Voices from Beyond: Ephemeral Histories, Locative Media and the Volatile Interface

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Sound of phone dialing – ringing – answered. Houdini speaks:

It's Harry Houdini. Be careful who you trust.

Things are not always as they seem, my friend.

Never trust the dead.

[sound file in the digital version]

In *Speaking into the Air: A History of the Idea of Communication,* John Durham Peters (2000) draws upon the literary insights of Franz Kafka to offer these thoughts on the ghostly qualities of communication:

> As Kafka notes in an epigraph to this book, those who build new media to eliminate the spectral element between people only create more ample breeding ground for the ghosts. A cheerful sense at the weirdness of all attempts at communication offers a far saner way to think and live. (pp. 29-30)

It is with attentiveness to fostering a new media practice that is haunted by the past, imbued with a sense of place, and rooted in an exploration of the weirdness of communication that we offer our reflections on two locative media projects created in Montréal, *Urban Archeology: Sampling the Park* and *The Haunting*. *Urban Archeology* was produced for Parc Émilie-Gamelin, a highly contentious and socially charged small

urban square in a densely populated downtown Montréal neighborhood known as *Centre-Sud*. *The Haunting* was devised as a game of ghost capture for the large urban greenspace of Mount Royal Park that is at the heart of the city. These were conceived within and created as a part of the work done under the rubric of the Mobile Digital Commons Network (MDCN, 2004-2007).

In both projects our desire as designers and researchers was to use hand-held media devices networked to global positioning systems to initiate novel ways of telling stories of the past. While the past was brought into the present in both *Urban Archeology* and *The Haunting*, an important narratological difference distinguishes them. *Urban Archeology*, with no discernable teleological goal, acted as a location-based experience akin to a site-specific installation. *The Haunting*, a location-based ghost capture game, was predicated on a clearly specified set of objectives for users, conceived of as players, and was scripted within the parameters of game design (Salen & Zimmerman, 2004). By creating the possibility for users to access digitally rendered images, text and sound our intention was to quietly disrupt and supplement the habitual uses of these spaces.

In the sections that follow, the phrase *voices from beyond* will as act as a trope (Burke, 1969, p. 503) to structure our self-reflections on these two projects for it captures three elements essential to our design approach: the use of historical documents to animate the present, our adoption of user-testing and participatory design methods in our locative media practices, and our ethics of place. These places, which were 'seeded' with content at various global positioning coordinates disrupted the users' sense of being in a present moment. Images, texts and sounds revivified the past, if only in a glimmering instant that soon faded away. In this sense, we take a page from the book of Walter

Benjamin (1968) who suggested that: "[t]o articulate the past historically does not mean to recognize it 'the way it really was"'(Ranke). It means to seize hold of a memory as it flashes up in a moment of danger" (p. 255).

Methodological Risks and Theoretical Commitments: Interpretative, reflexive methodologies

As mentioned both of these projects took place under the umbrella of a larger organization known as The Mobile Digital Commons Network (MDCN). The MDCN sponsored a number of multi-disciplinary collaborative projects that involved researchers with expertise from design, engineering, the social sciences, and the humanities. Michael and Barbara were part of the initial research and design team who produced *Urban Archeology*. Kim and Andrea joined the Montréal MDCN team after the *Urban Archeology* project was completed. All four of us participated in the research and design of *The Haunting*. This direct involvement in *Urban Archeology* and *The Haunting* underlies our decision to focus on these two case studies. Our direct involvement in these case studies provides us with an experiential and intimate insider knowledge. We are fully aware that our connection to these projects also may limit our critical reading of their shortfalls, however, in offering our description and reflections upon our production practices our approach is influenced by those traditions in qualitative methods promoting the self-reflexivity of the researcher (Tillmann-Healy, 2003; Richardson, 2000), feminist writings that foreground the positive dimensions of active participation in a community or a practice (Reinharz, 1992), and methodologies that grapple with one's embodied and affective involvement in a research practice (de Garis, 1999). Theoretically and

methodologically, we are situated within humanities-based approaches to new media and technology (Friedberg, 2006; Hansen, 2004) and cultural studies (Slack and Wise, 2005). Finally, our approach to the use of technology in the environment takes a page from actor-network theory's assertion that in any networked situation neither the human subject nor the technology is the only force to consider. As such, theorists such as Haraway, drawing from Latour, use the term actant (Haraway, 1996; Latour, 2005).

To be even more specific, and to return to questions of methods and theory, we draw upon sociologist Laurel Richardson's assertion that "writing is a method of inquiry" (2000, p. 923) This position advocates experimentation in presenting the results of one's research pointing to the history of the generic conventions that underlie the supposedly objective, descriptive prose style promoted within the social sciences (pp. 923-925). As Richardson pithily argues, such a style bears the epistemological traces of an allegiance to its positivist history, which sees the natural sciences as the natural model for the social sciences to emulate. In developing what she terms a "Creative Analytic Practice" (p. 929) for conducting research Richardson promotes the use of metaphors to explore and "crystallize" one's ideas. Following Richardson, and the work of George Lakoff and Mark Johnson (1980) on metaphors, we see metaphor as intrinsic to the process of thinking and critical reflection: it is not a lyrical add-on.

As mentioned, the trope "voices from beyond" is key. This figure of speech is meant to invoke the mythic history and apocryphal tales (Sconce, 2000) of ghostly hauntings that we gleefully have employed. In this we tip our hats to the growing body of work on the new media that questions its newness by invoking the relationship of present practices and discourses to its precursors (Gitelman, 2006; Marvin, 1988). These

important histories unsettle the claim that the new media is as new as it might like to proclaim. This trope also signals our commitment to disclosing how, by using mobile wireless technologies, the present can be imbued with the past.

