Augmented Spaces and the Pursuit of Agonistic Democracy: A Report from the Front of Mobile Experience Design

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Abstract
This paper considers possibilities agonistic democracy through mobile technology architectures and design processes. Exploring a range of theories on the public sphere and agnostic democracy, including the work of Habermas, LaClau and Mouffe, and Howarth, the author seeks to place mobile design in a broader context of citizenship and public interaction, considering how these might be enhanced through technology and design process. The author takes the discussion to the level of spatial theory (considering Laclau, LeFebvre and Massey), to investigate further Lev Manovich s intriguing suggestions about the possibilities for social interaction and art in mobile spaces. Led by the work of Howarth and Manovich, the paper contrasts the role of space and possibilities for subjectivity within Internet vs. mobile spaces, suggesting that the distinctive, hybrid time-space dimensions of the formed might facilitate interactive social communication in the latter. The paper provides as examples projects and methods from the mobile design project Portage, examining how its assumptions, design practices and prototypes both mimic and embolden agonistic practices, and seek to privilege both the user desire and process itself. As such design methods are both metaphorically and practically set up as example for a social architecture of agonist, participatory democracy.

Introduction: Public Spheres and Spaces of Action

Critical theorists have debated the possibility of a so-called public sphere in democratic capitalist societies- a "space" allowing citizens to insert themselves as agents of community and nation, into "narratives" of public culture & civic responsibility. A romantic concept today, the public sphere was, once imagined as space of *private* individuals seeking a common good, where private

industry, differentiated from the State, is deliberately excluded from this space. The concept of a coherent public sphere problematically assumes preconstituted, homogenous, and coherent populations and the public as *separate,* juxtaposed to and dualized against an (allegedly) coherent private. Broad claims rose from the concept, including Jurgen Habermas' (1962) analysis that consumer culture had destroyed the public sphere, facilitating a rise of media and state intervention in the private. Critics, countering the concept's lauding of liberalist privilege and paradigms, have re-framed the public sphere in the age of globalization, desiring to imagine a *space of action* for individuals marginalized due to social structural problematics (such as access) and due to biases embedded in dominant media and industry practices. Conceptualizing this new public sphere requires theorization at the macro level of spatial theory, and the interstices of space and social interaction and social movements, and in the context of economic, political and social boundary crossing and cross-dependency that characterizes global societies.

This paper enters this conversation, and analyses how a public "space" of enhanced access, and new social interactions and movements, might be facilitated by mobile technologies. Informed by my work on the mobile experience design research project, "PORTAGE," the paper examines how radical practices —at the ground level of mobile technology and experience design— might effectively work to create a radical space for social action and interaction. Rethinking the paradigm and practices of design, often pigeonholed in disciplinary industrial environments and lorded over by (discipline-minded) engineers, PORTAGE's research suggests that designing mobile technologies, softwares and user interactions in a radically democratic fashion unravels conventional production paradigms. Specifically, this paper analyses how unorthodox PORTAGE practices put, "the democracy back in democracy" (LaClau and Moufe, 1987) —by foregrounding process, and privileging user choice and freedom in a paradigm lauding agonist social interactions. The paper also proposes that conceptual ideas of space in the context of mobile applications and experiences indicate a distinctive architecture that is amendable to radical

practices of social interaction,

Agonism and the public sphere

A number of critical theorists of varied theoretical bents contend we must rethink the public sphere in order to continue to challenge the state's will and to achieve justice broadly, for nation--state populations and for those implicated by and imbricated within global economic systems and flow. Ernesto La Clau and Chantel Mouffe (1987), for example, have argued that a post-marxist (postmodern) democracy can foster "radical democracy characterized by agonistic pluralism where contentious groups admit to tension and engage in healthy debate that is the prerequisite for pluralistic societies. Rejecting the concept of consensus, agonistic democracies rely instead on the process of debate. The *process* of democracy is the point, enabling open channels wherein citizens can vet diverse values and as such, create spaces for different (formerly marginalized) citizen voices. Different from classical Marxism, which sees its values as counterposed to institutions of dominant society, radical democracy calls for a revolution of ideas and values -- liberty and democracy "which were already present, although fulfilled in liberal capitalism." (Castle, 2007). Left wing projects should, LaClau and Mouffe argue, force those societies to put their claims into practice. In agonistic pluralism, the claims of different groups find equivalence, and certain claims are sacrificed to achieve broader identity and social change that benefits all.

