

The Mobile Urban Experience: Art and Social Interaction in The PORTAGE Project

(DRAFT)

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ABSTRACT

The ongoing research of academics, artists, designers, students and engineers at the Mobile Experience Lab at the Ontario College of Art & Design has created a broad, flexible and inclusive methodology that seeks to address the impact of emerging media technologies, current theoretical discourses, and the value of user participation in the resulting creations.¹

In our current artist/designer driven research project, PORTAGE, a short street in downtown Toronto will be converted into a virtual theatre. Users with a range of mobile devices will be able to interact with participatory content experiences: spraying virtual graffiti on wall, turning surveillance cameras back on themselves, collaboratively remixing music tracks through choreography, or exploring the history of the specific locale. Users equipped with highly capable devices (e.g. with Bluetooth and GPS) will have one level of engagement, but others with simple voice or text capable phones will be able to access the experiences on another level. Even visitors with no device will be able to participate: by banging a steel drum for example, and creating a digital signal in collaboration with other online users.

This project emerges out of other successful locative media creation at the lab and extends a methodology that includes:

- active brainstorming with artists, designers, engineers and
- breaking down projects into their component concepts, technologies and techniques and recombining them in new and unexpected ways;
- blending established context paradigms (narrative, documentary, gaming) with real-time interactions (co-creation, iterative development, content uploading)
- employing charettes to explore the content creation potential of newly developed technologies and identify further development needs

The goal of PORTAGE is to combine the diverse skills of all the collaborators to address pressing social issues, investigate innovative social interactions (i.e. a digital commons) facilitated by mobile media, create unique technological platforms that can support the content creation, and deliver to the user a meaningful and new experiences that speak to the unique time and space possibilities of mobile media.

This paper discusses the relationship between our lab-as-studio methodologies and the interactive project experiences that emerged. The

purpose of this discussion is to query our own methodological assumptions for their effectiveness in creating innovative user experiences and to understand the ways in which they diverge from other current practices in mobile labs, both academic and industry-led. As well, we seek to understand whether these inherently artistic and collaborative methods in fact result in user experiences that are phenomenologically distinct from what would otherwise be produced and result in innovations that wouldn't be possible with other approaches.

1. METHODOLOGY

The Mobile Experience Lab at the Ontario College of Art & Design is exploring and developing user-oriented activities for emerging locative media. Led by faculty with art, design and cultural studies backgrounds, we have married the goals and methodologies of these different fields to arrive at a flexible, exploratory and responsive research practice at the intersection of action research², ethnography, iterative development and Relational Aesthetics. The locative domain – which includes elements of mobile data networking and real world site specificity – is evolving quickly, both in terms of new technological developments and social networking opportunities. As a research team with a foot in both art creation and academic studies, we are equally concerned with the actualities of what we and others are producing and the potential that remains to be explored; while we are conversant with the practicalities of mobile communications and cultural studies we remain focused on the transformative opportunity of the user experience.

The Mobile Experience Lab is an example of the increasing interest in the overall evolving nature of technical and social research, especially as it is manifest in the context of art and design practice, study and pedagogy. Simply put, it works on the principal that knowledge gained through direct experience (qualification) is likely to result in changes in thinking and behaviour

among the participants, in contrast to the extractive models of research (quantification).³ The methodologies available in this context are as varied as the methodologies at work in the broad range of artists' studios and therefore bear examination.

In the lab, nicknamed 'the Salon,' a group of faculty, students and engineers, with input from small industry partners, engage in a cyclic and collaborative process of brainstorming, ideation, concept and scenario development, destabilization, deconstruction and reconstitution, consultation, building, testing, rejigging, production and public presentation. The goal with such practice-based research is to go beyond the probable and plausible and explore the limits of what is *possible* in a given situation.⁴