In designing these two projects, we have used historical materials pertinent to these places to furnish images, texts, and sounds as it is our desire to make users aware of the history of the place that they may walk through everyday, a history that in some cases is literally buried beneath their feet. Critical to our conceptualization of these historically based locative-media projects is a commitment to a historical sensibility whereby the past and present co-mingle in the minds and embodied memories of human subjects. As Walter Benjamin's (1968) ruminates: "History is the subject of a structure whose site is not homogeneous empty time, but time filled by the presence of the now" (p. 261). Benjamin's poetical and eclectic thinking on history dovetails with David Lowenthal's (1985) discussion of the past as "a foreign country." It is a place we desire to visit, but to which we never have full access. Our perspective explores how these technologies may be used to bring these stories to the surface, to provide a tentative connection to the past, and act as a means to connect users to each other as they partake in one of our location-based projects.

Locating Locative Media

Our design work with mobile, wireless technologies is situated within an emergent new media practice, locative media,[i] which attaches location specific data garnered from global positioning satellite (GPS) coordinates and mobile communication technologies. Locative media is an artistic sub-branch of ubiquitous computing research

that was initiated at a workshop held at RIXC in Riga, Latvia entitled, “Mapping the Zone.” According to the event’s organizing group, the idea behind the workshop was twofold. First, it was “an explicit acknowledgment of Virilio’s idea that ‘one cannot understand the development of information technology without understanding the evolution of military strategy’” (Locative Media, p. 4). Second the intention was to resituate these artistic events outside of the global market and military contexts from which these technologies emerged (Tarkka, in press, p. 3; Galloway & Ward, 2006). The specific term locative media was coined by Karlis Kalnins, who argued that “locative is a case not a place" (Kalnins, 2004; Tuters & Varnelis, 2006, p. 1). The locative case, in Finnish, corresponds roughly in English to the *preposition* ‘in’, ‘at’, or ‘by’, indicating the types of proximity or relationality that we have to a given territory.

Since this initial meeting, a number of artist projects have taken up these ideas and technologies including:

- the *Tactical Sound Garden* a platform for playing sounds in city streets (http://www.tacticalsoundgarden.net/)
- *Blogmapper*, a location-tagged weblog (http://www.blogmapper.com/);
- *Urban Tapestries*, a project using cell phones to tag and access GPS co-ordinates with community based content http://urbantapestries.net/;
    - locative games played on mobile phones such as *Bot Fighters,* an example of one numerous location based games played on mobile phones (http://www.gamespot.com/mobile/action/botfighters/) and;

- research centered projects such as *Mobile Bristol* http://www.mobilebristol.com/flash.html and the *Mobile Digital Commons Network (*http://www.mdcn.ca) .

Most of these projects annotate a space with particular content and many aspire to instigate public authoring using GPS coordinates to tag a location with user-generated content. The use of cellular telephones, Bluetooth frequencies, infrared sensors, GPS satellites ties locative media practitioners to ubiquitous computing, or ubi-comp.

Ubi-comp highlights a desire or a concern with the pervasiveness and invisibility of media technology in the built or the natural environment. As microprocessors and micro-chips decrease in size and increase in power and capability they may be inserted into an array of objects embedded with sensors- from singing birthday cards, to wireless MP3 players, to digital thermometers, to traffic lights. This very pervasiveness fosters great concerns about their deployment for surveillance and information gathering purposes. For example, the passage of information between technologies may be unbeknownst to those who traverse these invisible data networks (Kaplan, 1997; Zeffiro, 2006a). And, as the Basel Action Networks' documentation of micro-technology dumpsites indicates, when the ecological impacts of these technologies are ignored, this pervasiveness can be toxic (http://www.ban.org/) .

Malcolm McCullough (2004) advises that with, "the rise of pervasive computing, more applications must enhance, and not undermine, our perceptions of grounding place" (p. 174). With *Urban Archeology* and *The Haunting*, our intent was precisely to enhance, via a locative experience, the subtle nuances of being *of* and being *with* a distinctive place. While locative media *harkens* on the term 'location' both in theory and practice,

locative media is not simply location-based media. Although our projects implement location-based technologies, our practices are aligned with an active engagement with a particular place. It also invokes the tradition of artist inquiry already mentioned. What became apparent through our research is that one of the key issues in locative-media is where and how a space or place may matter to a game or project that uses mobile wireless technologies, such as cellular telephones or global positioning systems.

The Place of Mobile Media and the Volatile Interface

It is often argued that ubiquitous technologies erase our sense of place and create what Mark Augé called, a *non-lieux* (1995). Rowan Wilken (2005), for example, suggests that mobile phones may operate 'independent of place' and "where they are not exactly independent of place, they appear immune to place, serving to insulate their users from the geographical place they are actually in" (p. 4). It is our assertion that the use of technology with respect to place matters, deeply, and we have tried to build this into our design and use of these technologies in both projects. Indeed, our locative media practice reveals the spirited aliveness of the environments that we work in. Such ever-shifting conditions of production and reception for locative media projects that are outdoors provide the context for unforeseen interactions. This is particularly crucial in a context like Canada where temperatures can range from minus forty degrees Celsius in the winter to plus thirty in the summer (Sawchuk, 2007).

In this sense, rather than erasing place, we think of the GPS coordinates we demarcate and the technologies that connect users to these invisible zones for interaction as creating a focal-point for communication in a specific place, what Canadian

communications theorist Darin Barney (2004) has called a "Vanishing Table". Just as the table at a dinner party creates a shared occasion for communication, the locative media experiences we create temporary linkages between a variety of protagonists to forge connections.