Where LaClau and Mouffe provide a post-Marxist framework for imaging the process of democratic agitation, Nancy Fraser takes on the question how globalization and transnational flow have altered the traditional concept of the public sphere. The public sphere must be re-imagined, she contends, if we are to achieve ideals essential to the concept such as social justice (in resource distribution and identity (rights) recognition) and the checking of state power. In previous work, Fraser (1992) argued for *multiple* public cultures (many, overlapping public

spheres*)* serving as counter spaces of public discourse and debate constituted by diverse constituents and decentralized local media. [1] Fraser's more recent work turns to recognize that injustices are caused both within and beyond state borders, due to the actions of nation states and industries. It is no longer valid to challenge states to address the 'what' (injustice) and 'who' of injustice- we must insist that they address the 'how' by which structural and institutional frameworks of societies set "groundrules that govern social interaction." (Fraser, 2005a, p 4) In monopolizing frame-setting activities, states and transnational elites deny voice to individuals (who may be harmed in the process), and block the creation of democratic arenas where the latter's claims could be heard and addressed. Fraser instructs that 'transformative' politics against "neoliberal globalization" can work by "democratizing the process by which frameworks of justice are drawn and revised." (2005a, p16)

Informed by Fraser, and Mouffe and LaClau, I want to think broadly about how mobile technologies can enable different kinds of publics (e.g. diverse citizens, academics, industry workers, etc) in different public geographics (global, local, national, and other) to engage in democratic process, and hold the State accountable for injustices. The architectural spaces and possibilities distinct to mobile devices present a possibility to intervene in the framesetting agendas of social interaction, and to reject neoliberal and corporate biases of design practice, to enable interactions whose goal is process, agonist social interactions.

Certainly, as Frazer argues, we must theorize and press the state to revisit policies that impinge on a functioning public sphere in this age of globalization. But as well, theorists must examine the relationships between technology, space and routine practices of communication routinely constrained by the neoliberalist values embedded in the logical paradigm of communication

[1] These include working class, religious, feminist, nationalist and other publics, and take the form of decentralized, LOCAL media: newsletters, journals, bookstores, conventions, festivals, zines, web sites, and chat groups, among others.

technologies. A vast array of critical literature has questioned whether pluralistic democracy or public spheres are made possible by the architecture and social interactions facilitated by the Internet.

Political economic theorists, for example, have charged that the global media oligarchy has come to "rule the roost" of the Internet, making it difficult for journalism to reflect upon and engage with diverse populations and issues. McChesney charges: "In the area of democracy, the emergence of such a highly concentrated media system in the hands of huge private concerns violates in a fundamental manner any notion of a free press in democratic theory," and as such facilitates neoliberalist tendencies, including industry domination of society and a weakened polity. (McChesney, 2001)

Critical theorists, such as Elmer (2002), have gone further: charging that the Internet is not decentralized, but quite the opposite--its architecture works to surveill and profile individuals. Elmer analyses the role of automated solicitation of consumer choices and resulting simulated maps in "forecasting market shifts and formatting topographies of consumption." [2] Far from being a sphere allowing privacy, the architecture of the Internet—because it has been designed and fielded by computer software produced by megacorporations (such as IBM)—routinely and discreetly profiles consumers. Consumers gain unfettered access to web engines by opting into the dispersal of their personal data (via cookies and other profiling strategies) to the search engine. This level of invasion, for Elmer, constructs an "intransigent panoptic state" (p.131) that works to "prescribe, regulate and provide access to (and control over)" (p 145) individuals and, in turn, restrains the potentially resistive cultural and political power (of consumers and citizens.)

[2] Note that my own research regarding on-line depression discourse suggests that despite the Internet's ability to make available a vast array of discourses, a dominant, neoliberal scientific (constrained) discourse dominates NGO's and state policy health discourses—not just those from industry); these work to constrain subjectivities – preaching modernist expectations of performance in order to attain "progress."

Perhaps most telling are the practical encounters citizens have when seeking information on the Internet. Because search engines are run by large industries representing neoliberalist values (that, in LaClau and Mouffe's terms, speak of democratic values but actually promote neoliberal biases,) queries to engines do not yield pluralistic findings representing society's marginal populations and individuals. [3] As cited by Elmer, Microsoft " captured a sizable portion of the Internet browser market…by merely setting the graphic browser as the default Internet gateway" thus it employed its own operating system to "encode" its own browser. (Elmer 143) This kind of silent oligarchy, which passes as convenience, or as the Internet industry likes to put it, a 'gift' to consumers, in fact *maps* potential consumer groups, by (continuously) capturing information and web data, and rejigging it to field consumers into a narrow on-line marketplace of products and ideas.

