

Media City: 4

# MEDIA CITIES

International Conference, Workshops and Exhibition  
May 3-5, 2013 - University at Buffalo, The State University of New York

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## PROCEEDINGS

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## INTRODUCTION

The fourth MediaCity conference reflects on pluralities and globalities, on MediaCities everywhere. What new lines of inquiry and emergent relations between urbanity and digital media are found in non-Western cities, in post-Capitalist cities, in cities hosting civic turbulence or crossing international boundaries? What urban-medial relations are taking shape differently in urban milieux that may have been heretofore overlooked? These cities are deserving of more attention than ever before, as sites of population growth, of new cultural and social formations, of new entanglements between urban life and contemporary media, communications and information technologies, and more. MediaCities promises to expand our understanding of both media and the city today, and to articulate new sites of practice and working methods for an expanding field.

This fourth MediaCity conference inaugurates its transition from the EU funded MediaCity project at the Bauhaus-Universität, Weimar to a roving event taking place every two years in different cities around the world. Areas of focus for this year's conference fall broadly into several topics: Other Urbans, Uncommons, Zero Growth Cities, Media Geographies and Bordervilles.

## TOPICS

### **Other Urbans**

MediaCities are typically associated with post-industrial societies, Western and Asian cultures, and urban centers whose economic bases are rooted in technology. But many nonwestern cities around the world are rapidly evolving under the aegis of ubiquitous computing, and urban living in these places appears differently as well. Now is the time to recognize and identify the new models, problems and lives of nonwestern and other MediaCities as relevant to all cities. Other Urbans concerns the non-Western MediaCity, but also the marginalized Western (Detroit, Charlotte, Pittsburgh, Belfast, Leipzig) as well as the experimental (Songdo, Masdar).

### **Uncommons**

What novel shifts are found now at the nexus of protest and public space in cities, and what roles are digital media playing? How are we to understand the enduring implications for events of 2010-2011 and after, from the Arab Spring to Occupy Wall Street to whatever unfolds up until the conference itself, as each suggest diverse mutations in urban, medial and participatory formations? Lately we are seeing new catalytic reactions between these three elements. While the cases are familiar (WikiLeaks, Tahrir Square's life on Twitter, OWS's "human microphones"), their potentials to intertwine matters of economic, cultural and other representation suggest the start of enduring changes to how public space and public discourse appear within and between global cities. Each holds potential to recognize and reform our thinking of public space and public discourse irrevocably as an "uncommons." No longer modeled on a rural pasture and no longer only a problematic of shared resources and individual interests, uncommons describe novel formations located in contested shared urban events.

### **Zero Growth Cities**

This theme regards relations between growth, economy and MediaCities in diverse cases where urban landscapes and populations once considered dead or dying are rejuvenating themselves: an urban afterlife of sorts, often with clever mixtures of new and old technologies. How are MediaCities being newly inhabited and opportunistically developed in response to market conditions, and what creative and theoretical responses can we make to these developments? And what of those cities experiencing no growth (or even shrinkage)? Do wireless networks perform similarly in these cities as elsewhere? How do sensate and sentient landscapes affect life in cities whose populations don't otherwise change? What vibrant new urban events and situations are appearing in these sometimes overlooked places?

### **Media Geographies**

Today we recognize terms like "landscape" and "urban" to be non-oppositional – instead, we embrace the view that environment, social relations and even human subjectivity must be seen as interrelated ecologies. What roles do digital media play in this shift, and what new practices under a rubric of "Media Geographies" can it all suggest? For example, how are we to operate across scales, as critics, scholars, artists, designers? From bodies to landscapes that are at once local and global in scale, media geographies ask how this trans-scalar subject constitutes a form of urbanism. This theme critically engages spatial, social, ecological and philosophical implications as it mines the media cities we know for urbanities that we have overlooked.

### **Bordervilles**

How are urban conditions around national borders inflected by ubiquitous computing? What mediated forms of citizenship are emerging at these border zones, and how do they differ around the world? Bordervilles are often unofficially twinned cities that share common conditions (ecological, microeconomic, climatic) but not others (lingual, macro-economic), all of which can be affected by digital media that transcend physical boundaries and sometimes skirt national regulation. What new mediated bordervilles are to be seen, and what urban conditions do they propose? These MediaCities are diverse and ripe for study. Some include an expanded border region, (San Diego/Tijuana, Buffalo/Toronto) while others are cities divided across nations (Istanbul, Jerusalem, Shenhzen / Hong Kong).

– Jordan Geiger, Omar Khan, Mark Shepard

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## KEYNOTE SPEAKER

**BENJAMIN H. BRATTON**

Epidermis, Interface, Alter-Cosmopolitanism: The City as Layer within a Planetary Stack

Infrastructure, as much as law or discourse, produces the fragments from which political subjectivity is identified, interpolated, codified and enforced across scales, from the intra-personal to the interfacial to the transcontinental. It links the extrapolation of territorial sovereignty from an interior zone drawn by the formal borderline in one setting to the mega-urbanization of human settlement in another. In contrast to perspectives that locate the political in a realm transcendent of the polis itself, we might say that, especially now, plumbing trumps code.