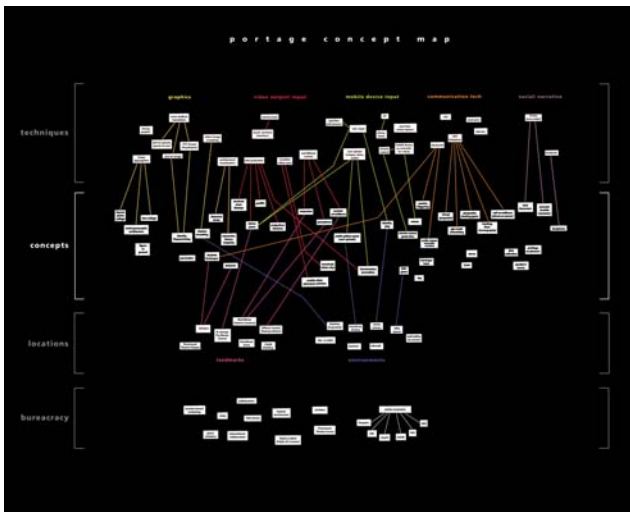
In our current project, PORTAGE, we are examining how a specific urban site can be transformed into a virtual 'theatrical' experience through the introduction of mobile networking technology, environmentally installed input and output devices and actual *agents provocateurs*.

In the early stages of this project we went from roundtable brainstorming to blue-sky concept development. These sessions included the faculty researchers, art and design students, software and hardware engineers and key personnel from small media firms who had experience in art-based research. The sketches and scenarios that were then put on the table were broken down into their constitutive elements, revealing significant overlap and common interest in certain themes, techniques, social concerns and opportunities.



These elements roughly arranged themselves around emerging issues. For example, virtual geography, GPS, location, historical mapping, voyeurism and surveillance defined an interest in the relationship between user and place. Similarly, narrative morphing, viral characters, choreographic tracking, and identity implied a deeper role for the user in constructing the experience. These will be further elaborated in the context of current social research below.

The elements were then re-grouped as being primarily techniques, concepts, locations or bureaucratic concerns/opportunities.



The possible interrelationships between them were mapped and from these as series of concrete scenarios were developed which incorporated as many of the common elements as possible. These included:

1.1 Cicadas

The social theory of swarming combined with the technique of electromagnetic frequency (EMF) detection. Users talking on cell phones at certain locations along our target development area (John Street, a short street in downtown Toronto which is home to our lab as well as many media, entertainment and culture institutions) trigger swarms of virtual cicadas,

sound and light emitting devices installed in trees. This draws parallels between signal emission as a communication imperative in both the human and insect worlds. It also creates a situation of passive interaction whereby users play a role in the experience without necessarily deciding to do so.

This project reflects the team’s collective interest in users who don’t see themselves as such, and pass through urban spaces as solitary users of PDAs, mobile phones or laptop computers. While members of youth culture or industry people might be engaging in social networking, mostly through social networking websites such as Facebook, in order to participate in social or business networks, most individuals in urban North America still consider their mobile devices as one-to-one communication devices. Cicadas seeks to call the attention of passers-by carrying mobile devices to the possibilities that these devices are small computers capable of a range of interactive experiences, and even able to trigger experiences without user intention.

1.2 I Spy

A twist on the roles of surveillance and its citizen-based inversion, sousveillance⁵ in urban cultures. Specially installed Wi-Fi cameras transmit images to large display screens at street level and passersby are invited to control, manipulate and record the images of themselves (either for future users to stumble upon or as a take-away downloaded to their phones). The always-on nature of the surveillance apparatus provides a further introduction to users to move from passive to active participants. In this case they are able to combine the image of themselves with images of other locations along the street through keystrokes and the actual movement of their bodies within the frame. Current images can be blended with past images, highlighting for example the contrast and tension between daytime use of this street and its

transformation after hours into the most tensely pack nightclub district in North America.

In rapid prototyping sessions, or charettes, we erased the thematic of surveillance and highlighted the technological possibility. By removing the context of surveillance –which our project team was deeply committed to understanding in relationship to social surveillance context of city life and users of mobile phones—our team (led by designers engineering on open source platforms) created an imaginative and playful re-purposing of the surveillance camera as one leg in a system of linked screens, cameras and phones. By playing with these items, we came to understand surveillance cameras as something that can be reimagined as other types of device with roles that differ from the standard practices of and dynamics produced by photographic cameras.