Despite browser oligarchy and the continual marketing oppressing the space of the Internet, there exist shining examples of successful socio-economic and political resistance therein, as demonstrated by the Zapatista's web-fed movement. The website Zapatistas in Cyberspace proves the Internet is a realm that can facilitate global publics—in this case, an international, hybrid solidarity movement bridging local Mexicans, North American and European leftists, international indigenous groups, and a diasporic Mexican community, among others. Fraser, LaClau and Mouffe would be well pleased with the movement's claims for the "democratization in democracy" and the dual insistence on policy change and justice claims in a variety of venues —Chiapas, Mexico abroad, and in international forums. The Zapatistas community practices characterize practices of a radical public sphere. They have organized international "encounters" to discuss global capitalist policies, and ways to create global networks of opposition and

[3] In my research on mood health information, for example, mainstream discourses of biopsychiatry are the answers to most queries for depression information, on any popular engine. This neoliberal brand of psychiatric knowledge comes from all spheres of health information—that produced by states, industry, non-governmental groups. (Gardner 2007)

alternatives to globalization policy. The Zapatistas can be cited as a success story, perhaps, though Zaptistas.org, on this day of writing, has been hacked by a conservative group pushing me to read republican economic analyses or buy a baby photo album.[4]

There is also the question of whether time or space biases prevail in the architecture of the Internet. Democratic process clearly requires communication technologies (including and beyond media) to facilitate dialogue. A critical thinkers, including the classic work of Harold Innis (1964), have suggested that technological emphases on *space* that stress national cohesion tend to embue technologies with centralized power. The Internet can be viewed as a new symptom of this trend, wherein industry and the State surveill, map and control major portions of western consumers and citizens**.**

Henri LeFebvre (1991) claims more broadly that *all* space is a social product embedded with mainstream values, affecting how we imagine and use it, so that, in late capitalism, social spaces are dominated by neocapitalist ethics and function to reproduce this economic and social system. LeFebvre charges that engineers and planners play a significant role in organizing 'neoliberalist public spaces.' These regulated urban public and digital spaces, in turn cause citizens to regulate their practices within them, in keeping with neoliberalism values. Everyday surfers and even those searching Internet spaces to engage in agnostic social dialogues and movements, must negotiate through spaces dominated by neoliberalist discourses lauding neocapitalist modes of behaviors, including consumerism, personal responsibility (demonstrated through the former), and broadly equating any technology with progress.

As well, the Internet surveills most users (who consume information, products and services),

[4] When following a link to comandante Esther, I was linked instead to Zapatistas.net, a site using the Zapatista movement name to steer interested parties to conservative lines on a range of items from political campaigns and civil rights to child labor. The only information on actual Zapatistas came in the form of commercial sites hawking Zapatista-emblazoned products for purchase.

placing the power gained by collecting knowledge of consumer and citizen behavior back in the hands of the state and industry. Rising out of consumer capitalist environs, non-industrial and even consumer information web sites serve up neoliberalist politics and values that espouse global market liberalism and a passive, but economically productive citizenship. [5] Neoliberal web logic colors and constrains our very subjectivity —as workers, consumers and citizens— dressing activist policies and radical process-driven social movements as antithetical to consumer capitalist democracy. Given its architectural biases that constrain practices of use, industrial hegemony that pushes products at consumers, its normalized neoliberalist discourse, and broader problems of user access, the Internet tends to be a heterogenous "space" where individuals are addressed as independent consumer actors are deterred from social agonism, and where alternative social politics get lost, and often degraded, in the mix. Social conservatives, with much at stake in perpetuating neoconservative economic and social policy, will continue to use all means—legitimate web engine (neoliberal) algorithm and illegitimate hacking practices—to steer Internet users away from alternative social movement and interaction discourses. Building an empowered community of global agonistics is decidedly challenging within this web architecture and economic framework.

The different spaces of mobile experience

It is worth considering, theoretically and practically, how the mobile architectures and phenomenological experience of mobile use create different possibilities for subjectivity, particularly how we understand ourselves as active subjects, consumers and/or citizens, and different frameworks for imagining and engaging in social interaction.