Now that humans are a majority urban species, now that urbanism has become comparative megaurbanism, now that geopolitical consortia of cities have the lead over slow confused federations of nation-states in the governmental response to climate change, and now that the management of urban networks presupposes their embedding within information and energy Clouds, it is opportune to reevaluate what sorts of real, last-instance sovereignties can be derived directly from urban systems, surfaces and interfaces. To do so requires the situation of the urban within a larger context of exourban and xenourban forms and forces, and for this talk, that is to think of the City as a interdependent layer within a planetary-scale software/hardware stack. Emergent infrastructural sovereignties (like those which appear in cloud computing's distortion of national geography) seep through the surfaces of the pervasive urban fabric: not only of buildings and roads but also of weirder grids that connect the economies, energy and hydration sources, information interfaces and dense data archipelagos, all of which which differentiate and prioritize how humans interface the world and the world them. Is this aggregate steel-energy-information megaenvelope, ubiquitous but massively centralized, then a larval condition from which another, more plasmic, alter-cosmopolitanism, human and inhuman, can be derived or designed? (Subjects not of this city, but of the city, the uneven mesh that delaminates jurisdictions.) If so –even partially so– then the types of geopolitical sovereignty that may emerge through the technical relations of this composite urbanity are still un-guaranteed. The scenario described is neither a prediction nor a recommendation. If the interfacial surface of the urban fabric can interpolate a durable cosmopolitical subject, then it is also a potential technology of capture and control, and its universality a measure of the hermetic totality of the interiority it provides. Our design brief is to accelerate the available repertoire of accidents that might puncture that totality but at the same time leave in tact some alien genre of universal political presentation trailing in its wake: not a Kantian zombie globalism but a geophysical hypermaterialism for which the right to the city, and to the stack, is an essential suffrage.

**Benjamin H. Bratton** is a theorist whose work spans Philosophy, Art and Design. He is Associate Professor of Visual Arts and Director of D:GP, The Center for Design and Geopolitics at the University of California, San Diego. His research is situated at the intersections of contemporary social and political theory, computational media & infrastructure, architectural & urban design problems, and the politics of synthetic ecologies and biologies. Current work focuses on the political geography of cloud computing, massively-granular universal addressing systems, and alternate models of ecological governance. His next book, *The Stack: On Software and Sovereignty*, is forthcoming from MIT Press. Most recent selected texts include: "What We Do is Secrete: On Virilio, Planetaryity and Data Visualization," "Geoscapes & the Google Caliphate: On Mumbai Attacks," "Root the Earth: On Peak Oil Apopenia" and "Suspicious Images/ Latent Interfaces" (with Natalie Jeremijenko).

## KEYNOTE SPEAKER

### **MIKE CRANG**

#### The Pirate City: Make Do and Mend in Improvisational Urbanism

The account of smart cities has focused on key exemplars and celebrity cases, largely dominated by visions of open data producing a transparent city. This city then becomes amenable to management through the integration of various networks – typically bringing together notions of transport, energy, water and waste flows. The social realm tends to be passed over either in favour of a notion of a central control operating efficiently by bypassing democratic cycles of governance or as a contented population to be serviced. Alternately there is a vision of algorithmic smartness where a distributed form of intelligence leverages the calculative power of consumer devices to suggest a pluralised control united in a technical ecology. The appeal of the latter though tends to rely on a notion of the citizen as consumer who is pacified and happy to delegate their agency to algorithms. The question of whether this enables a democratising of control or a delegation of agency remains an important one. To answer this, the paper looks to some other places and other practices of citizenship. It looks at the appropriation of urban space taking its inspiration from William Gibson's invocation of the Walled City of Kowloon to challenge the walled gardens of proprietary systems and the coherent, and often bucolic, visions of smart cities. In speaking of such it turns to think of the heterarchic and heterologic practice of the city, that involves thinking through the recalcitrant materiality of media and its transductive potential to suggest it is neither as seamless nor as transparent as often suggested.

**Mike Crang** is a professor of geography at Durham University. He has worked on the social and spatial effects of information technologies in the urban arena for 15 years. Early books like 'Virtual Geographies', work examining the transformation of associative spaces in the city focused on the transformations of proximity that new technologies enabled. With Steve Graham, he then explored the possible rise of the multi-speed city and the effect of technologies on the logistics of everyday life in produce differential social outcomes. This they pursued into asking about the transformation of agency with increasingly embedded calculative capacities in the sentient city. Other work looked at the ways information technologies were leveraged as both infrastructure and functioned as rhetorical devices in the competition between cities functioning as hubs in the global economy. He has also worked on issues of temporality, editing the journal *Time & Society* for a decade, and issues of social memory and heritage. Studying the representation of cultural landscapes and their mediation in various institutions led to a work on touristic understandings of places. From looking at preservation he has come to be interested in discard, disposal, decay and decrepitude.

