though she could envision implementing the platform on future projects, as Lazarovic explained, "[f]or me to have to reconcile that [numerous resources] with my artistic practice is difficult because I'm not used to relying on institutional organizations and frameworks" (Lazarovic, 2006). In describing scenarios in which they are partnered with, or accountable to another collaborative entity, both Lesick and Lazarovic hint at the varying degrees of negotiation that are required to carry out the work they began at Almost Perfect.

### **Synergistic Logic**

The residency was also entrenched in a synergistic logic. The Banff New Media Institute was provided with resources – human, capital, technological – by Hewlett-Packard to host a large-scale residency. The partnership granted the BNMI sufficient autonomy to supplement programming costs,

attract and entice high-caliber advisors, and aggrandize its research portfolio. And given how the political and economic climate determines the extent to which the BNMI is funded, corporate interest and investment nourished the BNMI's program offerings. Comparably, Hewlett-Packard's partnership with the Banff New Media Institute, supplied HP with access to a group of individuals with whom the company could test its Mediascape platform. This was of particular value as the platform was in the midst of transitioning from the Mobile Bristol toolkit to the Mscape model. And such forms of investment are often a bargain for corporate partners given that similar research and development initiatives may otherwise be too expensive or unrealistic to do within the environment of the company itself (ArtsLab, 2008). Finally, situated in the midst of the collaborative exchange between HP and the BNMI were the residents, who serviced their labour power<sup>124</sup> and received access to HP professionals and BNMI's interactive media specialists.<sup>125</sup>

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<sup>124</sup> "By labour-power or capacity to labour is to be understood the aggregate of those mental and physical capabilities existing in human being, which he exercises whenever he produces a use-value of any description" (Marx, *Capital* Vol.1, Chapter 5, p.336)

<sup>125</sup> The Creative Electronic Environment (CEE) department assists artists in the production of projects, through programming, animation, and design. The CEE team specializes in Unix, Linux, Windows, and MacOS environments.

### **Participation-as-Labour**

Within the logic of late-post industrial society, it is arguable that Almost Perfect was sustained in part through 'immaterial' or 'free labour', which is "not necessarily exploited" labour as it is "willingly conceded in exchange for the pleasures of communication and exchange" (Terranova, 2005, ¶31). Instead, a differential logic of value unfolds through a reconfiguration of production and consumption. "Free labour," writes Terranova (2005),

is the moment where this knowledgeable consumption of culture is translated into productive activities that are pleasurablely embraced and at the same time often shamelessly exploited. (2005, ¶17)

However, a hindrance in diagnosing the productive activities at Almost Perfect as 'free labour' (Terranova, 2005) concerns the matter of 'knowledgeable consumption'; the parameters of exchange were structured according to participation in a residency, not in terms of labour. Taking a lead from Darin Barney's (2008) attentiveness to participatory politics, 'participation' at the residency was always-already limited to "embody and secure prevailing distributions of power and resources, rather than opening these to political judgment and contest" (Barney 2008: 99).

Participants applied to and attended the residency with particular projects in mind, yet were coerced to reconfigure those projects to fit within the scope Mediascape experience design. Granted, some of the underlying issues were due to technological inadequacies, however, the fact remains that residents were encouraged to prorogue original projects and manufacture prototypes that could be successfully tested.

In "'EA Spouse' and the Crisis of Video Game Labour" (2006), Nick Dyer-Witheford and Greig de Peuter furnish existing theoretical discourses surrounding the concept of immaterial labour, and in doing so, demonstrate the manner in which the video game industry's 'work-as-play ethos' supports the myth of digitization as dissolving the contradictions and conflicts of capitalism. While the residency was definitively removed from the video gaming industry, Dyer-Witheford and de Peuter's description of the industry's softly coercive elements and ensuing abject qualities is pertinent to this case study. In the example of *Almost Perfect*, the 'work-as-play' ethos is replaced by participation-as-work.

The productive relations governing the participatory practices at Almost Perfect were predicated on a system of exchange in which relations were obscured. That is, the residents were not simply utilizing the Mediascape toolkit to create projects, rather, they were the embodiment of utility; their use of the toolkit was in turn employed by HP to gage the use-value of the software, and, its potential success post-Mobile Bristol. All of this is to suggest that the artists did not have full ownership over their labour power, be it practice, process, or product. Value was measured in terms of the consumption of a final thing; a project manufactured with the HP toolkit and experienced via an iPAQ.

The partnership between the BNMI and HP, that being between an independently funded media art institution and a corporate entity, accentuates the challenges involved in integrating competing interests. Residents were introduced to locative media through HP's authoring toolkit, a very specific approach to locative media and ubiquitous computing in general. Throughout the workshops, the Mediascape platform endured a process of naturalization, as though its classification as pervasive technology equated pervasiveness in everyday life, and its applications

supposedly endless. I am not convinced that the residents agreed with this underlying rhetoric, particularly given that no one actively pursued the platform beyond the residency. Additionally, following the 2006 residency, HP significantly relinquished their involvement. In 2007, an intern with limited Mediascape experience was dispatched to guide the workshops, and the company outfitted residents with outdated equipment.

There are three conclusions that can be drawn from HP's withdrawal. First, HP received sufficient data and the program was discontinued. This is possible, but unlikely. Second, which has been hinted at by numerous sources, is that HP was displeased with the caliber of projects, and abandoned user testing in an arts residency contest. Third, and in my opinion more likely, by the following year, the Mscape website had launched, and was generating usability data and en masse. The website was essentially a self-sufficient residency in that it provided online software tutorials, and Mediascape prototypes, including Doubloons, which could be downloaded and tested. More importantly, users could upload their Mediascape project, and in addition, offer commentary and feedback on user projects and software. In this respect, it was economically

impractical to support another program, particularly if the website was generating the same data.

Although this chapter provided a significant overview of the Almost Perfect case study, there are two distinct yet interrelated components that comprise it. The first, which is this chapter, provides a critical analysis of the productive practices instituted by the partnership between Hewlett-Packard and the Banff New Media Institute. The second, which is the proceeding chapter, focuses on the methodological and research creation practices employed during the residency, and is predicated on the following question: if the process of consumption is also an embodiment of labour, which is to say that it is the culmination of the material and social practices and processes of production, then what is labour if a project cannot be consumed in its final mode of output, or, in this particular case, on the iPAQ? In the following chapter, I illuminate the manner in which creative analytical research practices (Richardson, 2000), what I define as engaging with technology-in-practice, or an out-of-the-black-box approach in the take-up to locative media, is also a means to reveal processes of production, and ultimately, materialize what is otherwise rendered immaterial: labour.

## CHAPTER 5: MEDIA[E]SCAPE

### Materializing Processes of Production

In exposing a dilemma with which I struggled during *Almost Perfect*, that being, the impotency of my methodological toolkit, this chapter furnishes both an explanation and analysis of the research methods and practices that informed my fieldwork. These are rather exploratory, and resonate, I think, with Laurel Richardson's notion of Creative Analytic Practice (CAP) (Richardson, 2000, p.929). In taking a cue from Richardson, creative means were administered as a method to discover and make sense of my particular (research) location (2001, p.35). In the manner that writing enabled Richardson to "record little thoughts, to revisit them and fill in the blanks, to piece them together, thought-by-thought", and ultimately, gain a "feeling of control over time and space" (2001, p. 33), the CAP method inoculated my pursuits with a renewed sense of invention and intent. In what follows, I chronicle the reconfiguration of my project, stemming from a rigid research plan, evolving into a mapping exercise, and, culminating into a choreographed walk and installation - what I have deemed as an 'out-of-the-black-box' engagement with technology.

## **RESIDENCY APPLICATION**

Acceptance to Almost Perfect was predicated on an application package, which consisted of: 1) a project proposal; 2) a project abstract; 3) a production schedule; 4) a biographical statement; 5) an artist statement; 6) curriculum vitae; 7) a sample of work; and 8) a \$58 application fee.