In one instance, for example, we, critically, turned the camera on itself, making it a tool that allows one to consciously insert herself into a social narrative of her own making. More, we repurposed the cameras to overlay or fill the surveilled image. As such, users approaching surveillance cameras can control – not the angle, or focal point of the camera but instead, the actual image. As such, the surveilled subject is no longer subjected in the usual case of photographic images. This image, instead, can be entirely distorted by the image of the user approaching the camera, making the surveillance camera something that subjects the conscious user, by choice, rather than the unsuspecting passerby who is unintentionally caught on camera. The surveilled subject views this manipulation either through the public screen or via her cellphone.

What is surprising and exciting about this new technology is not that erasing the context creates innovation. Rather, the inherent bias of the technology – that surveillance cameras surveil – was not eliminated, but rather, was, by necessity, maintained but repurposed in a manner that

reveals and critiques the notion of surveillance. This illustrates the difference “between the practice of data processing and its narrative”.⁶ Phenomenologically there is something very interesting that occurs here, because the experience is inherently both playful and irreverent. To erase another subject with one’s self, and to supplant pieces of their image with one’s self is an act of power – that is simultaneously playful and teasing, even as it is willful and manipulative.

More importantly, this experience occurs in a different context that is both mobile and urban. Were game producers to place screens and cameras in the street for play, the experience would be akin to a simple movie set, where the film created was live and interactive, and where camera movement and control is replaced by users who manipulate the image via the movement of their bodies through space. While anyone in the public space can view the experience on the public screen, the mobile user, who is actually surveilled can view herself either as the subject of her phone, as she moves in real time, or, alternatively, on the public screen, as the subject of what can be termed a public film.

1.3 Wall of Sound

Wall of sound is an environmentally installed suite of mechanical, sound emitting ‘instruments’ that users can ‘play’ through an interface on their mobile phones. The opportunity to jam in real time with other users in the immediate vicinity creates a real world manifestation of mediated social networking.

This installation also begins to address social and cultural imbalances characterized as the mobile device, the diffusion gap inherent in class and economic uptake of new technology.⁷ Some of the instruments are available only to users with sophisticated devices (and the knowledge of how to use them), while others can be controlled through simple phone calls or SMS messages. Certain instruments will also be

installed that are meant to be played by users with no devices, by banging on a drum for example and introducing that signal as data into the system.

Once we had identified these overarching scenarios our engineers started working on the technical components that would be required for their deployment. These would include custom software for mobile devices and our servers (often created with Processing or Python), server configuration, hardware construction including electronic relays for digital-to-analogue applications, and open source tools where they were available. Because the engineers are also artists and were deeply involved in all of the brainstorming and development session, they were often able to discover and develop additional techniques or content opportunities.

After a certain stage of technical development we would enter into charettes, intense, multi-day workshops in which artists, designers and students who were not closely associated with the project would be invited to create sample content with the platform that we had developed. Charettes had two significant research/creation results.⁸ First, the possible uses for the tools would expand significantly. Creators would regularly imagine uses outside of what we had predicted and thereby broaden the applicability of the tools. At the same time, their uses (produced or imagined) would reveal shortcomings of the technology and identify opportunities for rethinking what features should be incorporated into each platform.

This iterative approach to content and delivery problem solving is familiar to many studio-based artists. The result is a shift from product to process. Taken together with popular interest in remixing and mashups, and theories of Relational Aesthetics,⁹ the resulting goal becomes the inclusion of process in the final presentation. That is, rather than imaging a narrative or gameplaying production as the final public presentation, we move towards a

collaborative, co-creation experience in which users are allowed to reshape the 'event' and find new uses for the publicly installed apparatus.

Overall, this methodology highlights the need to *include* theory construction within the research process as opposed to having it precede the commencement of measuring and testing.^{10 11}

2. IMPACT OF EMERGING MEDIA TECHNOLOGIES

In their recent text, *Mobile Communication and Society*, Manuel Castels et. al. provide the term 'mobile network society' to describe "the enhancement of the social structure conceptualized as the network society by new, wireless communication technologies."¹² Noting the field of mobile social research as wide open and only lightly analysed to date, these researchers argue that such research is pressing, as mobile technologies have spread more quickly than any technology to date. Mobile phones, in a few short years in the early nineties, for example, surpassed landlines globally. And yet, mobile networks and the resulting linked social apparatus and social impact differ widely depending on national (and ethnic and other) cultures, practices, telecommunication laws and existing networks and practices.