## KEYNOTE SPEAKER

### **STEPHEN KOVATS**

#OSJUBA – Open Sourcing a New Nation

After more than four decades of brutal conflict, South Sudan, the world's newest country gained independence in 2011. A complex multi-cultural and multi-ethnic mesh of peoples and competing interests, the new state seceded from Sudan after a referendum for independence supported by close to 99% of its population. Juba, nominally a capital since the 1972 Addis peace accords granted the South autonomy, this dusty regional administrative town now finds itself in the eye of a storm of competing interests, speculation and hectic unbridled development – a chaotic city juggling 'nation building' against the sheer basics of urban survival.

A capital city is however a unique place. Vested in symbolic attribution and a nation's aspirations it must act as both an efficient administrator as much as the showcase of the nation's identity. In the case of a new state still working to define its own cultural and societal contours, the capital city takes on an even greater symbolic – as well as pivotal function. In Juba, this is a free-for-all dominated by the interests of external powers jockeying for pole position in a potentially lucrative battle for natural resources. Having acted as guarantor for the fledgling state's viability to survive as an independent nation, South Sudan's oil reserves, fertile lands and Nile waters now become its accessible rewards. Who will gain the upper hand in their exploitation, and how will its citizens experience not only the symbolic assets of freedom, but participate in its autonomy and selfdetermination?

The world's first Open Source City? The Nation as an Open Systems entity? #OSJUBA proposes to apply the means and methodologies of the international Open Source / FLOSS, free culture, accessible technologies and hacktivist communities in creating a vision for the new capital of South Sudan as a national 'Open Systems' framework . Building a model to be applied in the broader context of an emergent, transparent and participatory democracy Open Source methodologies also play a crucial role in fusing diverse cultural traditions into existing, established and highly engaged global communities. Their inherent elements of cultural collaboration, grass-roots enterprise and economic innovation are driven by multidisciplinary ideals that have the ability to support and augment the most complex development issues and scenarios including:

- crowdsourcing and open access to data as citizen accessories for urban development
- transparency models for participation and interaction with policy making in government
- resource management, health care and open education methodologies
- increased digital mobility networking and communication for freer expression and cultural diversity
- new forms of citizen-based, community or device journalism, incl. SMS, radio, data streaming
- creating new economies and user-based technologies informed by local knowledge
- enabling open peer to peer education formats complementing traditional learning structures

The essential characteristic of the Open Source model is one of sustainability. As economically and politically powerful tools, Open Source technologies, mobile platforms and collaborative data sourcing methodologies now have the ability to be implemented as viable alternatives to tried and often failed attempts at nation building, urban and social development. Given the rise of user generated tools, content and technologies, the world's Open Source communities are in a unique position to strengthen the basic tenets of free and open expression, investing in the boundless potentials of media literacy, community development and individual enterprise. Building upon the initial #OSJUBA conference in Berlin in June 2012, the discussion on 'open sourcing South Sudan' was taken to Juba in December 2012 in the framework of the MEDIA & MAKERS Sustainable Media and Open Knowledge Forum #MMJUBA.

**Stephen Kovats** is a cultural and media researcher, formerly artistic director of transmediale, Berlin's festival for art and digital culture, and international program curator at V2\_Institute for the Unstable Media, Rotterdam. His interests are focused on the dynamic relationships between media, political, and electronic space and their application on the transformation of societal and cultural landscapes. In the 90's he initiated and directed 'ostranenie – the international electronic media forum' at the Bauhaus Dessau which examined the role of media art and broadcast culture within the transformation process in Eastern and Central Europe. Other major projects included a yearly series of Central European Media Art Picnics, the Archi-Tonomy workshops and the biannual 'DEAF' festival in Rotterdam. r0g\_agency for open culture and critical transformation.



# Uncommons: Uncommon Economies & Institutions

Moderated by Frank Eckhard, Bauhaus-Universität Weimar

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and Crowdsourcing
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Counter Narratives in a Time of Crisis
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Mediated Urban Space Through Geo-Located Social Micro Blogging

## TELEGARDEN VERSION 02: RETHINKING THE COMMONS THROUGH CROWDFUNDING AND CROWDSOURCING

**STEPHANIE ROTHENBERG**

Department of Visual Studies, University at Buffalo

### **Abstract**

Reversal of Fortune: The Garden of Virtual Kinship is a telematic garden, both real and virtual, whose lifeline directly correlates to monetary exchanges between the developed and developing world. The project examines the cultural phenomena of online crowdfunded charity, or microfinance, through the popular social media website [www.kiva.org](http://www.kiva.org). These humanitarian aid websites enable more affluent individuals in the West to collectively donate small amounts of money to individuals and small communities in extremely economically challenged regions such as East Africa and Central America in order to help finance their entrepreneurial goals. Examples of these pursuits include small retail businesses, local agriculture and farming, transportation and health needs. The result is an alternative economic model that attempts to build local infrastructure that would otherwise go unfunded due to a lack of government support and/or political corruption.