[5] My web health research has shown that a range of information from government, industry, NGO and media sites repeat a script espousing overdiagnosis and overtreatment of depression with pharmaceutical consumer goods, intended to get individuals, particularly women, back to productive work and family lives. (Gardner 2007)

Might it be possible that the spatial dimensions of mobile technologies, particularly the intersections of space with time therein, are different from the Internet experience, precisely and most obviously because the mobile subject moves through material space while utilizing technologies that can move through both space and time? Where the Internet users move through virtual space while physically confined to the realities of material space, mobile technologies allow the user seamless intervention into both spheres, at will, even simultaneously, and while she negotiates fluid time. Might we differently analyze mobile technologies – both the spaces of content and architecture and the mobile spaces in which they operate— as places that present phenomenologically distinct experiences. These experiences include porous time and space experiences, constantly mediated by movement through public spaces rife with social interaction and engagement.

Ernesto La Clau's theory of space has been critiqued for juxtaposing time and space, suggesting that temporality must be conceived as the exact *opposite* of space. The spatialization of an event, he claims, consists of *eliminating* its temporality and in fact space hegemonizes time. That is, space is an architecture constrained by the symbolization of its structure, which eliminates its temporal character. Space becomes the result of practice of articulation where the typographic rules of the space—a relation of factors that define space—superceed the rules of time. Yet, given the porous nature of articulation, hegemonic rules of space are not full proof or impenetrable. Massey (1992) critiques Laclau for depoliticizing space, and (mis)construing it as a realm of stasis and standstill. Certainly Internet spaces, whose symbolic structure is characterized by porous frames and linkages, illustrate Massey's objection to imagining space as a stagnant sphere.

It makes little sense to theorize mobile architectures—whose hybrid space and time characteristics further complicate the seamless space of the Internet—as having an explicit

symbolic logic of coherence or articulating a colonizing influence on time/temporal factors.

Rob Shields, (in discussing mobile phone photography practices in Brazil) (2007) argued that the mobile phone both links and binds, represents a "coming into relationship with" (via photography). More, said Shields, there is something "unique" about the time and space elements of the mobile experience—that operate *differently* from the Internet…the performance (of photographing) representing a "virtual and present" melding. Similarly, Lev Manovich (2003) imagines mobile media as enabling a "poetics of augmented space. " He links two notable trends in contemporary society, the first being that (by 2000) the virtual had become "domesticated"—filled with ads, controlled by big brands, and rendered harmless- what Norma Klein dubbed an "electronic suburb." Second, the rise of "augmented spaces"— computer and network technologies that have "actively" entered our public /material spaces, notably video surveillance, and cellspace data--the invisible layer of information laid over physical space.[6)] These are connected for Manovich because they affect our very concept of space and our lived lives in various spaces. The architecture of augmented space is layered with context, offering both challenge and opportunity, and entails not only technological but *conceptual* issues. [7] Logically, mobile architecture is symbolized by the hybrid hertzian/virtual/material spaces traversed. With porous boundaries and overlapping areas, mobile spaces also intersect continuously with a range of temporal moments; as such neither time nor space determine mobile architectures. Rather, mobile architectures represent a continuous negotiation of time and space, neither leading nor dominating.

[6] The media, he notes, generally doesn't discuss these three techs together b/c they belong to diff industries (electronics vs. computers, and diff markers (consumer vs. professional.) While the media rarely link these (b/c representing other industries and markets), Manovich does link these.

[7]Because electronically augmented spaces personalize information for users and dynamically change over time and is delivered interactively, this space entails issues not only technological but conceptual issue-- In other words, the problem of "overlaying dynamic and contextual data in a physical space is a particular case of a general aesthetic paradigm: how to combine different spaces together."

Phenomenologically, users can travel across time while traversing physical, hertzian and digital spaces. Mobile technologies uniquely position the user as an unfolding and evolving producer-consumer of her experience. Where a differentiated and evolving subjectivity is possible on the Internet, mobile spaces engage subjects in a continual negotiation of, play with, even teases of: the false dichotomies of public/private; inside/outside; narrow/broad cast; active/passive; linear/non-linear self/other; material/virtual; analogue/digital; art/design; empiricism and art (ETC). In short, because they (and their users) negotiate multiple spaces simultaneously, mobile media technologies allow for "play" that interrogates these dualistic schisms and discomforts in distinctive ways. Mobile spaces are hybrid, unique, momentary, user-generated & experienced spaces – spaces of radical heterogeneity. As such, they might facilitate a messy kind of radical democracy/excuse for a post-modern public sphere.