We have, through our research, noted a range of "biases" situated in mobile technology itself, and, relatedly, in term of how users come to mobile communication practices. We employ the term bias here not in its colloquial negative connotation but in reference to Harold Innis¹³(1951), to refer to discursive strategies or tendency of discourse that speak to both the essence of the technology and how it plays out in society and new social communication practice.

PORTAGE is sympathetic to the aims of Castels et al, who seek to outline globally different uses of mobile technologies with particular attention to the social practices resulting from these technologies. We are deeply cognizant that

research in mobile design is in its infant stage across the globe and interested in taking advantage of this moment to investigate new forms of innovation. In many sites, particularly the United States, much mobile technology research occurs in industry labs driven by engineering, or university labs driven by social-science methods and lorded over again by necessity of engineers code mobile devices. As a result, mobile products tend to focus on handset design or features, and games that simply adjust video or computer games to mobile handsets and environments. Research by Castells et. al. has tended to focus on mobile networks in everyday life, such as flash-mobbing, socio-political organizing practices, family uses of mobile phones, and youth networking rather than possibilities for creating new uses and facilitating new social practices. Across Latin America, Europe, and Canada, however, research teams are interested in other possibilities for mobile design that for example create games, or interact in social infrastructures to query the possibilities for social interaction made possible by mobile devices.

We share with Castells et al an understanding that new practices of mobile communication reflect a mobile ‘bias’ that allows the individual to create his or her own network and communication practices that reflect choice and desire, as well to create unique, unforeseen forms of communication such as flash-mobbing. And yet, as our mobile research experience confirms many of the assumptions of Castells et al, our research project seeks to move beyond the current expectations of users, rooted in research that has (narrowly) tracked mostly individual youth and professional mobile technology use, according to a (mobile bias) that is situated in the design assumptions of mobile devices.

Castells et al for example describe the distinctiveness of mobile communication in its “individualist” tendency. Intended to mean a technology privileging the “primacy of

individual projects and interests over the norms of society or reference groups.” (xx) While our project shares the belief that mobile communication technologies and experiences are biased by user choice and that developers should privilege user desire in our ideological dedication to democratic ideals, we find the term “individualist” contrary to the spirit of networking inherent in social mobile practices, which is also well-recognized by Castells et al. As a collaborative group of artists, designers and communication scholars, PORTAGE is interested in understanding the possibilities of mobile devices, in a context that is urban, diverse and social. To that end, we recognize user choice and desire but also find that dominant users—the youthful mobile “trendsetters” noted by Castells et al—also desire social networking and group interaction, in public settings. Mobile technology users we have interviewed over several years tell us they want to interact with others in public urban spaces with other users on their terms and with as much choice and input as possible.

We approach the user experience of mobile technologies with attention to, but also resistance to Castells et al’s theories of experience. Castells et al argue that mobile technologies do not alter time and space experiences, but rather, blur social context and individual practice. This blurring results in the ‘mixing and recomposing of variety of social practices in a variety of time/space contexts,’ which, according to this group is still centered on the communicating individual. (p251) At Portage, we note a similar blurring of experience of time/ space (as users simultaneously negotiate material digital, and layered mobile spaces). Yet, we do not deprioritize the “mobile” as do Castells et al—who claim that the mobile technologies are more informed by constant connectivity than by mobility. We find that mobile technological biases—generated from the lab and from resulting social uses—tend to create individual rather than social uses for devices. In other words, these practices and biases have embedded

an individualistic bias in mobile experiences—which Portage challenges through social interaction experiences that bring art and media to the street.