The live garden takes the form of a global map with the plants residing in raised platform beds shaped like continents on the floor. Each plant correlates to a borrower on the Kiva website requesting funding. Within each "continent" is a computerized irrigation system that waters the plants on that platform. The amount of water the plants receive is dependent on investment information data mined from the Kiva website. Successful entrepreneurial ventures will trigger appropriate nourishment while failed ventures may lead to dying plants, making visible the circulation of finance. Animated projections further underscore the flow of capital from the Global North to the Global South as well as provide an overview of the specific borrowers and lenders engaged in the exchange. The project extrapolates on the seminal telerobotic artwork entitled *Telegarden* created in 1995 by Ken Goldberg that enabled a global community of online users to "telematically" care for a live garden through a web interface.

The goal is to explore the contradictions inherent in this new model of humanitarian activity. Although microfinance websites can help borrowers achieve real material needs and empower them to become successful leaders in their communities, there are disadvantages that are overlooked. In its struggle to survive, a garden inherently maps and exemplifies the complex dynamics between the cultural and the organic. Through the poetic gesture and metaphor of a garden, the project asks: What are the underlying mechanisms that enable these new networks to emerge? How do these platforms shape the affective dimensions of empathy-at-a-distance? In evaluating the actual impact of these systems on their borrowers, can we move closer towards a true digital commons?

## **1 Introduction**

Founded in 2005, Kiva is a non-profit organization whose "mission is to connect people through lending to alleviate poverty." Through the Internet and social media, they claim to have raised over \$389,467,150 in loans through their website [www.kiva.org](http://www.kiva.org). On their site, they state that 867,597 lenders donated directly to over 949,721 borrowers in developing countries. A large animated text box on the homepage of their website shuttles through additional figures: "10,739 new lenders joined this week"; "31,430 lenders made a loan this week"; "6,589 borrowers funded this week"; "\$2,631,775 loaned this week"; "99.01 repayment rate to date"; "14,978 Kiva Cards purchased this week"; "8 seconds between loans" (accessed February 27, 2013).

The total amount of money raised by the organization is roughly equivalent to the amount of money allocated to large humanitarian projects initiated by government agencies and foundations. Yet Kiva's lender demographic consists primarily of individuals from affluent areas in the West. These entrepreneurial ventures, although slightly smaller in scale and local, such as retail businesses, agriculture and farming, transportation and health needs are being funded and realized by a new model of online philanthropy that collectively pools together resources for a common goal using social media. The result is an alternative model of economic aid that focuses on building local infrastructure that would otherwise go unfunded due to a lack of institutional support and/or political corruption.

So what are the underlying mechanisms that enable these new economic systems and networks to emerge? How do social media and other new technologies drive this cause-related participation and shape the affective dimensions of empathy-at-a-distance? And how does this activity impact, economically and socially, individuals and communities in both the first and third world? Have we arrived at a new vision of the digital commons?

Reversal of Fortune: The Garden of Virtual Kinship examines these questions surrounding the cultural phenomena of what has become known as microfinance, peer-to-peer lending or crowdfunding through an interactive, community garden—a metaphorical "commons" that maps the circulation of Internet-based microfinanced capital as it travels from the developed to the developing world. Through the poetic gesture of a "telematic garden," existing in both physical and virtual environments, the relationships between human life and economic growth are made visible. The project aims to explore the inherent contradictions as well as the untapped liminal zones within this new model of humanitarian activity mediated by global technological networks.

## **2 Reversal of Fortune: The Garden of Virtual Kinship**

Designed in the shape of a global map, The Garden of Virtual Kinship (abbreviated title) collects and compiles data from one of the most popular philanthropy crowdsourcing websites, [www.kiva.org](http://www.kiva.org), to visually represent and track the monetary exchanges between lenders and borrowers [FIG. 1].