We term our understanding of place as a territory for interaction, the volatile interface. This phrase references feminist theorist Elizabeth Grosz' (1994) understanding of the unruly, materiality of the body in *Volatile Bodies* (1994) and the idea of new media interfaces as a "responsive environment" (Krueger, 1997). Our projects, whilst rooted in digital ephemera, treat physical territory, not as the inert ground for our design machinations, but as an active inter-actant in the assemblage of networked situations that come together when one stages a locative media event. As we worked on these projects, it became apparent that the connection of story to place, and our understanding of place as an active, and living interface needed to absolutely integrate with our practice of designing for a locative media experience: this entailed doing historical research on location, talking to community groups involved in these places and spending significant time in these environments, rather than designing from the comforts of a desk or an office.

Communication as Ritual: calling all ghosts

In addition to these theoretical debates on locative media, ubiquitous computing, environment as a volatile interface, and the importance of place, our thinking as designers, researchers and writers draws on those histories of communications that detail the ineffable, ghostly qualities of communications and the media. The idea of 'haunted

media' has been used by scholars such as John Durham Peters (2000) and Avital Ronell (1989) to discuss the legacy of spiritualism in the history of technology, often suppressed in official accounts or forgotten in the desire to promote communications as a rational endeavour of ever-greater scientific and engineering refinements. We are inspired by these approaches for many reasons, not least of all because they see communications, to paraphrase the words of James Carey (1989), as a ritual activity that can create a sense of belonging to a place or a community and not merely as an act of transmitting information.

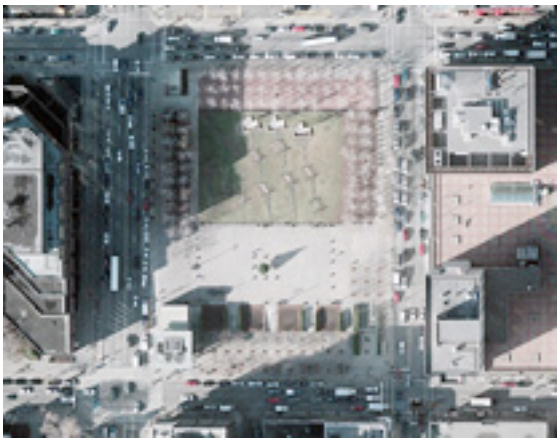
Jeffrey Sconce (2000), for one, is critical of the recurrence of the tropes like the "ghost in the machines" for new media studies. We agree that our use and investment in this term may carry the danger of too uncritical a position that may, in the words of one reviewer of our paper, "make it more difficult to understand the often very mundane and historically continuous ways in which emerging communication technologies 'actually' work." This, we hope, is mitigated by our description of the technologies and design practices we used to create our project. We also deliberately court this danger. We take the paranoid fantasies that people have about the media seriously, and we would argue that wanting to experience them may come from a place of pleasure, which is not always diametrically opposed to learning. Rather than rejecting terms which evoke "the weirdness of communication" to quote Durham Peters' paraphrasing of Martin Heidegger, we decided to use this possibility in our design to give a glimpse and glimmer into the past rather than didactively recounting a complete story of these places.

In the pages that follow we describe these two projects, one fully completed (*Urban Archeology*) the other in existence as a working prototype (*The Haunting*). Given our emphasis on place, we provide "thick descriptions" (Geertz, 1973) of these spaces to

reflect upon our main theme: paying attention to the voices from beyond. In offering this detailed description and comparative discussion we detail our intentions as producers and we use our experience to critically reflect upon our design intentions.

1. Urban Archeology: Sampling the Park – a layering of voices

Urban Archeology: Sampling the Park, which was designed for Parc Émilie-Gamelin in 2005, explores the social history of this Montréal city square by providing glimpses into the past. Parc Émilie-Gamelin is nested in a prominent intersection in one of the densest areas of Montréal. Sometimes known as Square Berri, it is somewhere between a park and something much more intensely urban, as a nexus for a variety of mobilities. The park is bounded by busy streets crowded with vehicles and pedestrian traffic. The southwest corner of the park provides access to the Berri UQAM metro station, a primary point of intersection for Montréal subways. The corner also houses a small police post. Directly to the north is the Greyhound Bus Terminal, a major transportation artery providing access to and from the city.



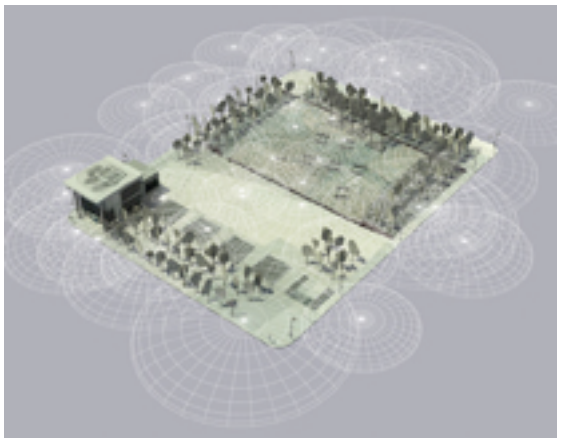


Fig. 1: Parc Émilie-Gamelin, Montréal - Aerial View. Fig. 2: Urban Archeology - 3D Map of hotspots tagged with GPS coordinates. (Illustration: A Morris)

It is a site layered with activity that brings together diverse populations from all parts of the city. For example, to the west is the Université du Québec à Montréal, Québec's largest university providing a temporary home to over 40,000 francophone students while to the east is Montréal's gay village. The park is bordered on all sides by a diverse number of businesses: including fast-food restaurants, cafés, boutiques, a mall complex and a landmark building, the Archambault music store. It is decidedly located in the east part of the city, which has traditionally been a space of the French working class and the urban underclass. Ste. Catherine is a street that has had notoriety in the history of Montréal as one of the centres for the sex trade industry (Straw, 2007).