A number of research groups, beyond the commercial and social science university realms, are interested in the possibilities of mobile communication to engage beyond individual desire for autonomy, for example in socio-political conversations, but also in restoring dormant or marginalized elements of social engagement – such as public art experiences and interactions—in public spaces. Castells et al imagine such a space as one of radical autonomy (of individuals and collectives), with networks of choice that alter standard forms of communication and provide opportunities to successfully sidesweep regulatory and other dominant social rules. This group however begins by imagining individual desire-led communication networks. Portage has entered such a radically de-centered environment with the hopes of exploring youth trend-setters and innovative small and middle-range media business people, to better understand how to push social interaction as we simultaneously push the boundaries of what constitutes mobile technologies and mobile communication.

Many non-dominant mobile projects ideologically favour non-dominant—or what might be termed globalist or noncommercial—research practices and as such, borrow from and contribute to open source mobile development platforms. In Vancouver, for example, Mobile Muse, is creating an open-source platform to allow its network of developers to experiment with new forms of social interaction between mobile users and giant public screens. Drew Hemmitt’s LOCA project employs surveillance cameras to create games that require individuals to be surveilled and to reveal publicly the surveillance data as part of the game rules.

Our Toronto-based Portage project shares a commitment to globalist community-building. As a member of this alternative mobile research

community, PORTAGE shares a commitment to open-source software development, and practices of research that push innovation based on social need and desire and augmented social networks that serve the large needs of a global community rather than big corporate interests. PORTAGE, however, addresses such interests by beginning with the radical assumption that ideal and healthy human social infrastructures and networks bring individuals together not only for and by the work of building community, but they generate cohesion by creating a broad range of possibilities for human connection. Where town hall concepts of the public imagine a collection of individuals cohesed by social need, we seek to address societies as diverse groups with different needs—for play, experience, politics and art. More importantly, individuals and groups demand, in the digital age, to articulate their own needs and desires and as such, research in to social networking must by definition allow users to make their own networks and experiences, and to create their own forms of interaction and power-sharing or distribution. The PORTAGE model, as shall be explained, doesn’t simply reference, but embeds user desire and critique into our design and development structures.

Industry and engineer-driven mobile labs tend to follow standard practices of mobile design. Dedicated to programming using demanding languages (such as JAVA and C++), such labs become depending on engineers’ impressions of what is possible or the best way to determine how a user should use technology. As such, engineers (trained in sequential design) become leaders of design projects. Without creative leads on projects, and instead focusing on technological innovation in a box (without a sense of user experience), industry design goals become based on what has sold in the past or what the competition is selling. As well, profit biases tend to create devices with increasing device capabilities that are excessively costly to operate. In North America, monopolies routinely tie service providers to product

features, binding consumers to a single company's phones and costly services and disabling free features such as Bluetooth. Finally, in our experience with a range of mobile device labs from leading North American companies, they often push their technology to the next level with no concept of why it might be useful or who might use it. Such researchers have told us "we have no ideas," and inquired into our different design practices Industry creating designs and then deciding what they do and how to sell them.

The results from the above cases (engineers leading design, profit leading motives, and engineering innovation pushing project goals) mean that "innovation" (the creation of some kind of new social or individual experience) in the lab is slowed. It is often consumers themselves who, through resistance to these constraints, create innovative technologies or experiences. The Apple I-Phone for example, which worked only with a single phone network, was mercilessly hacked by users, who created new ways of networking the device. The happy result was that Apple found it was forced to open the operating system and encouraging this sort of intervention.

Portage's theoretical commitments as well as interdisciplinary, and, emerging from an art and design university, are unique. We combine art theory with new media theory, creating an interdisciplinary approach privileging discovery and innovation, human creativity, local-global communities, and radical social networking,

In this project, we have opted for designer-engineers who are learning to use accessible open source coding, rather than engineers who tend to think in incremental design terms, rather than user experience. We are self-reflexive and routinely have reassess our design methods to understand them and be sure we are using methods consciously and consistently and that they are effective.