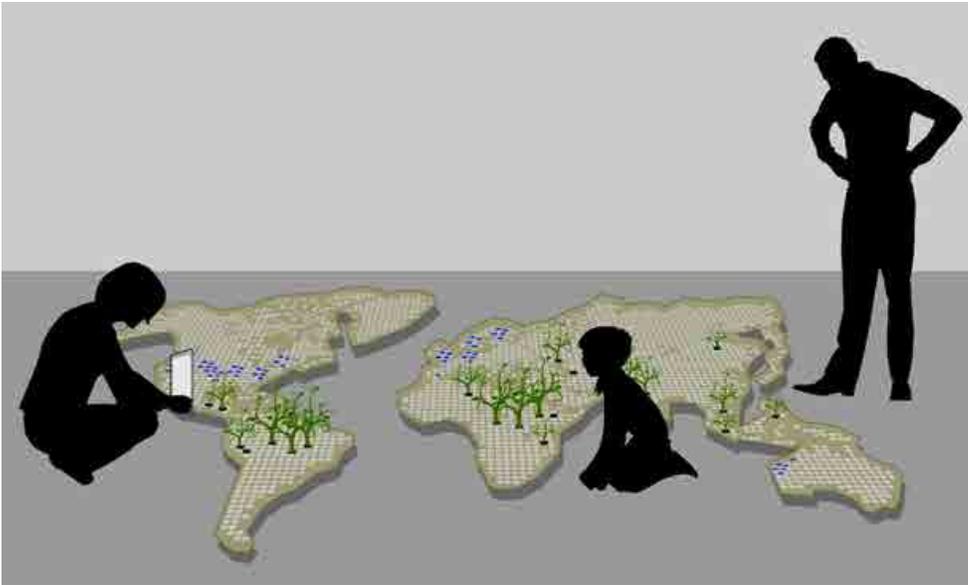


Figure 1. *Reversal of Fortune: The Garden of Virtual Kinship, prototype image*

The lifeline of the physical garden is dependent on the performance of virtual economic transactions. Each plant in the garden represents a specific borrower or “entrepreneur,” the term Kiva uses on their website. The emergence and survival of the plant-entrepreneur depends on if the loan’s funding is successful. Yet this “success” is based on a complex web of relationships that includes the borrower’s rank in popularity compared to other borrowers, status of fundraising goal and the risk level of the intermediary bank (field partner) in the borrower’s country.

Viewers engage with the physical garden installation by walking through the metaphorical waterways of the global map. The plants reside in 12” raised platform beds shaped like continents that are laid out on the floor to form the map. Within each platform “continent” is a computerized irrigation system that waters the plants on that platform. If a borrower-entrepreneur’s project gets funding on the Kiva website, that information gets sent to the computerized irrigation system and the correlating physical plant-entrepreneur gets watered.

In addition, an animated data visualization projected from the ceiling onto the top of the platforms indicates where that borrower’s lenders are located geographically. A second wall projection provides more in depth information about the borrower and their associated lenders, all taken from the Kiva website. For the borrower, a candid image of themselves in their “native” surroundings sits alongside a description narrated in the 3rd person of their entrepreneurial project goal. A listing of the fundraising amount and its status, geographic location, risk level of their intermediary local bank (Kiva field partner) as well as their country’s average annual salary is also included.

Juxtaposed to the borrower’s information in a scrolling list form, the collective pool of lenders are presented: location, occupation, how many loans they’ve funded, brief commentary on why they “donate” and a portrait of themselves (or a clip art representation). In subsequent versions of the installation, viewers will be able to use their mobile devices to access this specific borrower-lender information for a more immersive experience. QR codes and/or labels triggering augmented reality content will be located next to each plant.

### 3 The Commons: Historical Precedents

The notion of a digital commons—virtual, collective sharing of information and knowledge resources within a community which mirrors the physical resource sharing of a terrestrial commons—evolves out of the early utopian visions and desires for a non-privatized, democratic, networked global village.

An early exploration of these ideas and how they could actually be engaged both physically and virtually were investigated in the seminal telerobotic artwork entitled Telegarden created by artist and engineer Ken Goldberg [FIG. 2].



*Figure 2. The Telegarden (1995-2004, networked art installation at Ars Electronica Museum, Austria.) Co-directors: Ken Goldberg and Joseph Santarromana. Image courtesy of the artist Ken Goldberg. Photo by Robert Wedemeyer.*

The project was launched in 1995 through a web interface that enabled a global community of online users to “telematically” care for a live garden physically located at the University of Southern California. Users accessed data about the current state of the garden (i.e., water levels, sowing needs, planting) and then controlled a robotic arm to nurture it. Groundbreaking at the time, Telegarden not only underscored issues of sentience and dis/embodyment within online culture through its convergence of the biological/organic with the technological, but it also utilized participatory models of online interaction and social engagement to meet a shared goal. By collectively “investing” in the future of the garden combined with the “outsourcing” of labor

to perform tasks to maintain it, Telegarden foreshadowed new models of labor, production and dissemination that now comprise the familiar modes of crowdfunding and crowdsourcing that The Garden of Virtual Kinship investigates.

#### **4 Crowdsourced Philanthropy: Virtual Kinship**

In popular culture the terms “microfinance” and “crowdfunding” tend to suggest different types of ventures. Whereas “microfinance” has aligned itself to more of the humanitarian sector and civic engagement, “crowdfunding” has become synonymous with art, design and culturally driven initiatives, although there are starting to be more overlaps. The term hit the mainstream media radar in 2009, shortly after the 2008 economic crisis, with the advent of Kickstarter, a platform to fund primarily independent creative projects such as artist exhibits, music recordings and cottage design.

The advantages of this type of funding are that it enables anyone anywhere without a lot of capital to pursue a creative or entrepreneurial venture that would otherwise be beyond their financial means. Crowdfunding platforms have witnessed much success, especially among creative types, small businesses and grassroots organizations. Yet these platforms have also been subject to ethical critique, especially as they evolve or are co-opted by more business-savvy and established users (such as celebrities and larger cultural enterprises) who leverage them to fund projects that their corporate sponsors may find too risky.

Skeptics of crowdfunding platforms feel that they commodify social relations by requiring users to “brand” themselves and aggressively pitch their proposals through their own social networks. As artist-activist Josh MacPhee observes, such platforms can transform friendships and community building into a shopping experience (Josh MacPhee 2012).