### **Project Proposal**

The scope of my proposed work was two-fold: 1) examine the technological practices in and through which artists explore mediation, mobility and location;<sup>126</sup> and, 2) make visible the practices and processes in the production of locative media. In proposing such a project, I postulated the work as contributing to discursive expansion of the field, and engendering a set of methodological considerations for conducting locative media research.

### **Research Methods**

To actualize this study, I devised a multi-method research model, an approach I consciously employed as good measure

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<sup>126</sup> Mediation, mobility and location emerged as pertinent themes from preliminary research, which included MDCN fieldwork and an elementary literature review. While these terms, I think, are meaningful in discourses of locative media, subsequent research and reflection shifted my perspectives, hence the scope of this thesis.

to avoid a-priori assumptions surrounding the residency and its participants (Shaffir et al., 1980). The toolkit<sup>127</sup> was comprised of participant observation,<sup>128</sup> interviews,<sup>129</sup> and a focus group.<sup>130</sup> Further, to facilitate experiential analysis and bridge subjective observations with the triangulation of data collection, I committed to the maintenance of a research journal. Also included was a rigorous research schedule, which catalogued my daily undertakings for the entire month.

#### **PROJECT RECONFIGURATION**

By the end of the first week of Almost Perfect, the residency structure<sup>131</sup> and centrality of the Mediascape platform were glaringly obvious. These revelations however, ambushed my proposed research. Given the programming schedule, which consisted of daily Mediascape workshops in

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<sup>127</sup> When writing my proposal, I was, much like my fellow residents, unaware of the extent to which Mediascape experience design would assume prominence. This is to say, that my postulations focused on production practices in general, as opposed to a particular platform.

<sup>128</sup> Participant observation, as I anticipated, would dispense 'lived insight' and 'inside perspective' (Jorgenson, 1989, p.28) into processes of production.

<sup>129</sup> I proposed to conduct interviews with Almost Perfect participants. I described the interviews as semi-structured and guided by a list of questions to serve as a conversational guide. These interviews were to be recorded, and transcribed and analyzed in order to, "determine the categories, relationships, and assumptions" of participants concerning locative media (McCracken, 1988, p.42).

<sup>130</sup> I detailed my intentions of conducting a 'focus group' towards the end of residency, which I envisioned as a group discussion, and comparable to the interviews, would be structured by series of questions.

<sup>131</sup> The organizational details concerning the residency, specifically the tutorials and workshops, were provided upon arrival.

the morning, followed by 'studio time'<sup>132</sup> in the afternoon, there was insufficient time to engage in the data collection I had envisioned. Further, the research plan, which had been designed according to preconceptions of the residency structure and not the actual context, was brandished with a design flaw: its exceeding commitment to structured data collection. In light of my de novo assessment of the residency I determined that adhering to the plan as proposed risked the omission of observational nuances. In turn, much like my fellow residents, I was affronted with the burden of reconfiguring my project.

### **Mapping**

Ensuing the abandonment of my itinerary, I found myself mapping. Well, actually, first I found myself tiling one of my studio walls with fifty 8 ½ x 11 sheets of white paper. It all came about somewhat happenstance and transpired during an interview with Julian Priest, a residency advisor, but also a proficient advocate within the open spectrum movement. Elaborating on technological infrastructures and issues of accessibility, Priest

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<sup>132</sup> This portion of the day enabled residents to work privately in their studios and removed from the workshop environment. And given that the first week of the residency was devoted to talks and presentations, studio hours were highly valuable as residents had to deliver a Mediascape within three weeks. I was hesitant to make demands apart from interviews.

outlined the general debates that defined the movement, and also, framed concerns within the context of *Almost Perfect*, commenting for instance, on how institutional parameters shape creative processes by managing access to shared resources. In conversation, Priest revealed what he perceived as a suitable method to delineate the competing and embedded interests of the residency, that being, the construction of a map.<sup>133</sup> Ultimately, Priest's disclosure displaced my research in a new, and what proved to be fruitful direction, and in turn, my locus of investigation was no longer isolated to the happenings of the residency, and was broadened to include forces of production.

### **The Map**

The map consisted of two sections. The first, what I deemed the Hewlett-Packard (HP) portion,<sup>134</sup> traced the partners<sup>135</sup> implicated in the creation and facilitation of HP's Mediascape toolkit in terms of both hardware and software. To expedite the process, I devised a series of questions, which included:

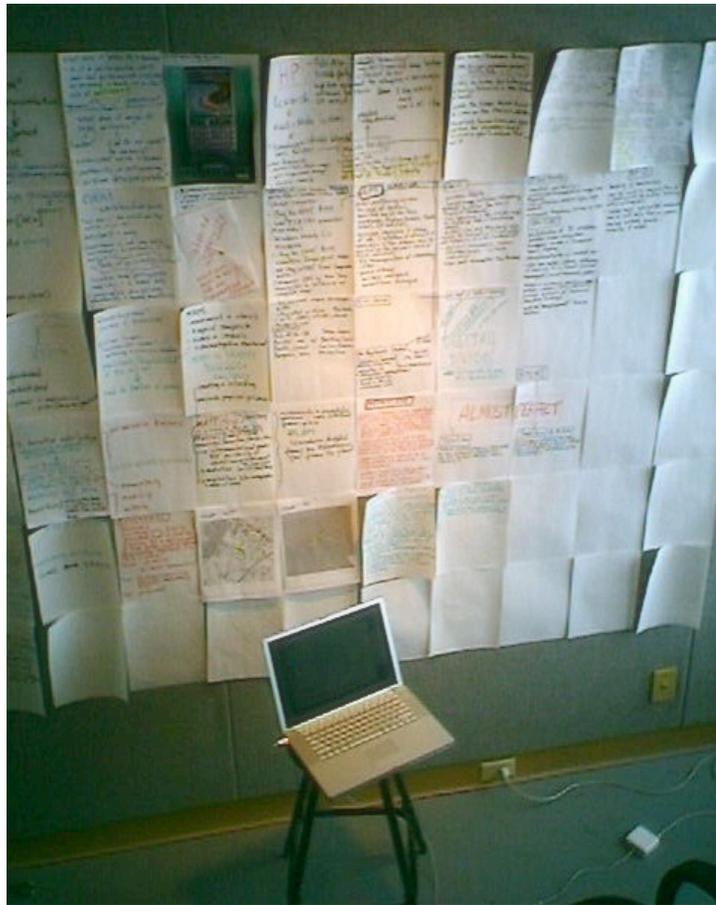
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<sup>133</sup> Priest offered the work of Bureau d'Études, the activist group known for their detailed maps of the distributions of international cultural, financial and social power, as an example (see: Bureau d'Études, 2008).

<sup>134</sup> To collect this information, I relied primarily on websites, as I did not have access to numerous resources.

<sup>135</sup> As illustrated in the HP diagram, partners included both public and private sector.

Who has ownership/control over the technologies, including hardware, software and infrastructure? What are the means of accessing these technologies? What is the cost of access? What skills are necessary?



**Figure 8.** Map in progress. Copyright: Andrea Zeffiro

These queries were necessarily rooted in the presumption that political and social processes are embedded in

technology (Crow & Sawchuk, 2008a), and configure the parameters of accessibility and expertise.<sup>136</sup>

The second portion of the map excavated vocabularies of locative media. More precisely, I plotted observations, ideas and themes, which emerged from interviews with residents, group discussions, and personal observations. And while the exercise itself was a solitary endeavour,<sup>137</sup> the map acquired a dialogic role during interviews.<sup>138</sup> In a research journal entry dated November 25, 2006, I reported:

The residents have taken an interest in the map. In fact, while conducting interviews, the conversation has repeatedly found its way to the map, and interviewees have inquired about my work. The map has proven to be quite useful for generating data, but also conversation in general.

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<sup>136</sup> See Appendix 7 for a translated version of the HP map content.