The park changes seasonally, hosting many of the festivals that make Montréal a major tourist attraction in the summer. To the south end is a large concrete area where festival activities take place, all of which require city permits. During the winter, this space becomes a skating rink. To the north end is a grassy slope, which is traversed in the middle with a terraced stream of water that flows from large aluminum sculptures by Melvin Charney at the top of the slope, celebrating urban architecture and the built environment. The installation of Charney's sculptures and redesign of the park was the result of public spending in the 1980s initiated by the movement to 'revitalize' the city.

The park is emblematic of a number of competing interests between the city, capital, small businesses, the nearby residents and institutions, and the different populations inhabiting the park itself. The space has been and continues to resist the attempts of various municipal governments to gentrify and sanitize the area of what are perceived by some as urban blight. For example, there recently has been an attempt to rid the park of dogs in order to clear out the homeless population, many of whom own dogs

for protection and company. Located nearby are a number of local community groups like the Cactus Needle Exchange, Dans La Rue, STELLA, and Action Sero-Zero.[ii] The history and the locale of the park augment the various tensions involving social class that persist in Canada. The challenge for *Urban Archeology* was to represent these contradictions to evoke this history of contestation.

Our process of research involved gathering material from the city archives and talking to various individuals about the past and present circumstances of the park. As our archival research revealed, the square has witnessed a series of dramatic changes. For example, for 120 years leading into the early sixties, the park was the site of a Catholic mission founded by Sister Émilie Gamelin, for whom the park was renamed in 1988. The design team met with Sister Therese, the head archivist in the order of the Sisters of Providence, who in turn introduced us to Sister Yvette who had worked at the mission for over 20 years. Both Sister Therese and Yvette toured the park with the design team and recounted stories of the soup kitchen, pharmacy, hospital for the poor, and home for impoverished elder women that had functioned at the site. Microfilm articles from old newspapers, reported how the mission was destroyed by fire and purchased in 1962 to make way for an envisioned 'Plaza of the East'. This project eventually fell through leaving the site to serve as a parking lot for almost 20 years. The work of Émilie-Gamelin is memorialized with a representational bronze statue located inside of the metro station.

Fig. 3: Archival Research - Photos of Sister Émilie-Gamelin. (Photo: M. Longford) Fig. 4: The mission after it was destroyed by fire in 1962. (Photo: Archive for the Sister's of Providence)

This archival material was sampled and integrated with more recent content gathered from the park which were mixed and shaped into a variety of sound and image collages. An authoring environment developed by Mobile Bristol (MB) [iii] a research group at the University of Bristol and HP Labs in the UK, was used as the platform of dissemination. The Mobile Bristol Toolkit provides a 'drag & drop' Graphic User Interface (GUI) for attaching media files such as sound, text and image to GPS coordinates. The authored experience can then be downloaded to a hand-held personal digital device produced by HP, known as the iPAQ, and played back in real-time and space using headphones and a GPS receiver.

Using the programming layer of the software, the sound experience can be augmented and choreographed in a number of ways. For example, using 'source points,' we can create graduated sound experiences, by changing volume from the periphery of a sound region to its central source point. You can also attach more than one sound to a location and have it playback in a specific sequence depending on one's location in the park. These layered sound experiences added a degree of dimensionality creating the impression of walking through an event unfolding in space. In addition to the sound,

image files can also be attached and played back on the iPAQ in a browser window or using Macromedia Flash.


Fig 5 & 6: Users in the park with GPS and iPAQ. (Photos: M Longford)

In all, Parc Émilie-Gamelin was seeded with 40 hotspots treated as 'content wells' that could be accessed by the user. We did not conceive of the user walking through a linear historical narrative, rather we opted to give them snippets and fragments in order to rupture present time with moments from the past. As Walter Benjamin (1968) would say, "The true picture of the past flits by. The past can be seized only as an image which flashes up at the instant when it can be recognized and is never seen again" (p. 225). A collage of voices and sounds that were comprised of oral narratives, recent events, hidden histories, and the diegetic sounds of the park itself, were presented abstract at times and at other moments almost in a literal photo-journalistic fashion. For example, at one seeded spot, the user would cross a sound tunnel conforming to the underground subway cutting below the park, sampled and mixed as a kind of aural collage, with accompanying images of its mid-sixties construction.

In contrast to a project like Mobile Bristol's 'Riot' (http://www.mobilebristol.co.uk/QueenSq.html) which used a similar tool to bring people

into the history of a particular event and provided the overarching narrative, we had no singular narrative, but were exploring multiple historical moments within a given space. They were bound by an event at a time and a place: we were bringing into focus, in a sense, the layering of events through time. The point is not just to render the 'invisible' visible but to invoke the feeling of sedimented layers of time. Like the interface we speak of, our bid at historicizing is also volatile: we are less concerned with seamlessness and more interested in "the vertigo of the radically multiple (not subjective) inside viewpoint" (Kwinter, 2001, p. 41) *within* a particular place. Mediated through the iPAQ, historical fragments are the slippery bedrock on which the present stands.

2. Other Voices: lessons from user-integrated testing

There were several public demonstrations of the *Urban Archeology* project in 2004 and 2005. We decided to get more formal feedback on the project and set up a pilot demonstration of the project in October 2006 with a group of first year university students recruited from a class in research methodologies. While not a representative sample by any means, the group members were varied in terms of gender, language and cultural backgrounds. Although limited in scope, this user-test provided invaluable feedback that challenged several theoretical and design assumptions we were working with, and which pointed to the value of iterative and participatory user-tests as a valuable design tool in future projects.

As we only had 8 iPAQs we necessarily had to divide the groups into two. The first group was sent into the park with little or no instruction, other than technical information on how to use the iPAQ and turn on the GPS receiver they were wearing on their arms.

The second group, who had to wait for the others to return, was treated to a brief introduction to the project, including a presentation of the map of the park with the hotspots programmed on it. Both groups were followed by focus group interviews in which we wanted to know what they had experienced and how they would describe it.