How relationships are simulated through social media to facilitate empathy-at-a-distance is a key factor in driving participation on websites such as Kiva and is the main phenomenon that The Garden of Virtual Kinship seeks to explore. The title of the piece is derived from “virtual kinship,” a term used by scholars to describe the simulation of a relationship that emerges between the lender and borrower of an online loan (Megan Moodie 2012). This term refers to the feeling of personal connectedness between the lender and the borrower that the online portraits of impoverished individuals and communities help to create. The production of affect on websites such as [www.kiva.org](http://www.kiva.org) conceals the absence of any meaningful relationship between the lender and the borrower. Lenders rarely receive more than a one-page description of those that they are helping and they are never privy to what really happens within the transaction or after the loan’s total amount has been raised on the website.

This leads to another issue the project examines, specifically within the realm of microfinance—altruistic paternalism. The lender, in the position of privilege and power, is able to make a judgment call about what they “feel” is valuable or of merit in the borrower’s proposed project and whether or not to fund it. As noted, a loan’s success in meeting its fundraising goal greatly depends on its popularity. But what makes one loan more popular than another? Why is the 46 year old mother of six in Peru more successful at getting lenders than the 46 year old father of six in Uganda? These subjectivities play a major role in reinforcing the inequitable power dynamics the project strives to expose.

## **Conclusion**

The goal of The Garden of Virtual Kinship is to explore the contradictions inherent in this new model of humanitarian activity enabled through social media as it relates to crowdsourcing/ crowdfunding and contemporary notions of a digital commons. Anyone who has tended a garden is well aware that it is a complex dynamic system that requires both technological know-how and compassion. Similarly, these new economic models that bridge technology with human welfare are still searching for their nexus.

By making visible the relationships between human life and economic growth that are mediated by these websites, The Garden of Virtual Kinship offers both critique and possibility. It becomes evident that through these networks, individuals can achieve real material needs, feel empowered and become successful leaders in their communities. What needs to be further addressed then are the failures and how to move towards a more just and equitable result.

In returning to the article by Josh MacPhee, he concludes with a rather satirical yet sincere provocation—why not “communize” Kickstarter (Josh MacPhee 2012)? The ability for users to collectively own and reinvest in these platforms brings us closer to a true digital commons and to the ethical and grassroots value systems that initially triggered their emergence. Yes, this is a utopian idea, but isn’t the underlying function of utopia actually just a framework for ideating better solutions?

Through this initial prototype of The Garden of Virtual Kinship and subsequent versions, I hope to instigate public discussion about how continually emerging and changing philanthropic social media platforms enable economic activity and what their actual impact is on individuals and communities. This involves gaining a deeper understanding of the longstanding critique of the issue of risk within microfinance and as sociologist Ulrich Beck states, its “...radical asymmetry between those who take, define, and profit from risks and those who are their targets (Ulrich Beck 2009).” Other factors to consider include how new forms of mobile-phone based money transfer such as the M-Pesa, which are becoming more widely used in developing countries, are affecting financial circulation and further research into sentiment metrics of online lender/donor behavior patterns.

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## COUNTER NARRATIVES IN A TIME OF CRISIS

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### **Abstract**

This paper focuses on the city of Dublin, a high tech Western city which hosts the European headquarters of Google, Facebook and Twitter yet is at the epicenter of the unprecedented Irish financial collapse. As Ireland persists under a IMF/EU bailout program the obfuscated causes, extent and repercussions of the collapse have been uncovered and critiqued by a series of interconnected activist, artistic and academic media led interventions and visualizations. It is argued that these interventions have served to deflect the official narrative, and shaped public discourse by offering an alternative path to understanding the true nature of the crisis. This paper analyzes these trans disciplinary models of operating and determines that they represent novel formations for dissemination of counter-narratives which have wider applicability.

### **1 Introduction**

The complexities of the Irish financial collapse, and by extension the wider European crisis, and the structural elements which engendered this collapse are by nature abstract and difficult to access. This inaccessibility has supported the acceptance of an official narrative which obfuscates the causes and crucially fails to identify the continuing structural problems which need to be identified and remedied for a sustainable and equitable recovery. The paper identifies and discusses interventionist art projects, academic data mapping and visualization projects and activist engagements which collectively established a bedrock of critique that has, through persuasive argument and visualization of a range of data sources, set the agenda for public discourse on the nature and causes of the collapse.

The projects to be discussed including this authors NAMALand project, an augmented reality locative media mobile application which identified properties under the control of the controversial Irish Government National Assets Management Agency (NAMA). I also examine the central role of research undertaken by the The National Institute for Regional and Spatial Analysis (NIRSA) under the Direction of Rob Kitchin at the National University of Ireland at Maynooth. NIRSA produced visualizations and mappings of a range of parameters related to the property related collapse which were built on by a number of artistic and activist projects including the photographer Anthony Haughey's evocative and acclaimed Settlement series of ghost estate images and the Unlock NAMA movement which occupied key NAMA buildings. It is argued that these interconnected interventions have served to deflect the official narrative, and shaped public discourse by offering an alternative path to understanding the true nature of the crisis.