Agonism and mobile spaces

Seeking to politicize space David Hogwarth (2006) argues that the concept of space requires deeper theorization in its relationship to social phenomena. Rejecting a free-standing theory of space, Hogwarth instead pushes theorists to consider the social context of space wherein an essential tension occurs—'acts' and, in contrast, 'letting go'. A preferred theory of "agonistic pluralism" might, he argues, be revealed in finding the linkage between acting and releasement. Where the moment of action is "predicated on the ultimate failure of any objectivity," the moment of releasement is "built upon the acknowledgement of contingency and decenteredness." (p128) Hogwarth's theory of spatial experience urges us to consider how to reconcile these two distinguished moments of conscious engagement —subjective, willful responses (that risk becoming "particularistic" or individualist) and a simultaneous sense of existential and human connection (that risks becoming universalist.) The goal, Hogwarth contends, is to "articulate a politics of decision and action, with the possibility of 'letting go' and releasing toward difference." (p 124)

I want to bridge Hogwarth's call to theorize agonistic spaces in terms of social interaction, with Manovich's assumptions about the need to understand the 'lived experience' of the space, or the 'aesthetics of augmented space' –which he describes as physical space plus layers of (mobile) data, (2003) where, unique interactions and social processes can be created. Manovich uses the term augmentation is to represent the necessity of physical space to mobile (versus virtual) reality, and the 'to and fro' sharing of data in that context. Presenting new possibilities for experiences, Manovich, and indeed a range of mobile artists and researchers, have recognized the problematic of data surveillance residing in mobile experiences.[8] How then, might layered data experiences, in heterogenous time/space paradigms, facilitate subjects in process and in interaction, who are both pointedly critical and invested in difference?

The mobile subject is simultaneously material and postmodern moving fluidly across boundaries, engaging interactively. This hybrid subjectivity, negotiating a material-virtual self in a hertzian-virtual & 3-D space, can only be said to be in process —a phenomena entirely *in keeping* with the radical definition of democracy, where popular will is rendered via agitation, disruption, dispute, debate of diverse and changing populations.[9] The dual hertzian and virtual spaces of mobile experience sacrifice a coherent subject and evolve beyond consensus practice. In so doing, these architectures destabilize the notion of mobile technologies as "progress"— teleological, caused, determined, and ensuring "betterment." Instead, the heterogenous spaces of mobile technologies offer the user/subject the possibility to experiment with herself in varied individual and interactive acts, within material and virtual social spaces. These interstices of fluid time and space allow for access to a range of ideas that ground the best forms of critique and agitation, and at the

[8] As PORTAGE's I-spy project (2007) and Drew Hemmett's LOCA ("Location Oriented Critical Arts") (2007) project demonstrate, mobile technologies are an ideal venue for interrogating the surveillance culture in which we are embedded. The project can be viewed at http://leoalmanac.org/gallery/locative/loca/index.htm.

[9] The material spaces of urban land/institutions/building faces/ etc constantly remind us of our human-ness, vulnerability, and our controversial socialized roles and environmental problematics.

same time, generate awareness and respect for diversity and dialogue. As well, the distinctive experience, requiring the negotiation of hybrid time and simultaneously, hybrid spaces, pushes the subject to reflect on these communication and experiential processes, encouraging a reflexivity essential to informed and healthy social communities.

The unique architecture of mobile technologies call upon mobile designers of games, art and experiences, to query the space/time phenomenological experience of this platform, and how design practices might capitalize on these biases to build innovative and sustainable social interactions and publics. The PORTAGE project enters this dialogue, considering how team, process, assumptions and goals, at *the ground* level of design, might be molded to accentuate the biases of mobile architecture. Specifically we investigate how design assumptions can fit within the mobile experience framework (constantly negotiating diverse time and space) and craft a space for the agonistic subject of democracy.

PORTAGE's agonistic design practices

PORTAGE: The Canadian Mobile Experience, is a 16-month project funded by a research and development grant from Heritage Canada's "Canadian Culture On-line" programs. (2007) Our goals are to create a trans-disciplinary team, testing and employing new design methods to deliver innovative prototypes and full mobile experiences that experiment with new forms of social interaction, in the downtown art core of Toronto, Ontario. As researchers at an urban art university (the Ontario College of Art and Design), we seek to employ the experimental practices of artists, pushing the usually experienced limits encountered in mobile hardware and software design infrastructures, and in user experience design methods. This framework intentionally destabilizes our team, deemphasizing disciplinary knowledge, and requiring a multitude of skill sets and clear, and rigorous exchange.