Immediately it became evident that there was a significant difference between the interest the two groups had in *Urban Archeology*. The first group sent into the park with only technical information, returned their iPAQs and headsets to the park in less than 10 minutes. The second group spent an average of 40 minutes in the park, roaming through it to search out our lovingly constructed, richly researched content. What we learned immediately was that the kind of unfolding of the place and the curiosity to see how much content was not there naturally. Students with no directions, backstory or information regarding the 40 hotspots simply gave up: they had no cognitive coordinates to keep them moving. Consequently for these students, the space provided little intrigue. They were not *with* the space; they did not indulge in its nuances and in turn, they disallowed engagement. The second group, which had been kept waiting, however, had enough information about the project. They sought out and explored the different hotspots: for some it even became a game to find all 40. Further probing revealed other important design assumptions that we had not considered whilst producing *Urban Archeology*. We discovered that this new media was, in McLuhanesque fashion, haunted by the vestiges of old media. In both groups, these users compared this technology to their other media experiences, most notably the museum audio guide. As such, some expected crisp, clean information that would reveal some hidden dimension of history in a linear manner.

When we asked the students at the end if they would describe the experience as one of augmented reality, which is the language from new media we were using, several were dubious about this terminology. This was for several reasons. Some queried whether having a large sound insulated headset on did not cut one off from the park and most importantly the people in it. Many expressed discomfort at wandering a park, with so many of Montréal's homeless with expensive electronics equipment. In other words, the experience called forth the class contradictions embedded in the technology, beyond the mere representations we offered.


Fig. 7 & 8: Users in the park with GPS and iPAQ. (Photos: M Longford)

Revealed in questioning users about their experiences was a perspective very different from our own, one worth considering in terms of location-based media design intended for a heterogeneous public. In analyzing the frustrations voiced by participants, specifically the discontinuity between their physical and perceptual experience, participants were also cued into the social tensions of the park.

In other words, while it was not our initial intention, projects such as *Urban Archeology* can initiate a process of acknowledging the existence of "the digital divide" experienced as ownership and possession of technology as well as access to the know-

how. Participants became aware of their status as 'outsider' to the space. This unease is not equivalent to failure. On the contrary, it brings forth the political potential for location-based experiences to actively employ Brechtian "distanciation" in order that, as Tomás Gutiérrez Alea (1988) explains, "the spectator arrives at – a state of astonishment or surprise in the face of daily reality" (p. 44).

These lessons from *Urban Archeology* including the need for on-going user-testing on location, designing for the specificity of a space, creating narrative and visual cues to propel the user through a space, and the need to entrain users in the use of the technology would gradually be brought into our next project, *The Haunting.*

3. *The Haunting: ghosts in the machine and on the mountain*

The Haunting was a prototype for a location based cell phone game with a historical twist in on-going development for Parc Mont Royal in Montréal. Situated in the centre of Montréal, Mont Royal is a large hill, roughly 500 acres, with three distinct peaks: Colline de la Croix, Colline d'Outremont, and Westmount Mount. The highest point, Colline de la Croix, is 233 meters above sea level and is visible from afar, creating a very distinct visual topography. 'The Mountain' as it is known to Montréalers, serves for many as a geographical point of reference for situating oneself in the city. A large cross sits on Colline de la Croix and is visible from the south, east and north of the city.

One's position to the mountain may also be descriptive of social status, which is tied to the history of neighbourhoods. Nestled on its western base is Westmount, historically the Anglophone centre of Montréal, and a highly affluent community. Directly to the east, towards Parc Émilie-Gamelin, is Plateau Mont Royal, still largely

francophone and currently experiencing rapid gentrification. One of the most prominent features of Mount Royal are three cemeteries, one Catholic, one Protestant, and one Jewish which lie on the north-facing side. The presence of these cemeteries, the spiritual significance of the Mountain to Montréalers, and the visual presence of two suggestively symbolic landmarks: an illuminated cross and a giant red radio tower that resembled a giant pitchfork against the sky – those things invited a ghost story. Writing a ghost story allowed us to address one of the environmental challenges of working with small screens outdoors: eliminating the glare of the sun which makes seeing images on a phone or iPAQ difficult.

Inaugurated in 1876, the park was designed by Fredrick Law Olmstead, who is also responsible for Central Park in New York City. Similar to Central Park, Parc Mount Royal is the largest green space in the city and is host to numerous cultural and athletic activities year round. Locals regularly flock to the Mountain for leisure, exercise, and to partake of numerous activities organized by the City and community groups. One such group, *Friends of the Mountain*, are responsible for protecting natural ecosystems that coexist with city inhabitants who use the park. They also lead the charge to keep the Mountain a public space against recurrent attempts by speculators and entrepreneurs to develop it. Finally, the Mountain is a popular destination for tourists, who often venture to the park for photographic opportunities at The Belvedere, a panoramic lookout over the centre of the city and the St. Lawrence River.

Mount Royal Park has figured prominently in the social and political history of Montréal. Wealthy Montréalers fled to the park during the cholera epidemic at the turn of the century. The annual St. Jean Baptiste festival, adopted as symbol of the Quebec

independence movement was celebrated for years in the park. Today, events such as the regular Sunday Tam Tams, organized unofficially by drumming enthusiasts from all of the cultural and immigrant communities that comprise Montréal, challenge local bureaucratic structures and city by-laws. Parc Mount Royal was chosen as a site for *The Haunting* because of this rich history, cultural roots and spiritual tie to Montréalers.

In designing for *The Haunting*, we imagined the park as a giant Ouija board and the cell phone as the latest technology to act as a medium for communicating with the dead. Media debris, flickering screens, unearthly vibrations, and screaming cellulars inhabit the 'Summit of Spirits' surrounding the cross at the top of the mountain overlooking the city. Interaction scenarios, alternative mapping techniques, spontaneous public performance, and location based play structures rooted in non-linear narrative are explored in mobile experience design.