## **2 The Irish Financial Collapse**

The Irish collapse followed an unprecedented property bubble which had resulting in the Ireland of 2007 having the highest land values in Europe by a considerable margin, almost twice that of the second most expensive country and six times that of Germany (Kitchin et al., 2010). When the bubble burst it exposed a decade of malpractice in the banking sector overseen by a laissez-faire regulatory regime which was then compounded by a Government blanket bank guarantee. These banks debts turned out to be so large that they effectively bankrupted the country forcing Ireland into a EU/IMF bailout program in November 2010. The official narrative was that Ireland was the victim of international events triggered by the collapse of Lehman Brothers. As a small globalized country the country was at the mercy of these events, what could any Government do in the face of these global forces? While traditionally Ireland had been a beneficiary of globalization, multinational tech and pharmaceutical corporations are major employers and Dublin boasts the European Headquarters of Google, Facebook and Twitter, the narrative went, was the unavoidable downside, the result of a globalized market.

## **3 NAMA**

One element of the Government response to the banking crisis was the establishment of the National Assets management Agency (NAMA). NAMA was to acquire, on behalf of the Government, property loans from banks with the aim of removing them from banks' balance sheets and allow the banks to resume their functions as lending institutions (see [www.nama.ie/about-us/](http://www.nama.ie/about-us/)). NAMA spent in the region of €45 billion buying these junk property loans from banks, in the process acquiring a vast property portfolio the details of which were kept secret from the public. The NAMALand project originated from an attempt to obtain information on properties under the control of NAMA in order to build an open data application. However, NAMA was exempted from Freedom of Information requirements and no official data on NAMA properties existed in the public domain. Although NAMA was a major political issue of the day it was not possible to obtain information on the number, nature of the properties, or individuals involved which posed a major obstacle to an informed debate.

Seeking alternative information resources an activist generated source of information on NAMA properties was identified. This was a spreadsheet maintained on the anonymous website NAMA Wine Lake (NAMA Wine Lake, 2010) based on published public sources of information connecting property developers known to be in NAMA and the properties they owned. Each entry was well documented with sources in the public domain. However much of the data was locationally vague, a typical example being "properties on Mayor St", lacking specific addresses or information which could be automatically geotagged to be used in location-aware applications. NAMALand was able to refine and build on this activist data to produce a geolocated database of NAMA properties powering an AR mobile app. This database was produced through geotagging approximately 120 properties from this list in Dublin. These were largely manually located, using hand-held GPS and later with Google Street View, when it was introduced in Ireland during the research process, and confined to properties which could be located with a high degree of certainty. This data was then used to create a geotagged MySQL database, which is the data source for NAMALand.



Figure 1. NAMALand Augmented Reality App

### 3.1 The NAMALand app

NAMALand (see [conormcgarrigle.com/namaland.html](http://conormcgarrigle.com/namaland.html)) is an augmented reality application (Figure 1)

which overlays Dublin with a database driven data layer identifying properties reported to be in NAMA. The application was built in November 2010 and has been updated on a regular basis since. It employs the Layar ([layar.com](http://layar.com)) platform which provides a development environment and software platform to create augmented reality applications that run on the Layar App for IOS and Android devices. Layar provides a standardized user interface with limited options for modification and supplies a set of augmented reality (AR) methods upon which Layars can be built.

The NAMALand layar in operation takes the location of the user's phone and compares it to this database of geotagged properties reported to be in NAMA within certain user-defined ranges. An overlay of properties within range is then created which can be further interrogated for details of the developer associated with each property. To signify the location of each response the app overlays a cartoon figure of the Monopoly Man over NAMA properties on the camera-view of the user's device. It also generates a real time map of localized NAMA properties along with a list of nearby properties and their location. NAMALand thus visualizes the extent of NAMA property ownership, allows users to identify nearby properties and interrogate specific regions of the city for NAMA connections.

The project achieved notoriety in Ireland and become part of the national discourse surrounding NAMA, the financial collapse and subsequent bailout. It received a great deal of attention in the National and International media including TV news interviews for RTE, the National Broadcaster of Ireland, British Channel Four News, multiple national and international radio interviews interestingly equally distributed between arts and business programming, and wide coverage in the print media including the Irish Times and Business Week. The app has in excess of 45,000 users, even though it only operates in Dublin, and the term NAMALand itself has even entered common usage as a descriptor for the aftermath of the property market collapse.

### 3.2 Peripatetic Activism

The project was accompanied by a series of walks, informed by the mobile application, which took place in Dublin City Centre and in Tallaght, two areas characterized by a high concentration of NAMA properties. These were participatory, as with the NAMA-Rama walk in conjunction with Market Studios (Figure 2), the In These Troubled Times walk with RuaRed Arts Centre and Ireland after NAMA with The Exchange Arts Centre, and guided walks such as those for RTE News and Channel Four News TV crews. In this way the project bridged the gap between the abstract dataset hosted in an online database and the real space of the city. NAMALand is essentially a walking project, it is necessary to deploy it on the street for it to operate at all. The guided walks, through careful selection of routes, were able to maximize this impact by proceeding through areas of the highest concentration of landmark buildings and, as participatory events, functioned as walking forums, facilitating participants in discussing the issues represented by NAMA and its property portfolio.