For example, early on in PORTAGE we abandoned our intentional commitment to user testing, in the traditional sense, where innocent users were brought in to test and evaluate our designs. We did this for two reasons—we work with iterative design, meaning we mock up an entire experience to determine if it is pleasurable or interesting, rather than creating increments of design and then patching them together at the end of the project. Iterative design done by new designer-engineers requires patience—it often means that parts don't exactly work and as such innocent users will be unlikely to provide us with useful responses and often frustrated. As well, because our team includes 8-10 people with a range of skill sets and academic histories, we include "innocent users"—both those of us who are new to mobile design and bring distinctive skills sets to the team, and undergraduate and industry participants who have never worked in mobile design. These individuals, who are full, participating team members, provide "user" feedback that is useful and often includes recommendations that are highly useful in that they reflect an understanding of our team's possibilities.

We have come to recognize this type of participatory design as not only entirely valid, but deeply effective—we have a sense of what is timely, interesting, and engaging to a wide variety of audiences, because that group is continually working on the project team and vetting ideas and directions for projects, in a collaborative sense that by definition must please a range of interesting and groups.

Instructively, our industry membership in Portage has injected an ongoing attention to what is new or cool that we have produced, because this, of course, is commercialisable. For Portage, commercialization as a concept has become another way of articulating something that is innovative and therefore useful and interesting to us as researchers, And, because our partners are middle- and small-sized media companies, their interests in commercialization

are more in line with pushing media to become useful, valid and interesting, which results in reasonable profit, in contrast to large media industries whose attention is to the mass market and lowest common denominator experiences, aesthetics, and technology. This distinction we have found to be enormous and to define a broad contrast of: quality versus mundane usability, innovation vs. salability. As such, Portage, while we were early on uneasy about how our conceptual and ideological commitments with merge with our industry partners, have become easy advocates of working with small and medium sized media industries. Their methods and time commitments keep us on our toes and our timeliness, and their innovative spirit keeps our eye on “cool” and their commitment to innovative media mirrors ours, and our research methods can be handily matched to their timeliness and reporting structures to create time-limited projects grounded in collaborative methodologies, that produce.

3. CURRENT THEORETICAL DISCOURSES

Differently, Media Studies, with its crucial commitment to understanding technological innovation as reflecting social infrastructures and cultural practices, provides concepts and tools. Guided by media studies, Portage embraces the belief that technological innovation means the creation of entirely new phenomenological and material user experiences, rather than grafting a previous technological form or concept on a mobile device. And yet, Portage is at the same time entirely cognizant that much of what is ‘new’ is actually some form of technological montage or altered conceptual idea. Simulations or repetitions of previous social interaction experiences, in other words, are entirely valid because we employ them in different contexts, for example, that mobile, and art-based, and which as a result become their own entity.

To that end, Portage is methodologically committed to “mashing-up” existing technological innovations into new and strange creations to see what experiences result. Mash-ups also help us to keep highly disciplinary thinkers away, and instead to maintain a team of interdisciplinary members who have basic abilities to tie together technology and program in open source, often visual-based software, so that our focus remains on user experience rather than segments of design.

Our methods also borrow from cultural studies and anthropological ethnography, and, from art theory, a commitment to practices of radical collaboration and self-reflexivity. PORTAGE’s success has been in the open spirit of self-critique that occurs throughout the process, an imaginative, implicit exploration of tacit knowledge¹⁴ —to our desires to become destabilized by better reason, data or apparent findings that suggest the need to change course for example in terms of concept, technological aims or user experience.

Unlike trends in (the aforementioned) industry-driven mobile research, Portage seeks to give users what they want. The industry belief that users will buy something because its new is not only unsubstantiated but, as media studies has argued, it demonstrates a profound disregard for the user/viewer as a “dupe” with no critical capacity, or commitment to a broader social network or community. Portage has found that when users are queried regarding why they like or dislike a technological design or mobile experience, they feel respected and are happy to comply with details, as has been well established by ethnographic studies research.¹⁵ And from the standpoint of commercialization, it makes more sense to understand how individuals use technologies (which is often in contrast to its intended design or use) when designing, in order to sell.