Fig. 9: The Haunting - Using the metaphor of the Quija Board as an interface for Mount Royal Park, Montreal. (Illustration: A. Landry) Fig. 10: Players in Mount Royal Park. (Illustration: L. Plamer)

A glowing ring of cell phones, a contemporary version of swapping ghost stories around a virtual fire, inspired the atmospheric backstory to *The Haunting*. Based on the feedback from *Urban Archeology,* we also decided to provide our game with a narrative voice.

A working prototype for a game, *The Haunting* is intended for groups of 2 players per phone, with 6 groups in the filed at a time. It can be played by any age group, although as it is intended to be played after sunset. The whole game lasts about an hour, depending on the skill of the players. It may be played as a competitive game against another person or team. At the onset of game play, players receive a phone call from Alma, the operator and voice of VFB (Voices from Beyond) Mobility. 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 by capturing ghosts using a cell phone and continues, throughout the experience, to act as a meta-narrator giving players instruction on the phone itself. In addition to assistance from Alma, a map is provided on the cell phone so that players may navigate the game space in real time. Using GPS to play a game of virtual 'hot and cold,' the map displays the location of disturbances in relation to a player's position. The game is finished once all the ghosts are captured and expelled from the phone.

The game space, is divided into three sections or layers in a forested area at the top of the mountain bounded by the Olmstead Trail which approximately 3.8 km in length. In this, we literally remapped the Mountain as a potential space for interactive play. Level one, or 'summoning' referred to as, 'The Forest of Shadows,' introduces players to the story and navigating the footpaths that through low level encounters with ghostly disturbances utilizing sound and vibration. Level two or 'infestation' occurs around the 'Devil's Pitchfork,' named for the largest radio tower in the city located at the north west edge of the game space that resembles a tuning fork bathed in the red glow of navigation

beacons mounted on the antennae. Interactions are more complex as disturbances become increasingly agitated and the ghosts inhabit the phone with sound and images. Finally, in level three or 'possession,' players learn that, "things are not always as they seem" as they realize their phones are now possessed and neutralizing disturbances becomes increasingly difficult as ghosts resist capture and attempt to escape the phone. Players discover they are being stalked by a malicious spirit and are forced to run to the cross at the 'Summit of the Spirits' in order to escape the forest and perform a kind of exorcism to release and liberate the spirits from their phones. Throughout the second and third layers of the game, communication with Alma and VFB Mobility is increasingly intermittent as the technology is rendered unreliable. Thus, the goal of *The Haunting* is to locate the disturbances and find the ghosts buried on the mountain, capture them in the phone, and later liberate them at the summit of the mountain, so that they may rest in peace and save the city from certain cellular chaos.

Fig. 11: The Haunting - Map showing game levels and location of the hotspots seeded with ghosts. (Illustration: R. Femwick, Co&Co Design)

As they roam the mountain, players have nine encounters with spirits. Five of the spirits are based on real historical characters with a connection to Montréal, two of whom are buried in the cemeteries on the mountain. The game is structured around the gruesome tale of the last execution performed in 1935 by Arthur English, Canada's first official hangman, which went horribly wrong. As a result of miscalculations by English when measuring the length of the rope for "the drop," Thomasina Sarao, who was convicted of killing her husband in an insurance scam, was decapitated. [iv] The paranormal disturbances on the mountain are caused by the eternal struggle as Thomasina seeks to unite her body to her head and escape the mountain and Arthur English who continually stalks her wanting another chance to hang her in an effort to 'get it right.' Players are duped into helping Thomasina and find themselves threatened by Arthur's noose.

The third character to complete the triad is Harry Houdini, the magician, escape artist, and debunker of spiritualists. Three years before Thomasina's execution, Houdini invited a student at McGill University, located at the base of the mountain, to punch him in the stomach as demonstration of his physical strength. Unfortunately, he was not ready to receive the blow and it is widely believed it ruptured his appendix and he died three days later in Chicago (Kalush & Sloman, 2006). Houdini, acts as a guiding spirit warning players to be careful of the malevolent ghosts that inhabit the mountain and assisting them with their escape. Other characters include, the Allan Sisters, who were lost at sea the Lusitania in 1915, one is buried on the mountain and the other, whose body was never recovered continues to roam the mountain in search of her sister. Three fictional

characters based on epidemics and other deaths connected to the history of the city are a part of the game including the 'Killer', a surly monosyllabic old ghost named Cyril, and a kindly grandmother named Midge.

Fig. 12: The Haunting - Players in Mount Royal Park. (Illustration: L. Plamer) Fig. 13: VFB Gear - Coffins contain cell phone, GPS reciever, & flashlight. (Photo: J. Delisle)

What distinguishes *The Haunting* technically from *Urban Archeology* is the use of cellular phones, Bluetooth beacons, and GPS for game play. For *The Haunting*, we wrote our own authoring software the Mobile Experience Engine (MEE).[v] The MEE uses XML to describe the layers of interaction to make up the game. The XML file is then fed into a code generator written in C++ that generates the game application for downloading onto the phone. Players encounter each ghost seeded with a Bluetooth beacon located at the heart of a series of concentric circles representing a paranormal disturbance. The beacon, made up of Bluetooth radio, a microcontroller, a power supply, and an LED housed in a silicone shell is placed in a tree. The topography of the terrain, the length and difficulty of the trail, and the time needed to deliver content determined the diameter of the circles ranging from 15 to 50 metres.