Transdisciplinary team, Radical Brainstorming

To undertake this process, we compiled a wide range of individuals including: engineers, social scientists, art and design students, professional video and audio artists and interaction designers and, as well, individuals from small and medium sized arts and entertainment industries. Seeking to mirror practices of agonistic democracy, we adopted a radical brainstorming method. This involves sharing research and proposals as a team, breaking each proposal apart into concepts, and re-linking them into new concepts reflecting a process of ongoing concept revision. As well, our brainstorming requires ongoing self-reflexivity and review to ensure a diversity of voices and melded concepts and skill-sets create prototypes and to analyze and adjust our process to suit our goals, particularly our intention to prioritize process itself. Like Hogwarth's call for social interaction characterized by dual willful critique and community respect, PORTAGE brainstorming is an ongoing process of simultaneous 'acting' and 'letting go'. This method, which, for us, is surprisingly functional and efficient, contests neo-liberal mandates for cultural practice. It continually destabilizes any position of authority or privileged knowledge, and arrests the formation of epistemological monopolies or their fruition in design strategies. In embedding self-reflexivity, the model rejects any notion that (democratic) social interactions can be universally facilitated—instead mobile designs should speak specifically to both the time and space in which the interactions occur.

Imagined subjects

Portage images users as heterogenous, avoiding essentialized understandings of 'the User', grounded in dualistic profiling based on age, sex, gender, income. And yet, seeking to challenge the digital divide ,while we push the extent of both low and high end mobile technologies, PORTAGE creates a range of experience scales and mediums for interaction. Our experiences thus entice users to critique the different experiences afforded in each (different) time and spatialized architectures. In this sense, we seek to foreground user desire and control in the space

of action, to understand the subject as one in process as she interacts with and intervenes in these PORTAGE experiences, ranging from co-authored sound creation, surveillance experiments, and unexpected public art installations.

Team-led Design

LeFebvre (1974), decades past, argued that representations of space produced by engineers and designers impacted both information and communication practices. In the global age, engineers and designers impact both nation states and beyond these (false) borders, crafting the manners in which cultures imagine, employ, interact with, misunderstand, manipulate and avoid technology. Dominant cultural practices of technology reflect the architectural imaginings and practices of designers and engineers. In order to critique existing mobile cultural practices and imagine new opportunities for social interaction and community building, Portage rethinks design processes to reflect and achieve agonism, rather than to drive technology production efficiently to market. But as well, PORTAGE seeks to show that design practices that considers the relationships between (desired) communication practices of users and technology, in fact, render experiences, services and products that better serve the healthy needs of society, many of which are in fact highly marketable.

Portage methods

In contrast to industry practices, PORTAGE designs are led by the team and not by engineers. We foreground user desire and experience early on and continuously revisit these needs in the design and testing of new iterations. Our data shows that mobile technology users desire new forms of social interaction, choice and input, as well as art experiences. Portage has a radical investment in understanding and incorporating broad community interest, knowledge and desire into our designs.

As such, our design practices incorporate users both familiar and unfamiliar with PORTAGE and mobile technologies themselves. Our version of participatory design incorporates these users to the extent possible—they sit at the table to brainstorm, engage in rapid prototyping sessions and participate in user testing. We use critical ethnographic methods, akin to those used in radical anthropology, to purge users of their knowledge and invite users to provide feedback and to dialogue regarding our user testing results. This type of critical ethnographic methodology shares assumptions with agonistic democracy in challenging the narrow, often cloistered practices of research and design, overthrowing the expert/user dichotomy, and seeking an array of voices that might otherwise be marginalized or ignored in the design process.

As well, PORTAGE uses iterative rather than sequential design methods, testing out complete experiences to see if they meet user desire, and reworking the entire concept based on user testing. Where sequential design practices isolate moments of experiences or fragment technologies into parts, iterative design signifies a commitment to understanding the complete user experience of a mobile prototype, privileging the whole rather than fetishizing the part. We also rope iterative design to rapid prototyping in fast-paced production weekends. These sessions uniquely push participants to exploit (pushing the frame) or alter (changing the frame) existing hardware or software iterations, and have resulted in ingenuity and innovation. These sessions have resulted in the production of new content ·(often arising from the constraints of the frame) and reimagined uses of existing hardware and software platforms for entirely different user scenarios and project contexts.