<sup>137</sup> Which is to say that it was configured by my interpretive logic. It reflected my previous productive experiences and theoretical inclinations.

<sup>138</sup> I conducted interviews in my studio initially because of convenience; as I had borrowed sound recording equipment from the BNMI and set it up my studio, and while it was relatively portable, it would have been a nuisance to reconfigure a set up for each interview.



Figure 9. Completed map. Copyright: Andrea Zeffiro

### Mapping as Methodology

As a method of facilitating data collection and synthesis, mapping<sup>139</sup> was an exercise in generating and representing knowledge derived from a particular (research) space. It

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<sup>139</sup> As Möntmann explains:

In this sense mapping – understood as a determining of position and situation of a state of affairs, an event or a person/group of persons, and of the artist's role in geographical and social space as in the art world – serves to assemble information that will provide the necessary referential material on which to base, sometimes just to legitimate a context-related artistic intervention (Möntmann, 2004, p. 27).

was a means of approach (Möntmann, 2004, p. 26); a mode through which I was able to explore my positions at Almost Perfect, first, as a researcher conducting field work, and second, as a participant in the residency. If mapping is, as Irit Rogoff (2000) articulates, "a signifying practice of both location and identity" (Wedge 140, citing Rogoff, 2000, p. 73), then, neither my location nor identity was fixed. Rather, I continuously oscillated - to borrow from documentary cinema lexicon - between a fly on the wall and a fly in the soup, that is, balancing the roles of researcher and participant.

## **METAPHORS**

Once construction of the map was underway, I refocused my attention on analogies of display. In part, I was preoccupied with plausible modes of organizing and representing data and in a manner that best reflected the residency context. Additionally, my pensiveness was a symptom of larger considerations concerning my research enterprise in general. Despite applying to the residency to conduct fieldwork, I had yet to define the scope of the thesis. And this 'unknown' weighed heavily on processes of

documentation.<sup>140</sup> Data collection was burdened with an inappropriate reverence. I was no longer just amassing material; I was salvaging shreds of my experience as future aides memoires. Melodrama aside, I eventually realized that in mapping, I was simultaneously archiving the residency. As an archive, the map would activate linkages between the past (the residence) and the future (the thesis).<sup>141</sup> And in following through with a deliberation of archival prototypes, two models, attuned to organization and display, assumed prominence: 1) the Memory Theatre; and, 2) the *Wunderkammer*.

### **Memory Theatre**

Towards the end of an interview with residency advisor and locative media practitioner Paula Levine, our conversation shifted towards the map, and Levine inquired about my process and intent. Through subsequent discussion, Levine recommended Frances Yates (1966), *The Art of Memory*. Yates' work, as I discovered, traces mnemonic techniques and mechanisms of memory from antiquity to the renaissance

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<sup>140</sup> Be it through the photo documentation, mapping, interviews or note taking.

<sup>141</sup> As Sue Breakell and Victoria Worseley (2007) write:  
Archives are the hinge between the past and the future. They are prosthetic memories that are activated in the present. Archives always exist in the present tense, capturing that moment of a past action and fixing it. (p. 175)

(Yates, 1966). The apparatus I found most compelling was the Memory Theatre. Intended as a means to classify knowledge<sup>142</sup> and facilitate its internalization, the structure, as originally conceived by Giulio Camillo in the 15<sup>th</sup> century, was a semi-circle rising in seven grades<sup>143</sup> and divided into seven passageways<sup>144</sup> (Yates, 1966, p.137). As knowledge was acquired, it was then appended as symbols, images, and text, with some facets readily visible, and others enclosed within smaller cases. The structure, it was believed, could facilitate the memorization of concepts, themes, and even intellectual systems, by associating an idea to its place within the theatre (Yuill & Mey, 2004, p. 9). The Memory Theatre provided much to ponder in terms of plausible modes of data organization. In theory, it encompassed the quest for precise knowledge, however in practice, it was somewhat abstract and perhaps even too cerebral. Instead, I turned my attention to a structure the Memory Theatre intimated, that being the *Wunderkammer*.

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<sup>142</sup> Camillo's goal was to classify all the world's knowledge.

<sup>143</sup> Representing the seven planets (Yates, 1966, p.137).

<sup>144</sup> Based on the seven pillars of Solomon's House of Wisdom (Kwastek, 2003, ¶6).

## ***Wunderkammer***

The *Wunderkammer*, or Cabinet of Curiosities, much like the Memory Theatre, is a system of organization and display in the production of knowledge.<sup>145</sup> However, unlike Camillo's invention, the *Wunderkammer* exudes an air of the carnivalesque, which is certainly not to suggest that it lacks principles of organization or display (Kaufman, 1978, p.22). In fact, artifacts are often precisely ordered, for instance, according to similar properties, such as height, weight or colour, or by juxtaposing elements (Johnson, 2008, p. 203), and these arrangements are made meaningful through a symbolic order of its own. The carnivalesque emerges, I think, as a condition of its artifice, through enforced and controlled conditions of manufactured settings, such as the 'natural world' (Johnson, 2008, p.202). "[T]he viewer", as Barbara Stafford (1995)

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<sup>145</sup> In Thomas DaCosta Kaufman's analysis of Emperor Rudolf II of Hasburg's *Wunderkammer*, the author details the manner in which the Emperor's collection, given its explicit 'imperial self-representation', as an "expression of his imperial magnificence and a symbol of his claims to power," had a significant diplomatic role throughout his reign (Kauffman, 1978, p. 22). Far from unique, the Emperor's interest is more emblematic of the 'culture of the experiment', gripping Europe during the 16<sup>th</sup> and 17<sup>th</sup> centuries<sup>145</sup> (Johnson, 2008, p.202). Attributable to colonial intentions and subsequent interest in the 'new world', the *Wunderkammer*, in its display and rendering visible and comprehensible the diversity of the world, was a means for the wealthy elite to amass cultural capital, and demonstrate exertion of control over worldly artifacts, which in turn reasserted the power of its owner (Johnson, 2008, p.202; Ott et al., 2006, p.6). Within American culture, *Wunderkammer*, referred to as Cabinet of Curiosities, were often a quasi-scientific mix of artifacts, and frequently generated in conjunction with libraries, historical societies or serious collectors (Robinson, 2003, p.21).

explains, "must be able to discern, in detail and in a logical way, what the world presents *en bloc*" (pp.262-263). The *Wunderkammer* therefore, is an 'emblem of curiosity and wonder' (Marr, 2006, p.10). And as a model of display, the *Wunderkammer* manifests key issues of social constructivism, demanding through its artificial space and arrangements: "how do displays legitimize knowledge? What is real? What is fake? Where does truth begin and end? Is fact really stranger than fiction?" (Yanni, 1999, p.165).

#### **CHOREOGRAPHED 'LOCATIVE MEDIA' WALK & INSTALLATION**

Pending Open Studios,<sup>146</sup> while my fellow residents frantically attended to their Mediascape prototypes, I was locked away in my studio, reviewing all the data I had collected, keen on delivering the research report I had proposed in my application. Truthfully, it was not enthusiasm that drove me. It was the combined forces of guilt and pride; I *had* to follow through with what I had promised, just as I *had* to depart the residency with a tangible. In a journal entry dated November 25, 2006, in which I reflect on my research output, I wrote:

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<sup>146</sup> The open studio component of the residency provided an opportunity for residents to showcase their projects. It was open to the community at large.

Would my work at the residency be more tangible as a report? Certainly a report *is* a discernable source of output because it materializes the research process. Or perhaps it isn't so much about materialization. After all, proof exists of my work: the hours of taped interviews, pages of notes, map on my wall.<sup>147</sup> The legitimacy of a report is more in the way that it offers a clean and concise (and processed) version of the process. But are there not modes of output that can summarize findings, and in a manner that is meaningful for participants?