As players 'cross over' the outer ring of the concentric circle, tagged with a GPS coordinate, triggers content on the phone 'summoning' a ghost. The second stage of

infestation indicated as ghosts begin to inhabit the phone with sounds and images triggered on inner rings by adjusting the transmission range on the Bluetooth radio in the beacon. The ghost is fully present as players approach the epi-centre of the concentric circle signaled by an apparition in the form of a blue light. The phone sniffs the presence of a spirit at the outer edge of the Bluetooth radio range and an LED makes its presence visible. The world of spirits and radio waves collide as players are bathed in a pulsating blue glow emanating from the surrounding trees. Simultaneously, the third stage, possession, is triggered by a timer event on the phone, launching the capture sequence by asking the player to press the number six on the keypad. The ghosts are sucked into the phone and captured amidst vibrations and a collage of swirling sounds and images. The light, no longer pulsating, but glowing brightly from the beacon cuts out and the player is returned to the solitude of the nighttime forest. Using GPS and Bluetooth beacons in a networked environment, this project treats the territory of the mountain as a potent and lively interface by encouraging players to stop for a moment. Users are asked to pay attention to the connections, disjunctures and happenstance moments created when a small screen, held in the hand, is suddenly alight and alive within the overwhelming setting of the park at night. At least this is what should happen when conditions are perfect. They never are.

In our encounters with the technologies on the mountain the weather, the place, and the users revealed how these technologies are not seamless and transparent, as they often promised and propounded, but extremely sensitive, at least at this moment environmental factors brought a volatility to the technology: cold weather sucked our batteries of power, small keypads were difficult to push with precision while wearing the thick mittens that

were keeping our hands warm, and we regularly encountered satellite drift as GPS coordinates drift and change depending on the rotation of the earth (Sawchuk, 2007). The 'Devil's Pitchfork', a necessity for communications in the city, created incredible interference on the Mountain. The interference on the cell phone, a manifestation of Jeffrey Sconce's (2000) notion of haunted media, produced "faint, wispy doubles of the 'real' figures on the screen, specters who mimic their living counterparts, not so much as shadows, but as disembodied echoes seemingly from another plane or dimension" (p. 124). Thus, in providing a "living link to distant vistas," we playfully confronted popular conceptions of liveliness and the relationship between the 'there' and 'not-there' in relation to cell phone usage.

We attempted to choreograph this volatility into our planning, including our on-going field tests of the technology and design where we walked the Mountain through the fall, winter and summer filming, photographing, and plotting distances between each level of the interactions we desired to create. The instability and force of this environment remained present in at all levels of our production process which required we work, film and coordinate our software and hardware to specific trees and pathways on the Mountain. These same paths disappeared under the snows of winter, only to re-emerge in the spring.

This environmental instability was exacerbated by our decision to move the programming of interactive experiences to cell phones by supporting the creation of an new open source software, The Mobile Experience Engine (MEE). The attempt presented us with a number of difficulties and challenges, which we continue to live with: our software system remains unstable. The Mobile Experience Engine was developed in part,

as a response to the complicated state of the mobile platform world. Mobile platforms, such as cell phones and PDAs, run on as many as eight different operating systems. This means that mobile devices with similar attributes have widely differing capabilities and the capacity to streamline applications is complicated as the tools must be continuously re-designed. As a software tool for generating code, the MEE creates a layer of code that can be compiled for different platforms. Nevertheless, there proved to be continual negotiations between what we, as designers, hoped to create and what was feasible from the point of view of the engineers within the time frame of the grant. This required a constant negotiation on the parts of designers and engineers and on the production process as a whole.

Conclusion: voices from beyond at the vanishing table

In conclusion, these outdoor surroundings provide a rich but unstable setting for new media design. Every place has its own challenges, personality, demands and rules that as designers and users we are asked to dialogue with, listen to, and respect. Any place is home to a variety of inter-actants (Latour, 2005): humans, animals, flora, atmospheric conditions and technologies. In our case we encountered cyclists, skiers and hikers; squirrels, dogs and raccoons; trees, heavy underbrush, roots and stumps; sun, rain, snow, shifts in topography whilst juggling handheld phones looking for beacons and invisible GPS hotspots along pathways and in the trees. The presence of many voices from beyond includes the physical terrain we encountered: an active, ongoing trickster usurping the designs and interactions that we may create from the safety and warmth of our studios. In this way, the invisible hotspots demarcating potential zones of interaction

act as a focal point for a communicative occurrence and are designed to interact *with* a particular place and the beings who inhabit it, including of course the people we ran across or who found us. In what became the most poignant moments in *Urban Archeology*, one participant talked of his cancerous tumours as he wandered through the park where he now lived after arriving in Montréal, by bus, for treatment at the nearby St. Luc Hospital.

The narratives that we encountered and which unfolded were not arbitrary anecdotes. These historical descriptions are deeply tied to very specific places and cannot be transported anywhere. Rather than erasing place, one can invoke it to challenge to the often wide-spread and contagious urban amnesia that tends to bury the past with bulldozers. Historicizing place in the present offers a potential to resymbolize place in conjunction with its past, thereby politicizing the present (Zeffiro, 2006b). In every sense, imbuing a specific place *with* historical fragments and mediated via locative media substantiates the volatile interface. The fragmented aural histories call attention to the volatility of the environmental interface.

These locative experiences, as we have suggested, act as a kind of table for gathering or a meeting ground for a number of different spirits. Here we draw upon Darin Barney's discussion of technology as a kind of "vanishing table" a phrase with deliciously ghostly resonance. These hotspots, thought of as a vanishing table act as the *raison d'être* for a variety of interactions that can create temporary moments of community: between players; between players and the technologies held in their hand; between players and the very ground upon which they walk or the chilly air they pass through, which is alive with ethereal clouds of electromagnetic spectrum. As Barney

writes, “It is certain that community is impossible without communication; it may also be the case that communication is meaningless without a world. To comprehend the relationship between digital technologies and community we must hold these two prepositions together” (p. 63). Barney’s thinking on this subject captures the paradox of the locative media experience. A table both separates the diners from each other and provides the means to be connected at a common ritual, that of eating. Likewise the information and images transmitted via these technological assemblages both interrupt the habitual movements of potential users through the space, but also provide a reason for them to gather in order to see anew what may have become routine. A hotspot must be loud enough to arrest the movements of users temporarily, yet quiet enough to encourage a connection to that particular location that has been seeded with image, text or sound.