Our dialogues with industry team members have been fruitful and surprising—we have together analysed our assumptions, interests in outcomes, and methods and have crafted a hybrid PORTAGE sensibility. To our surprise, we have realized the following *common* concerns: bridging the digital divide via mobile and hybrid technologies, creating aesthetic experiences that

are grounded in the questioning of linear history-making and public surveillance practices, insisting that designers lead design, and prioritizing social interaction and user choice. These ethical and contextual collisions are likely due to the historic phenomena whereby small- and medium-sized industries (in North America) have acted as media and cultural content innovators, rather than bending for the lowest common denominator consumer (as do mega-industries). As well, smaller scale design demands greater democracy to preserve a productive work community. And yet the industry partners' interest in bringing art, social interaction, Canadian heritage, and political and social issues to mobile experiences, rather than selling their existing cultural content products is heartening , and their enthusiasm palpable.

This collaborative realization is a step toward design models that build hybrid, activated publics in environments that are, after all, laden with industrial mandates and motifs, and where cultural practices have been largely colonized by the technological biases of western industry.

PORTAGE Prototypes

To date, PORTAGE has produced four prototypes, each of which illustrates how agonistic process creates mobile experiences that feed user desire, and encourage communications and experiences. These experiences include dialogue, debate and compromise, spontaneous social interaction, cooperative and creative task completion, informed critique of structural spatial power and surveillance practices, and discovery of unknown abilities and desires—that build healthy democratic societies. [10]

The "Cicada" project reveals to passers-by the pleasure and perils of hidden technologies. In this experience, a swarm of techno-cicadas residing in urban trees create a racket and flash shining eyes, in response to mobile-device holders passing by. Here, no interaction is required or allowed.

[10] Documentation and analyses of the following projects are available at mobilelab.ca/portage.

Users instead are passive and in this subject position, entreated to enjoy the magic and insidious possibilities of sensor technology. In contrast, I-Spy is an interactive experience that allows users to use Toronto surveillance cameras to capture their moving image on the street, and port themselves in that moment, back to a historic photographed moment at that same location.

Alternatively, in future I-spy iterations, users port their moving image into a well-known Canadian film or TV show, juxtaposing their moving image, in grainy and time-enhanced surveillance-aesthetic, against the collapsed time and glossy aesthetic of moving images of TV and film. Constantly aware of the public camera—users must walk by the surveillance camera continuously to port themselves— the project reveals the insidious nature of surveillance and our abilities to co-opt these technologies to create new experiences of subjectivity. The blunt juxtapositions of different time/space realities in I-Spy illustrate well the distinctive architecture of mobile technology, and will offer us important user data to better understand relationships between mobile space, technology, and subjectivity.

In contrast, the Sound Sculpture project plays with possibilities for new social interactions around art in public spaces. Instruments and other sound devices were created for the sculpture in rapid prototyping sessions using available and found materials, resulting in innovative new devices. Anchored to downtown building, the sculpture, when triggered by users pressing number keys on cellphones, sends select sounds to users and others to public speakers attached to the sculpture. Users without mobile devices can use one attached to the sculpture, or can opt to physically manipulate the sculpture to produce sound. As well, users can record symphonies created in the public space and share them with other mobile users. This project interrogates and allows for the mediation of the digital access divide, even while it enables users desire to create their own mobile content, to engage with others in public spaces and to share, and to remix existing public (in this case audio) content.

Finally, the Portal project critiques and challenges the digital divide by transforming simple everyday devices —in this case a Nintendo "Wii" wand—into a mobile technology that can trigger audio and video and other unimagined experiences. The first iteration allowed users to move a cigar box (housing the Wii) to trigger a range of video and audio pieces commenting on American homeland security policy and the treatment of suspected terrorists, including (aural) poetry written by prisoners held at Guantanamo Bay, and a recording of the Geneva Convention for the Treatment of Prisoners of War. Portal demonstrates that innovation can happen in the adaptation of unknown, low-end technologies, resulting in new art projects and communication practices that can be simple, but produce enormous results. As well, Portal demonstrates the application of low-end mobile technologies to public critical forums encouraging awareness and dialogue around theoretical and material issues of social justice.