When reviewing data for the report, part of the process included revisiting interviews with participants. In listening to residents a second time, the disjuncture between the proposed (project) and the actual (project) was immediately apparent. That many of the projects, despite the amount of labour invested, could not be realized was troubling, as was the manner in which processes of labour were subsumed by the toolkit.<sup>148</sup> These reflections, which

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<sup>147</sup> The thought of writing a research report was utterly daunting. Given the amount of data I had collected, I did not know, nor could I fathom where to begin.

<sup>148</sup> Again, residents were pushed to explore the HP platform – to consume it and produce with it – and the emphasis was on the platform itself, as opposed to individual intent.

coincided with my intent on finding a plausible mode of meaningful output, lead me back the *Wunderkammer*, which I employed<sup>149</sup> to address these concerns.



**Figure 10.** Interview equipment set up in my studio. Copyright: Andrea Zeffiro

## Performance

Abandoning the report,<sup>150</sup> I set about creating an installation that was attentive to materializing the labour

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<sup>149</sup> Describing the creation of a 3-D computational tool for architectural design and planning, Büscher et al., (2002) characterize the *Wunderkammer* as a guiding metaphor in their research and design process. It functioned, as the authors explain, as an imaginative space that is:

[B]oth, symbolic-metaphorical, and 'knowable'. It is grounded in the need for imprecise, fluent forms of categorizing inspiration objects as observed in our fieldwork. A place should be 'knowable' to support meaningful placings of objects, and sufficiently open to invite different associations. (p. 25)

Contrary to Büscher et al., who applied the *Wunderkammer* within an imagined context, I implemented the metaphor in a physical context, and as a research method in gathering and analyzing information.

process, and demystifying the 'magical' black box. The installation consisted of: 1) a choreographed walk; 2) *Wunderkammer*; and, 3) sound piece. All three parts worked in unison as a complete experience, or performance.<sup>151</sup>

### *Choreographed Walk*

The installation began in a cylinder-like stairwell, tucked at the side of the Jeanne and Peter Lougheed Building (JPL).<sup>152</sup> Within the stairwell, a small radio was positioned behind the base of the stairs and purposely cued between stations, such that the static it emitted was amplified within the three-story cylinder. Scattered shreds of paper, which cited anonymous quotes pulled from interviews, formed a path up the stairwell and to my studio.

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<sup>150</sup> I am certain that if I had prepared a cumulative report, it would have at best, offered a description of the event with minimal critical insight.

<sup>151</sup> First, it was a performance consisting of visual and aural material, hence, a performance in a rudimentary sense. And second, it was performative, in terms of repetition, that being the manner in which the installation cited the residency (via visual and audio cues) but also its citation of locative media in the choreographed walk component. Arguably, a locative media experience is both a performance and performative. Technologies are programmed to recite a certain course and trigger certain files, and in return, individuals take action in a specific and relatively determined manner. For example, with the HP toolkit, experiences are always already programmed, and although one may walk freely, the experience is actualized through the cueing and reception of data, which necessitates a preprogrammed path.

<sup>152</sup> Artist studios were located on the second and third floors of this building.



**Figure 11.** Stairwell in JPL. Copyright: Andrea Zeffiro



**Figure 12.** Hallway leading from stairwell. Copyright: Andrea Zeffiro



**Figure 13.** Studio wall. Copyright: Andrea Zeffiro



**Figure 14:** Studio wall. Copyright: Andrea Zeffiro



**Figure 15.** Studio installation. Copyright: Andrea Zeffiro



**Figure 16.** Studio installation. Copyright: Andrea Zeffiro

### *Wunderkammer*

Already a space of display given the prominence of the map, I embellished my studio further – in the spirit of the *Wunderkammer* – and solicited project material from residents. To be precise, I asked to borrow project documentation, which included flow charts, photographs, rough concept designs, maps, lists, and even doodles. And in conjunction with the map, I amassed enough material to cover my studio walls from floor to ceiling. At the center of the studio stood a television (on a stand), turned ‘on’ to a snowy screen and its volume turned very low. It offered the only source of light within the space, and the speckled screen roughly illuminated the walls. For visitors to properly see the material, they were forced to breach distance with the artifacts.

### *Sound Piece*

Apart from the barely audible static sound discharging from the television, a 5 minute looped piece – an audio piece I created<sup>153</sup> from interview clips – was distilled through speakers. As visitors engaged with the material covering

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<sup>153</sup> I taught myself how to use audio software. While this posed a few challenges, I found the work incredibly enjoyable.

the walls, they could hear – or listen to – residents<sup>154</sup>  
discuss their work.

### **Distanciation**

Certainly a departure from conventional *Wunderkammer* models,<sup>155</sup> the installation was nonetheless attentive to fundamental characteristics, namely, ‘systematic organization and programmatic arrangement’ (Kauffman, 1978, p.23), and, its demand that ‘thought and passion be activated in the viewer’ (Munster, 2006, p.11). Not unlike Brechtian Theater, in which a spectator, submitted to a process of rupture, is disqualified from identifying with a text, I sought to alienate participants from the ‘social gest’<sup>156</sup> of a locative media experience. The process of alienation, as Brecht elaborated, is premised on a technique of acting, in which an actor is to “address the audience directly” (Brecht, p.94). However, in the context

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<sup>154</sup> Having had a resident interview me, I was included on the soundtrack.

<sup>155</sup> An interesting contemporary example of the *Wunderkammer*-as-practice is evident in the work of Mark Dion. For example, at the Frederick R. Weisman Art Museum at University of Minnesota, Dion designed an installation in collaboration with museum staff, university students and curators. Seven hundred artifacts – representative of the state’s history – were selected from the university’s collection and categorized according to traditional Renaissance practice. This installation formed part of a larger project in which Dion examined the practices associated with both the natural history and university museum (see: Endt, 2007; Sheehy, 2006).

<sup>156</sup> For Brecht, the object of the A-effect is to alienate the social gest underlying every incident. By social gest, Brecht meant the mimetic and gestural expression of the social relationships prevailing between people of a given period (Brecht, 2002, p.96).

of the installation, the technique is demanded not from actors on a stage, rather from an active audience, as participants engaged in a performance (or an enactment of a locative media walk) in which their actions, in lieu of locative media conventions, are rendered strange within this new context of 'locative media'. The actions of the audience/participant are the catalyst, as one must actively engage in order for the experience to materialize. While this is not completely different from a high tech version, it is to suggest that quite often, technology is not only the tool but also the focus of the experience. If the aim of the A-effect is to "purge of everything 'magical'" (Brecht, p.94), then in the context of the choreographed walk, the 'magical' is the technology (or magical black box), and the 'purge' constitutes its removal.

There is little doubt that locative media is focus of this thesis. Nevertheless, emergent research processes and practices are essential to the larger project, and the residency provided an opportunity to explore alternative modes of data collection and synthesis.<sup>157</sup> Research at Almost

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<sup>157</sup> The departure from traditional means of research and dissemination towards a curatorial role in the organization and theatrical display of information (Arnold, 2006), fundamentally transformed my research experience. My process and object of study were no longer merely images on a screen or compressed data. Like a historian in the archives, I was handling and smelling documents, and collecting and organizing physical

Perfect can therefore be described as constituting a reflexive process, in which experimental methods, applied in conjunction with other forms of data collection and documentation, probed the research context through the tools implicated within it. This afforded an opportunity for context-specific interpretations, and nurtured an observational milieu in which larger questions concerning techno-political infrastructures ensued. Thus, if one is to apprehend what is at stake politically with an emergent technology, then one must also identify what is at stake technologically (Crow & Sawchuk, 2008a, pp.91), which in part, necessitates acquiring basic technical knowledge (pp. 102), or what I tend to think of as revealing the magical qualities of the black box.

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material, quite a departure from working with digital files and documents. It was in part, a means to explore the materiality of the research process and site.

## CONCLUSION: LOCATIONS OF PRACTICE

"If you're to witness history, Hollis, you necessarily become a part of that which you witness."