To return to the words of Durham Peters for a moment, we do not want to eliminate the spectral elements between people, the moments of unease or discomfort that may be produced because of the social context of class, laid bare in *Urban Archeology*. We are not concerned with the lack of precision of our hotspots. Nor are we daunted by the variability of the volatile interfaces that are the ever-shifting environments in which we locate our projects, particularly in spaces like The Mountain. We choose to design for locative media because the very challenge of the volatile interface puts our faith in technology’s ability to seamlessly deliver information via these invisible networks into abeyance. These environments avail us of the possibility for chance, indeterminacy, and random happenings to take place that may at times usurp our carefully pre-programmed events. This is fully commensurate with our desire to create an ample breeding ground for the ghosts of history to the newness often associated with locative media.

Key Terms and Their Definitions

Bluetooth Beacon: Bluetooth technology is a short-range radio technology that allows the wireless networking of computational devices, data can be exchanged between mobile technologies (i.e. Mobile phones, PDAs, laptops) which can be linked at a distance up to 10 meters.

Traditionally, a beacon serves as an aid to navigation. For *The Haunting* project, a Bluetooth radio, coupled with a microcontroller, a power supply, and an LED, was placed "in-situ" in the park. The beacons were used to help users identify content hotpots and navigate the park at night. As users approached a beacon with a cell phone, the phone would discover the beacon via Bluetooth, which in turn would trigger content on the phone and switch on an LED for the duration of the interaction.

Electro-magnetic Spectrum: Spectrum refers to the transmission and regulation of airwaves into frequencies. The electromagnetic spectrum is organized by frequencies according to the length of the waves carrying long or short communication signals. These frequencies are allocated in bands referring to services on an exclusive or shared basis (ITU 2004). There are extensive regulations regarding service category (fixed service, mobile service), and service type (this describes types of transmissions and emissions).

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 conveniently operated by the Air Force (Monmonier, 2002, p. 12). This worldwide MEO (medium or middle, earth orbit) satellite navigational system consists of a constellation of 24 satellites, which orbit the earth twice every 24 hours (Monmonier, 2002, p. 13-14; Brain & Harris, 2006, p.1).

A GPS receiver acquires positionality using two pieces of information: 1) the location of at least three satellites; and 2) the distance between its position on the ground and each of those satellites (Brain & Holmes, 2006, p. 2). This operation is based on the three-dimensional triangulation of intersecting circles (Monmonier 2002, p. 12, 174, 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.

Brain, M., & Harris, T. (2006). *How GPS receivers work: How stuff works*, http://electronics.howstuffworks.com/gps.htm.

Monmonier, M. (2002). *Spying with maps: Surveillance technologies and the future of privacy*. Chicago & London: The University of Chicago Press.

iPAQ: The iPAQ (International Physical Activity Questionnaire) is a hand-held portable digital computing device with wireless capabilities such as Bluetooth and GPS. It is also referred to as a Personal Digital Assistant (PDA). It was created by Compaq in 2000 and later bought and further developed by Hewlett Packard.

Location Based Media: This refers to fixed media artifacts that take into account both the specific geographic, historic and cultural significance of a place and our cognitive interaction with that place. In other words, our understanding place is informed as much by "how" we experience a place as "what" we experience in that place.

Locative Media: Locative media attaches digital media to global positioning satellite (GPS) coordinates accessed by mobile communication technologies. Locative media is an artistic sub-branch of ubiquitous computing research initiated at a "Mapping the Zone" workshop held at RIXC in Riga, Latvia, 2003. Its early practitioners, such as Marc Tuters and Karlis Kalnins, were interested in the relationship between the military developments of this technology and the types of proximity or relationality it can reveal about spaces and places. To date, it has been taken up by a number of artists, researchers, and activists interested in extending the shared potential of the technology by creating applications allowing users share local histories and community based information.

Site-specific Installation: A site-specific installation is a term derived from contemporary art, which refers to a work created for a specific space or place in time, which is often 3-dimensional and includes performance elements. The work takes into account the viewer's entire sensory experience coupled with the specific geographic, historical, and cultural significance of place. There is an ephemeral aspect to site-installations in that they are often temporary and once removed from the site in which it was installed can only be accessed through documentation.

Ubi-comp: Mark Weiser coined the term "ubiquitous computing," while working at Xerox Palo Alto Research Center (PARC). He argued that in the third wave of computing, technology would recede into the background of our lives. By deploying a network of small task specific sensor based computational devices embedded in the environment we can create ambient aware or smart environments. Using mobile devices we can interact with ubicomp environments what is sometimes referred to in physical computing as the "internet of things."

Weiser, M. (193, July). Some computer science problems in ubiquitous computing. Communications of the ACM.

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[i] For a recent overview of locative media, see special issue by Leonardo, http://www.leoalmanac.org/journal/vol_14/lea_v14_n03-04/essays.asp

[ii] Dans la Rue, is an organization offering outreach programmes for youths, http://www.danslarue.com/; Stella, is a non-profit organization for sex trade workers in Montreal, http://www.chezstella.org/; Séro Zero is an HIV-prevention group for bisexual and gay men.

[iii] http://www.bbc.co.uk/bristol/content/madeinbristol/2003/09/15/wireless.shtml

[iv] http://www.virtualmuseum.capm.phpid=story_line&lg=English&fl=&ex=00000224&sl=4198&pos=1

[v] The MEE is an open source software development kit for creating advanced applications and media-rich experiences on mobile communication devices. http://www.open-mee.org.