Portage’s methodologies, as well, are deeply informed by our past learning as a mobile

research team, and ideological and conceptual commitments that ground the project. In our past mobile research with the MDCN, we gained a strong sense of what users want in mobile experiences. During that time, we interviewed a range of users with a range of mobile experiences designed for park spaces. These experiences included a haunted mountain game¹⁶, interactive narrative walk through Banff park and an urban park¹⁷, and interactive and collaborative audio experiences¹⁸. We found that users want: to interact with one another in such games/ experiences, they want to leave a trace of themselves on public spaces where they play and they want to alter the rules of games or add additional items, strategies or content to them. We continually keep these ideas in mind as we create experiences for Portage.

As well, Portage is grounded on the concept of bridging the digital divide, cognizant that the noted users biases apply only to individuals who are willing to play with mobile devices and don't include the unindoctrinated; these range from "innocent" users who don't know the capability of mobile phones (to provide for example, gaming and art experiences), to technophobic individuals, and finally to those opposed to the use of technology in public spaces. Portage seeks to approach and intrigue these potential users, who are part of the mobile/digital canvas by virtue of passing through city streets, or, in other terms, are part of a mobile/digital urban network. Portage addresses these users with respect for their biases and ideological disposition toward technology, querying whether, if introduced to innovative mobile social experiences, these individuals might come to see themselves as participatory members of this already existing social network. More, what might become possible in social networks as such, that can be deepened by experiences created through broader membership?

These issues are active in current art discourse as well. The possibility of creating experiences in which the user-to-user interaction is integral (as

opposed to the producer-to-user model employed in broadcast media), and characterized by Nicolas Bourriaud as relational art, which takes "as its theoretical horizon the realm of human interactions and its social context, rather than an assertion of an independent and private symbolic space."¹⁹ He argues that it was precisely the emergence of a worldwide urban culture, with its increased mobility and deterritorialization that pointed towards a more participatory form of engagement with art and culture.

Finally, Portage is deeply invested in understanding the phenomenology of the mobile experience. Lev Manovich (2003)²⁰ has described mobile space as augmented by 'layers of data.' Indeed, this quality —its layers of mobile, digital, analogue, as well as ambient cityscape (visual and aural data) make the mobile experience distinctive. Users in mobile experiences, as well-demonstrated via I-spy, constantly negotiate between their physical self, moving through space, guided by their self-image on their phone—an image that is filtered by the surveillance camera and manipulated by effects generated by the computer through which it is fed and regenerated. Finally, the self-image is filled by something else- an effect provided by light, image or even human body. Where the magic of photographic images has said to be its reflective 'trace' of the real, the magic of this mobile, manipulated, live image, is its augmented reflection of the real- that both bespeak s of "reality" in its real-time ness and reflection of the image of self, but as well, reflects (nearly) real-time manipulation. The layers, in other words, are constantly apparent. Additionally, as the subject moves through space, she becomes more immersed in the manipulation. The effects might be minor or might be deep, but the subject can only ever see her image as augmented, even while she is aware of the physicality of her body, as she holds the phone, glances at the public screen, and moves through space. The constant negotiation of augmented self-image offered by I-spy reveals a

core bias of the mobile experience that users experience phenomenologically.

4. IN SUMMARY

Portage is investigating a range of research questions that push at current mobile research that has been invested in early adopters, and particularly youth and industry culture. By constantly blending artistic research methodologies and practices together with critical theory and collaborative interdisciplinary working methods, Portage finds we are producing experiences that are engaging and innovative and push the boundaries of what might be typically viewed as mobile games and experiences. More importantly, we find that mobile users are a much larger, eager and creative group of individuals who seek greater social interaction and engagement, as well as opportunities to create and hack and repurpose, and then open source their resulting tools and mobile experiences and art products, for the community. Portage argues that this broader community must be viewed as key members of the mobile network society, even if they don't see themselves as such.

Industry should also take note of the fact that the desires of users of mobile devices—social networking, community, art/music development—are in keeping not with self-gain but with ideologies of global community and sustainability. By keeping design focused on technological innovation driven by quick development and profit, big industry will in fact be less profitable than if they heeded user desire. As well, researchers in academia, art, industry and hybrid labs should look to this broader mobile network society as we continue to imagine possibilities for mobile design.

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