"Am I free to write about what I might see?"

*Spook Country*, p.389

"Writing", as Norman Denzin declares, "is not an innocent practice" (2000, p.898). Indeed, to write is to sustain an episteme; the expressions of specific historical conditions, which "in a given period, delimit in the totality of experience a field of knowledge", and "define the conditions in which a specific discourse is recognized to be true" (Foucault, 1979, p.xxii). My intent however, has never been to delimit locative media. Conversely, my aim has been to elucidate the manner in which locative media is constituted through multiple forces and struggles. Even though it can be defined in part, by the assemblage of technologies that constitute it, in following Stuart Hall (1981), its meaning as a cultural form and "its place or position in the cultural field is not inscribed inside its form", rather, its meaning is derived, "in part by the social field into which it is incorporated, the practices

with which it articulates and is made to resonate" (Hall, 1981, p.235).

My early investigations into the field were actuated by one seemingly transparent question: What is locative media? In addressing this query, it became increasingly evident that locative media is a knotty - and at times naughty - term that continues to conceal more than it reveals. The term itself is fraught with ambiguities. For instance, Karlis Kalnins asserted that, "locative *is a case not a place*" (Kalnins, 2004; Tuters & Varnelis, 2006, p. 1), suggesting that locative media does not occur merely in space but also in time. Nevertheless, it continues to signify the physical spaces of locative experiences and installations. This thesis is a critical intervention into the locative media from within its locations of practice. It is a contribution to the expansion of what Saul Albert terms, 'locative literacy', As Albert explains,

the ability to read, write, communicate is vital for any person needing to act, take power, to have agency. An awareness of how flows and layers of information intersect with and augment a person's locality, and the ability to intervene

on this level is a further extension of this literacy and of their agency. (p.2)

This thesis is an intervention in perspective. As opposed to focusing on the public experiences and installations, I examined locative media from within institutions. And these institutional locations necessarily matter because, as the case studies reinforced, rarely do individuals produce locative media independently. Instead, practices are contingent on conditions that enable and constrain production. Locative practices are not just doing in and of itself. Rather, they emerge within a particular social and institutional contexts, which provides structure and meaning (Wenger, 1998, p.47).

As an examination of the social production of locative media, this thesis evokes<sup>158</sup> cultures of production, those locations that engender certain practices. The collaborative and interdisciplinary research formations that constitute my case studies explicitly locate productive practices within an institutionalized context.

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<sup>158</sup> [If] a discourse can be said to 'evoke,' then it need not represent what it evokes, though it may be a means to a representation. Since evocation is nonrepresentational, it is not to be understood as a sign function, for it is not a 'symbol of,' nor does it 'symbolize' what it evokes. The whole point of 'evoking' rather than 'representing' is that it frees ethnography from *mimesis* and the inappropriate mode of scientific rhetoric... (Tyler, 1983, pp.129-130).

The Mobile Digital Commons Network and the Almost Perfect residency were predicated on collusions, both institutionally and individually. In both contexts, research and development of location-based experiences materialized through a network of resources, which absolutely necessitated institutional partnerships, the acquisition of technology, specific software, and specialized skills. However, collaboration is not merely social. Assessing the challenges within collaborative art projects,<sup>159</sup> Miwon Kwon (2004) identifies how individuals are, "continuously negotiating a sense of identity and subjectivity", and, "describing and enacting his/her allegiance and commitment, constructing and maintaining a dual identity" (pp.136-7). This dissertation is a reflection (or trajectory) of my own location within the chain of production. And the experimental methodologies that were employed best reflect the manner in which I negotiated and navigated my position in the field. The methodologies to emerge from site-specific research can also be articulated as practices of location, as the experience of a particular social context, and as a process of navigating it (Bourdieu, 1985, p.728).

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<sup>159</sup> Kwon's (2004) focus is the relationships between community, curator and institution, within community based art projects.

Indeed, much has changed in the four years since I began this project. The Mobile Digital Commons Network dissolved, the Banff New Media Institute underwent significant structural changes, Hewlett-Packard halted its Mscapes program, and yet, despite these decelerations, locative media continues to evolve. For instance, Blast Theory continues to produce large-scale interactions, and in 2009, the team was awarded the inaugural 'locative cinema' commission awarded in 2009 by partners ZER01: The Art & Technology Network, Sundance Film Festival's New Frontiers Initiative and the Banff New Media Institute. The work, 'A Machine To See With', was included in the New Frontier Program of the Sundance Film Festival, Park City, Utah from January 20th - 30<sup>th</sup>, 2010. In Canada, the National Film Board and the Canadian Film Centre have both organized support programs around mobile cinema and locative media, initiatives that support the research and development of content creation for mobile technologies. The locations of practice continue to be situated institutionally. However, the capabilities of location-based and location-aware technologies have evolved considerably, and outside of the confines of research institutions. Within the last few years alone, mobile devices<sup>160</sup> have become integrative

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<sup>160</sup> I use the term mobile device as opposed to mobile phone because

companions within an altered<sup>161</sup> communicative landscape. And looming over this vista is web 2.0 and social networking, which have assumed ubiquity as digital phenomenon, both technologically and within the popular vernacular. As a consequence, mobile technologies have been interpolated into revolutionary locations.

In 2009, when hundreds of thousands of Iranian citizens defied their country's official ban on mass rallying and took to the streets in protest of the dubious presidential election results, many were equipped with mobile digital communication devices. Numerous protesters documented their activities with digital photographs and video, and instantaneously uploaded this material via Twitter and Facebook. Thereafter, official news agencies, attentive to citizen reportage circulating on the Internet, incorporated documentation into 'official' new sources and simultaneously hyped citizen media. In fact, commentators referred to the protests as 'Facebook/Twitter protests', intimating that social networking practices were accountable for organizing or encouraging protest (Ambinder 2009; Glossman 2009; Shirky 2009). This favourable

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communicative functions have expanded beyond 'call' and 'text'.

<sup>161</sup> Let me be clear that I employ 'altered' sparingly, not to connote a revolution for all of humankind, but as an acknowledgement of an evolution in the capabilities of location-based and mobile devices.

treatment precipitated a conflation of the communicative processes of mobile digital communication technologies and the participatory the web<sup>162</sup> as catalysts of democratic action. More than a year after the so-called 'Facebook/Twitter' Iranian protests, Malcolm Gladwell (2010) deflated the hype by comparing social media activism to campaigns of the past, when social bonds precipitated political involvement. For Gladwell, social media activism is "built around weak ties"(p.3). Yet apart from questioning the lived consequences of such forms of protest, a fundamental issue concerns technological infrastructures.

An expectation that participatory media is inherently democratic ignores not only the embeddedness of digital technologies in social structures and power dynamics, but also the manner in which activist practices and processes within the participatory web are structured by technological architecture, such as software code, digital content and hardware (Feenberg, 1991; Amin & Thrift, 2002; Sassen, 2002; Barney, 2004; Elmer, 2004; Galloway, 2004). The mobile social media practices exhibited in the Iranian protests were contingent on: 1) a telecommunications

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<sup>162</sup> Web 2.0, i.e. social networking, video and photo sharing.

infrastructure to support digital data transmission; 2) ownership of a mobile digital device embedded with camera and internet functionalities; and 3) the mobile and participatory software itself. In this sense, the social networking practices associated with the Iranian protests reveal a particular form of mobile activism, engendered not only by technological hardware and infrastructure, but also communicative parameters set forth by social networking platforms. In this manner, conditions of mobile activism are enabled (or not) through both a technological and social order, which dis/avow certain forms of political embodiment. Therefore, as mobile digital communication technologies and the participatory web continue to be implemented as strategic tools for communication, collaboration, coordination and collective action (Kreutz, 2008), and, as commercial media promote and encourage the production, consumption and contribution of content through user-friendly mobile and web based platforms, it will be imperative to investigate the manner in which itinerant political spaces effectuate *locations of practice*.