Access issues, the future of mobile experiences, and publics

Access to technology, enabling access to PORTAGE on our urban streets, and indeed everyday access for mobile uses remains a challenge and plays a key role in our design strategies. Access to mobile technologies and network services in North America is routinely constricted due to a few companies monopolizing the industry. This phenomenon tends to embed neoliberal imperatives (i.e. of commercialization, consumption, and limited democracy) in design methods, and structures ultimately framing many mobile experiences. For example, mobile industries tend to design for the 'masses,' with such experiences as competitive games with commodity rewards, copying pre-existing games that possess mass-market appeal (e.g. Tetris or Monopoly), or employing the forum as the next digital 'suburbia,' to circulate (or even spam) consumers with commercial promotions. Rarely do mobile designs prioritize social interaction, as is the tendency of artists and independent designers who work on mobile platforms.

Wireless services are a monopoly in Canada, controlled by a few major cellphone companies—Verizon and AT&T— which house but won't *enable* Bluetooth and other features (that can circumvent the need for cell networks) on user phones if their industry networks can't control them. This constrains both the economy of mobile devices and more importantly, any possibility for a global public sphere where not all users can finance cell network costs. As well, Canada's cellphone service charges rank among the highest in the western world, meaning that data transfer across cell lines is prohibitive, even for granted research projects. Governmental regulatory boards need to open up consumer access to cell services and modulate prices, not only for the benefits of open social communication, but, speaking from their paradigm, to allow for the (many) promises of innovative mobile research.

Because it is designed to bridge the digital divide in a public, urban setting, PORTAGE has been forced to contend with the limited features enabled on consumer-grade mobile phones.[19] Designers on similar projects, who seek to create broad access to mobile experiences with ease of use and low cost, and who refrain from hacking systems, are forced to dialogue with cellphone companies for access or to brainstorm new forms of connectivity.[20] The PORTAGE project is, in response, producing a paper critiquing the impact of industry monopolies upon mobile design research, and is dialoguing with service providers to discuss the resulting injury to both users and innovation, even as we experiment with alternatives to connecting through cell networks.

In the US, the access situation is mildly less offensive. Currently, US wireless carriers restrict the models of cell phones that can be used on their networks and limit the software that can be downloaded onto them (e.g. music, web browsing). In July, the FCC presented open-access conditions on the winner of extensive wireless spectrum to be auctioned off in Jan 2008. This means that consumers will be able to connect to broadband with any software or device they like-cellphones, PDAs and other as yet unimagined technology. As well, as bloggers have noted, the

auction presents opportunity to change the current system—allowing, for example, a wholesaler of wireless broadband to rent their network to a company that links cellphone and broadband -- allowing cellphone access via one's computer and thus yields you broadband access. However, neocapitalist entities are at work to pull back this small FCC gesture toward consumer access. In September of this year, Verizon Wireless filed a lawsuit declared that open-access rules prescribed by the FCC are unconstriatutional. Industrial-state hegemonic partnerships present roadblocks to mobile connection access that complicate mobile research projects, stymieing creative research energies, even while they restrain possibilities for democratic, participatory citizenship and creative engagement in public arenas.

In Conclusion

The messy space of PORTAGE production and experience is rife w/ intermingling that breeds both contemplation and contestation. Analogue (electronic) mingle w/ digital, hertzian w/ virtual, public (material) spaces interchange w/ virtual spaces, the material subject (with somewhere to stand) transforms into a virtual (incoherent, changing) subject and then reverts. Experiences are open, closed and mongrel. Our methods cause us ourselves to critique, problematize and solve, in an ongoing series, to act and let go.

In mediating this heterogenous and plural environment, the mobile subject, reconsiders context, experience, identity, social interaction, -- particularly relations of power. Meeting up with incongruous times in hybrid spaces, such as in I-Spy, and negotiating data coming in from various venues, the mobile subject experiences a distinct reality that at its core involves tension—where acting smacks up against release. Issues of access, and funding for research that respects publics and tension and antagonism and speaks beyond issues of profit to issues of justice, remain stumbling blocks to mobile publics. Yet, we must continue to agitate against these structures that privilege architectural oligarchy, via research grants, public policy meetings, in creating resistive

design methods and research practices. If we are to change the frames of the public sphere, and facilitated by new media technologies—themselves always framed by the architecture and the surrounding culture in which users and technology reside-- mobile spaces are the next frontier. The mobile space might indeed offer possibilities for an ongoing negotiation of identity --in terms of time, space and aesthetic-- and a reinterpretation of social interaction where self, the social and technologies all intermingle in both public and private spaces.

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