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## APPENDIX 1: THE HAUNTING GAME

### ***The Haunting***

*The Haunting* was a cell phone based experience<sup>163</sup> designed for a portion of Mount Royal Park. Media files were stored<sup>164</sup> on Nokia phones and content was triggered in-situ based on GPS co-ordinates.

### **Trailer<sup>165</sup>**

On a winter's eve in 2007, a series of unexplained occurrences took place in the heart of Montreal. An unknown mobile phone company VFB Mobility ("Voices From Beyond"), sent a group of engineers into Mount Royal Park. Equipped with only a handful of cell phones, VFB engineers sought assistance from a small group of park visitors. According to reports, these individuals were asked by engineers to assist in neutralizing a series of disturbances that were posing a threat to the cellular communication networks throughout the city. Motivated by an interest and concern for the sanctity of Montreal's wireless telecommunication infrastructure, this adventurous group agreed to the request. However, as these unsuspecting individuals soon

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<sup>163</sup> The game existed in prototype form.

<sup>164</sup> Content was not streamed onto the phones; the files were triggered by GPS.

<sup>165</sup> I wrote this in January 2007 to establish a scenario for game play.

discovered, the threat was not to the city's cellular communication networks. Rather, the real threat was to their lives. And no one, not for one second could have anticipated the hideous events that would thrust these individuals into the ghastly arms of the supernatural.

### **Description of the Game**

At the onset of game play, players receive a phone call from Alma,<sup>166</sup> the VFB Mobility representative. Alma asks players to assist VFB engineers in neutralizing a series of disturbances that are threatening cellular communication networks throughout the city. Alma instructs players on how to neutralize these disturbances using a cell phone provided by VFB engineers.

A map is provided on the cell phone so that players may navigate the game space in real time; the map displays the location of disturbances in relation to a player's position. Once neutralized, a disturbance changes colour but remains on the map. When three disturbances have been neutralized, the map is cleared and players are presented

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<sup>166</sup> The VFB phone company operator, Alma, launches the game, provides information to players and offers assistance in the first level of the game in order to familiarize players with the technology. As game progresses, the omnipresent voice of Alma becomes less reliable.

with a gateway to the next level. Players pass through the gateway and a new set of disturbances are presented. To successfully complete the game, disturbances in all three levels must be collected in the phone.

Players complete the game by neutralizing three disturbances in each level. When this is done, players receive instructions on how to expel the disturbances from the phone. Once players discharge disturbances from the phone, normal cell phone function is reinstated and the threat to the city's cellular communications network is averted.

### **Game Levels**

The game consists of three levels based on the three states of possession: 1) summoning; 2) infestation; and 3) possession. In each level, players are required to neutralize three disturbances in order to advance. In levels one and two, players are allowed to follow any paths to the disturbances and can neutralize them in any sequence they choose. In level three, players must follow a specific order as indicated by the map.

*Level One: "Summoning" or The Forest of Shadows*

In level one, players will have low level encounters with disturbances. Players see disturbances on their map and are required to neutralize them by approaching specified location. Players are provided with assistance from Alma/VFB in order to learn how to use the phone as a neutralizing tool. Interactions will foreshadow elements of level two and three.

*Level Two: "Infestation" or Devil's Pitchfork*

In level two interactions become more complex. Disturbances become increasingly agitated as does cell phone reception. Assistance from Alma/VFB decreases as players advance through level two. Future events continue to be foreshadowed.

*Level Three: "Possession" or The Summit of Spirits*

In level three, players learn the truth of the disturbances and neutralizing these entities becomes increasingly difficult as disturbances resist capture and attempt to escape the phone. As level three progresses, communication with Alma/VFB becomes intermittent and technology becomes unreliable.

## **Elements**

*Map:* Players will be able to toggle to a map throughout the game showing their location in relation to hotspots (ghosts) in real time. The map does not show trails or landmarks – only the distance to the hotspot. The map only displays the hot spots for the current level.

*Ghosts:* Ghosts are tied to specific GPS coordinates and are made up of higher-level content including combinations of sound, image and text. Player interaction with the ghosts follows an interaction scenario; meet ghost (site/sound), approach and capture, store in the inventory.

*Capture Sequence:* Players are required to capture three ghosts at each level to access the next level of game play. Once nine ghosts have been captured, players advance to the end of the game.

*Gateways & Levels:* Access to each level of the game is contingent on passing through a gateway, which is revealed to players after capturing three ghosts in each level.

*Inventory:* Allows players to keep track of captured ghosts in each of the levels. Players can toggle to inventory at

any point throughout the game to see the number of ghosts captured and number of ghosts still on the loose. Once nine ghosts are captured, the inventory reveals a phone number to launch the end of game sequence.

*Alerts:* There are two kinds of alerts. First, in level one, players are alerted to the presence of paranormal disturbances. Second are boundary alerts, which are placed around the perimeter of the game space along the Olmstead trail in order to let players know they are leaving the game.

### **Technology**

*GPS:* Ghosts and ambient sounds/images are attached to GPS coordinates. When a player enters a 'hotspot' the specific content is triggered on the phone.

*Bluetooth Beacons:* A beacon is sensor, meaning that it responds to stimuli, such as heat, light, or pressure and in turn produces a signal that can be measured or interpreted. The sensors are placed in the park, within the parameters of game play. The beacons trigger content (animations, sound) on the phones. When players approach range (roughly 10 meters), the phone discovers the beacon

via Bluetooth, makes a connection and synchronizes content delivery.



**Figures 17.** Bluetooth Beacon 'off'. Copyright: MDCN



**Figures 18.** Bluetooth Beacon 'on'. Copyright: MDCN

The core engine of the Bluetooth Beacon consists of a four layer printed circuit board: 1) Bluetooth radio; 2) PIC microcontroller; 3) power supply; and 4) connectors.



**Figure 19.** Beacon 'guts'. Copyright: MDCN

## **Rules**

*Number of players:* Players can play individually or in pairs.

*Objective:* Players need to capture nine ghosts in the forest and proceed to the cross to initiate the end sequence in the game.

*Movement:* In each layer players can follow any path and capture ghosts in any order they choose. Players must capture three ghosts to advance to the next layer. Players must advance through the layers sequentially. They can only be seen one layer at a time and layers are mutually exclusive.

*Completing the game:* Players must successfully capture nine ghosts and complete end sequence for the game.

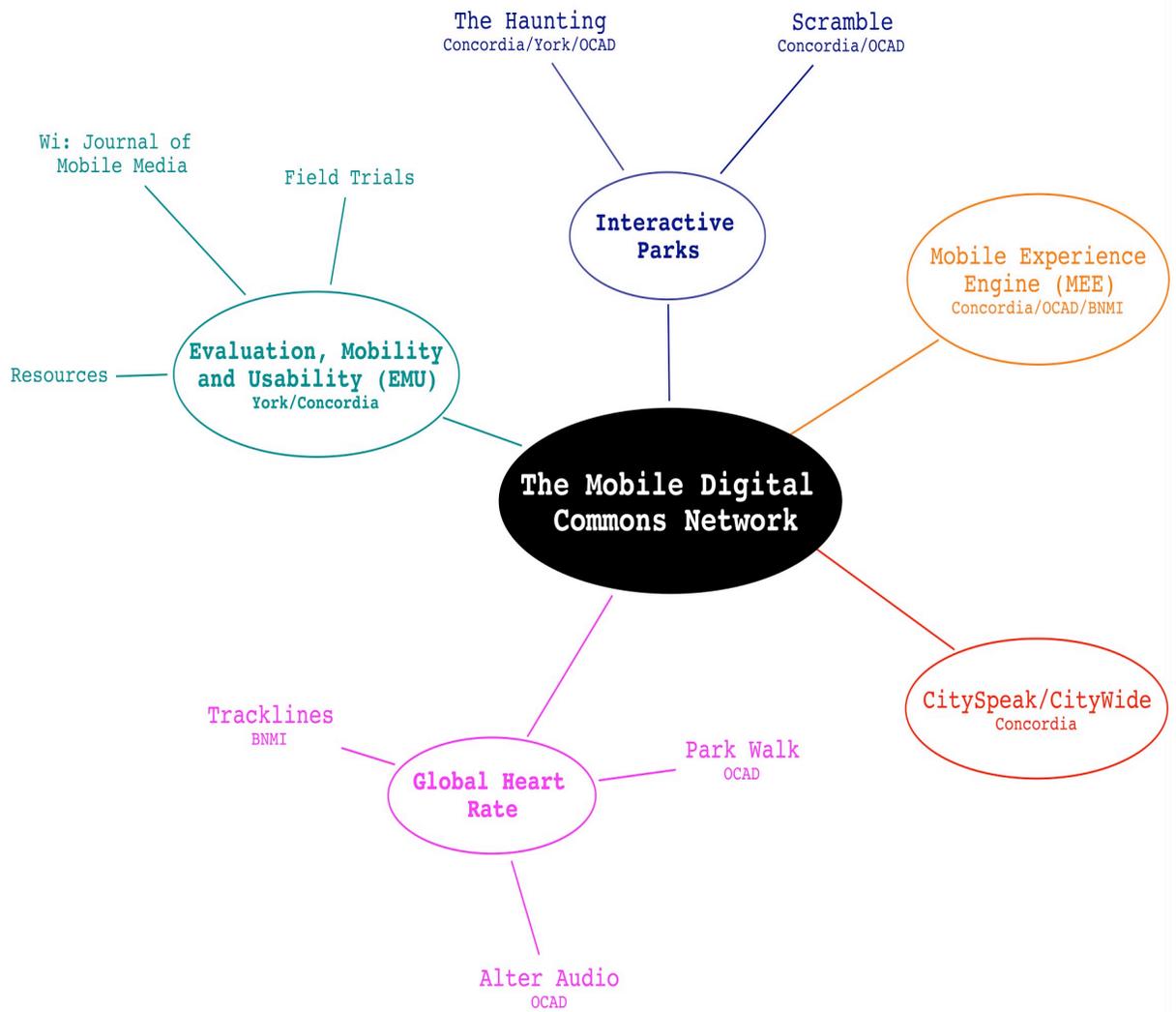
### **Equipment**

Players are outfitted with a Nokia phone, a GPS device and a flashlight. It is neatly packaged in a wooden coffin.



**Figure 20.** Mini coffins with game gear.  
Copyright: Robert Prenovault

## APPENDIX 2: MDCN STRUCTURE



## APPENDIX 3: MDCN DELIVERABLES

### Deliverables: March 2006

#### *Global Heart Rate:*

1. Report on concept development and tests for one installation of a mobile experience in Banff National Park.
2. Report on one engineering scenario for a co-located mobile experience linking Banff National Park, Toronto and/or Montréal.
3. Complete second iteration of engineering for the content authoring system (Mobile Experience Engine) for mobile media design.
4. Complete second iteration of one prototype for wearable sensor integrated with cell phone.

#### *Interactive Parks:*

1. Expand ISF permanent wireless network allowing free Internet access in public spaces in Montréal.
2. Deploy 5-8 sensor prototypes on the ISF network.
3. Complete testing and documentation of the second iteration of the sensors for the ISF network.
4. Report on first phase of concept development for two mobile game experiences in downtown Montréal parks and surrounding neighbourhoods.

*CitySpeak:*

1. Prototype application for text input via wireless web and SMS routing to CitySpeak database displaying text.
2. Develop links for collaboration with ScanSoft for the creation of a robust speech-input module allowing users to create text by speaking into the their mobile device.
3. Complete second version of a prototype for a robust implementation of the NextText text graphics library, which we will use to visualise the text captured by CitySpeak.
4. Complete one installation of the CitySpeak system on the ISF network.

*Evaluation:*

1. Report on interviews and documentation of key production and design participants before, during and after workshops.
2. Research protocols for Interactive Parks and CitySpeak to determine what may hinder or enhance user participation and engagement with the technologies embedded in each project.

3. Establish communication tools and methods for collaboration within the evaluation team and amongst members of the network.
4. One focus group report City Speak Project.

**Deliverables: March 2007**

*Global Heart Rate:*

1. Complete one installation of a mobile experience in Banff National Park.
2. Complete one prototype for a co-located mobile experience linking Banff National Park, Toronto and/or Montréal.
3. Complete the content authoring system – Mobile Experience Engine.
4. Complete up to 10 wearable sensors integrated with cell phones.
5. Complete 5 prototypes of wearable accessories integrating cell phones and sensors.
6. Complete research for report on participatory design in the Canadian wilderness park and urban park environments and the potential of mobile experience guides in park enhancement.

*Interactive Parks:*

1. Complete deployment of up to 18 sensors in the ISF network.
2. Complete technical documents for sensor design and outdoor implementation on a WiFi network.
3. Complete one installation of an interactive location-based mediascape or mobile game in an urban park.
4. Complete one prototype for genre-based mobile game in an urban park and surrounding neighbourhood

*CitySpeak:*

1. Complete GPS integration allowing the search and display of location-related media (dependant on the Digital Cities' sensor network).
2. Complete Integration of a robust speech-input module allowing users to create text by speaking into mobile device on the CitySpeak system.
3. Complete implementation of the NextText text graphics library that can be deployed remotely.
4. Extend installation across the ISF's network to two remote locations. Possible locations include: the BBC in an English town centre yet to be determined, Urban Screens in Berlin (Summer 2006), and Broadway Cultural Centre in Nottingham (Fall 2006).

*Evaluation:*

1. Complete report on interviews and documentation of key production and design participants before, during and after workshops.
2. Report on communication tools and methods for collaboration within the evaluation team and amongst members of the network.
3. Final report with suggested protocols for evaluating mobile technology projects based upon the documentation collected and results of focus group testing

#### **APPENDIX 4: BANFF CENTRE FUNDING**

Since its inception with a dance program 77 year ago, the Centre has expanded its offerings with additional arts departments, Mountain Culture and Leadership programs, and meeting and conference services, which host large groups from the business, educational, arts, science and cultural sectors. In their introduction to the Banff Centre's annual report for 2006-07, Philip G. Ponting, Chair of the Board of Governors, and Mary E. Hofstetter, President and CEO, describe that the Banff Centre as dedicated to "encouraging inter-disciplinary collaboration" by fostering "applied research and the development of innovative processes and products within cultural industries" (2007, p. 1). The Centre operates under the authority of the Post Secondary Learning Act, which is overseen by the Government of Alberta, and receives a \$12.8 million annual operating grant from the department of Alberta Advanced Education and Technology. This portion of funding represents 27 percent of the of the Centre's total revenue. The other 73 percent is generated by the Conferences and Hospitality activities, in addition to donations, sponsorships, program grants and tuitions (The Banff Centre, 2007, p.19). In the 2006-07 fiscal year, programming and endowment funds increased by 27.4 percent, culminating in \$10,371,148 total fund cost

value (2007, p.7). In addition, the Centre reinvested \$3.6 million of its conference and hospitality net revenue into arts programming (ibid). However, regardless of the Banff Centre's success in securing endowment funds, the Banff New Media Institute (BNMI) operates as an independent institute within The Banff Centre.

## APPENDIX 5: HEWLETT-PACKARD TIMELINE

Founded in 1939, by Bill Hewett and Dave Packard, two Stanford electrical engineering students in Paolo Alto, the Hewlett-Packard Company was officially incorporated on August 8, 1947<sup>167</sup> (Malone, 2007; Packard, 1995). It was Hewlett's work on negative feedback that culminated in HP's first product; the resistance-capacitance audio oscillator 200A (Malone, 2007, p.73), an electronic instrument used to test sound equipment (Packard, 1995, p.41), and in 1940, the Walt Disney Company purchased eight Model 200B oscillators (Packard, 1995, p.45) to test its sound systems in twelve specially equipped theaters screening Fantasia (Malone, 2007, p.75; Hartley, 2008, p.227). During World War II, the government contracted<sup>168</sup> HP to produce electronic instruments, and in turn, the war effort pushed the company to add several new products to their portfolio (Packard, 1995, p.54).

During the 50s<sup>169</sup> and 60s, the company expanded<sup>170</sup> into aviation, medical electronics and analytical instrumentation, and broke into European and Asian Markets

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<sup>167</sup> Packard is named president, and Hewlett vice president.

<sup>168</sup> In addition, Hewlett serves as an officer from 1941-1947

<sup>169</sup> "...Stimulated in part by the Korean War" (Packard, 1995, p.65).

<sup>170</sup> From \$2 million to \$61 million in annual revenues (Malone, 2007, p.117).

(Packard, 1995, pp. 123, 127). In 1960, Packard<sup>171</sup> became the United States Deputy Secretary of Defense, and held the position until 1971<sup>172</sup> (Anders, 2003, p.17).

Nine-teen sixty-sixty proved do be an important year for the company. It marked the inception of HP Labs, where research focused on solid-state physics, physical electronics, electronics, and medical and chemical electronics instruments (Packard, 1995, p.197). Additionally, the company introduced its first computer, which could interact with a number of standard laboratory instruments, although it filled entire rooms and cost between 25 to 50 thousand dollars (Malone, 2007). To add to the company's scientific advancements, President Lyndon B. Johnson appointed Hewlett to the Unites States Science Advisory Committee, where he served until 1969 (hp.com). At the end of the 70s, the company passed its \$2 billion mark, and representatives travelled to China on a business relation trip, which culminated in the introduction of HP products in the Chinese market, and the institution of a Hewlett-Packard Representative Office in Beijing (Packard, 1995, pp. 72-76).

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<sup>171</sup> Packard was known to be an active backer of Republican candidates.

<sup>172</sup> Upon accepting the appointment, Packard resigned from HP, and Hewlett becomes CEO, running the company in Dave's absence

The 1980s<sup>173</sup> proved to be fruitful years for the company in terms of consumer product developments (Shockley-Zalabak & Buffington Burmester, 2001, p.4), beginning with the introduction of its first personal computer, the HP-85 (hp.com). Four years later, HP released its Laser Jet printer, which remains to be its most successful product to date<sup>174</sup> (Hartley, 2008, p.228). The company also began instituting labs on a global scale, first with a lab in Bristol (1983) (Packard, 1995, p.198), followed by Israel (1994), Tokyo (1990), Bangalore (2002), Beijing (2005), and St.Petersburg (2007) (hp.com).

In 1991, HP released its first iteration of the palmtop personal computer, and seven years later, released the Jornada PDA (personal digital assistant). In 1998, HP's board of directors announced its decision to spin off a new company from existing organization components; Agilent Technologies incorporated HP's measurement, chemical analysis and medical businesses (Anders, 2003, p.43). In turn, HP retained its computing, printing and imaging

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<sup>173</sup> In 1983, Hewlett is awarded the National Medal of Science and in 1985, Packard is appointed to chair the Blue Ribbon Commission on Defense Management, which are awarded by President Reagan. There is also much controversy surrounding Packard's involvement as a member in the Trilateral Commission (1973-1981).

<sup>174</sup> The profitability of the printer refills enables HP to sell its printers at a low price (Hartley, 2008, p.228).

businesses (Shockley-Zalabak & Buffington Burmester, 2001, p. 169). On November 18, 1999, Agilent had its initial public offering of common stock with HP retaining 84.1 percent of common stock, becoming Silicon Valley's largest-ever IPO.

The next important organizational transition occurred on May 3, 2002, when HP acquired Compaq Computer Corporation under the direction of Former CEO (1999–2005) and chairman of the board (2000–2005) Carly Fiorina<sup>175</sup> (Hartley 2008: 225). According to HP's historical timeline, this consolidation positioned HP as a leading global provider of products, technologies, solutions and services to consumers and business, and the company's offerings spanned IT infrastructure, personal computing and access devices, global services, and imaging and printing. However, as the merger coincided with the fizzling of the digital boom, and the company endured various costs to support the merger, company shares stabilized (Hartley 2008: 234). Despite this, by the Almost Perfect residency, HP's revenue was \$91.5 billion<sup>176</sup> and employed 156 000 people.

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<sup>175</sup> During the 2008 U.S. presidential election, Fiorina was economic advisor to Senator John McCain in his bid for the presidency (Bartirromo, 2008).

<sup>176</sup> It has been reported that the company secured a three-year contract with United States Army, for computers and services, valued at \$500 million (The New York Times, 2003).

## APPENDIX 6: ALMOST PERFECT PARTICIPANTS

### *Peer Advisor*

As specified within the residency handbook, a peer advisor held a dual role:

a) [T]o encourage and organize discussions and activities relevant to the planning and content [of the residency] and: b) [T]o act as a mentor and to work with artist participants [during the residency], helping them to achieve their professional development goals and further develop their creative process and artistic practices (Peer Advisor Agreement).

As well, the peer advisors were responsible for planning and programming sessions, and assisting in the overall support infrastructure.

At Almost Perfect, the peer advisors included:

1) Chantal Dumas, a Montreal based sound artist working in radio, composition, improvisation, and installation, and the residency marked Dumas' introduction to the field.

2) Paula Levine, a visual artist and professor of conceptual/information arts in the Art Department at San Francisco State University. Levine's research and art practice focuses on experimental narrative and narrative

spaces, and incorporate GPS technology, wireless, and remote devices. As specified within the Annotated Timeline in chapter 1, Levine has produced a number of locative media installations.

3) Simon Pope, whose research at the time focused on walking as a visual art practice, and often collaborates on large-scale participatory projects. His piece, "The Shape of Locative Media" (2005), offered a critique of location-specific new media practices, and is often cited as a foundational locative media text.

4) Julian Priest, whose solo and collaborative projects overlap between the fields of art, development, policy research, activism, and technology, and often focus on social aspects of emerging technologies (Almost Perfect 2005: 7-8).

Although coming from somewhat different practices, the expertise and practice-based experiences of the peer advisors harmonized. They organized evening workshops, events, and a seminar in which Paula detailed her experiences in locative media, and Simon discussed "The Shape of Locative Media" in detail. In addition, the advisors were available for individual consultation, and in

my case, responded enthusiastically when asked for an interview.

### *Residents*

The residents at Almost Perfect, much like the advisors, had varied backgrounds that included, fine arts, media arts, interactive design, sociology, cultural studies, communication studies, and architecture. For the most part, the residents were ubiquitous computing novices, and the residency marked their first introduction into the field, albeit through an HP paradigm.

### *Hewlett-Packard Representatives*

To facilitate the daily Mediascape workshops, and assist artists with individual projects, Hewlett-Packard Labs dispatched four representatives: 1) Benjamin Clayton, an engineer at HP Bristol whose research focused on context sensitive applications; 2) Josephine Reid an experience design researcher in HP Laboratories, Bristol; 3) Eleanor Jones, an HP intern and engineering design student at Bristol, whose work focused on in-situ editing of Mediascape; and 4) Patrick Goddi, a senior researcher at HP Lab Palo-Alto, whose current research focused on the Mscapes online initiative. Benjamin and Josephine were part

of the team that developed the Mobile Bristol toolkit, conducted user testing and authored numerous research reports. While Benjamin and Eleanor attended the entire residency, Josephine was present for the first two weeks, and conducted daily software tutorials, and assisted artists as they learned the software and adjusted their projects to fit within the scope of the platform. Conversely, Patrick was present for the latter half of the residency, just as artists were in full production mode. Benjamin and Eleanor worked throughout the residency with the artists, particularly in terms technical needs.

**APPENDIX 7: HEWLETT-PACKARD MAP**