Figure 2. Participants in the NAMARama walk through Dublin, February 12 2011.

NAMA represents a complex system of abstract financial dealings, transactions which have become so disconnected from everyday understanding but yet have significant and very real consequences. The project and its walks attempt to counter this growing abstraction of space, they operate in hybrid space, that is “a convergence of geographic space and data space” (Hemment, 2006) where the distinctions between Castell’s (2000) space of place (physical space) and the space of flows (informational space) collapses with the over-layering of context sensitive data. Whereas the narrative of NAMA is the narrative of the (now defunct) property market, international finance and IMF bailouts, NAMALand reconnects this to real spaces in order to expose their interconnectedness and real consequences.

### **3.3 Expanding NAMALand**

On one level NAMALand operated as a mobile app, a ready to hand source of information locating NAMA properties, as a myriad of other apps locate coffee shops and restaurants. However as an intervention, particularly one with political aspirations, it wasn’t sufficient to remain as a “virtual” intervention, it needed to operate in conjunction with physical actions to be effective. In this respect it was vital that the project was expanded to include real world events such as walking tours, situated public discussion forums, public speaking engagements, media coverage and individual interventions with the work itself being an amalgam of all its constituent components. These were all supported and enabled through the data layer made visible through the application of AR technology, which offered multiple points of entry and modes of engagement with the project which were not necessarily technologically dependent. At another level it acted as a catalyst, facilitating a range of conversations, debates and activities as part of a wide ranging critique of NAMA and the sequence of events which led to it.

The project crossed boundaries from art to geography, urbanism, activism, open data, economics and politics as one would expect from work which engages critically with the space of the city and international finance. As the project became known through publicity and word of mouth, the diversity of the discussions, from the Occupy Dublin camp one day to city-sponsored seminars on open data and the smart economy the next, revealed another side of the project. This was its ability to function as a conduit which reconnected NAMA with the space of the city, a connection which had been deliberately severed to preserve the idea of NAMA as a by-product of obscure international financial dealings which lay outside of Governmental control. NAMALand’s contribution was to open up previously unavailable data, and to re-connect this data with the fabric of the city itself. This served to add specificity in place of generalization, fueling debate through the provision of an infrastructure on which specific spatial critiques could be structured, supplying a point of entry hitherto unavailable.

#### 4 NIRSA and Ghost Estates

As NAMALand worked refining and augmenting activist data sources on NAMA properties The National Institute of Regional and Spatial Analysis (NIRSA) was researching the property aspects of the financial collapse. NIRSA is a research initiative between geographers and social scientists based at the National University of Ireland at Maynooth under the Directorship of Rob Kitchin. Nirsa's brief is to undertake fundamental, applied and comparative research on spatial processes and their effects on social and economic development in Ireland (see [www.nuim.ie/nirsa](http://www.nuim.ie/nirsa)). Part of the research was to quantify the problem of ghost estates in the aftermath of the collapse of the property bubble. This necessitated not only a census of the sites themselves but also defining what constituted a ghost estate, a topic of acute political sensitivity. A ghost estate was defined as a development of ten or more houses where 50% of the properties are either vacant or under-construction (Kitchin et al., 2010). 620 estates were thus identified which included 19,262 units, with 11,670 vacant and 3,823 under construction (Figure 3).



Figure 3. Map of Ghost Estates produced from NIRSA data using Google Fusion Tables.

Along with NAMA the issue of ghost estates became a critical topic in the discourse surrounding the bailout. NIRSA's research, data and visualizations served to focus attention providing a platform on which others could build. NIRSA, though primarily consisting of geographers and social scientists, engaged with the artistic community through a number of interdisciplinary seminars (see [www.nuim.ie/nirsa/](http://www.nuim.ie/nirsa/)) addressing artistic and scientific research in the field. NIRSA's Director, Rob Kitchin, was very active in promoting and sharing this research beyond traditional academic and disciplinary forums, displaying a particular interest in the relevance of artistic and activist usages of this data.

One of the more accomplished artistic expressions built on this ghost estates data was Anthony Haughey's Settlement series which photographed ghost estates throughout Ireland (Haughey, 2010). Haughey captured his ghost estates between dusk and dawn to avoid the attention of security guards, with the resulting long camera exposures images emphasizing the spectral nature of these sites and their role in the death of the Irish economy (Figure 4).



*Figure 4. Anthony Haughey. (2010). Ghost Estate County Louth from the series Settlement. The project featured alternative usage plans for these sites produced in collaboration with a number of architectural firms. These were included in physical exhibitions but were also accessible through QR codes located on the signage at the respective sites.*

Haughey's acclaimed images contributed to the debate on the fate of ghost estates, which had become emblematic of the wider crisis. This project was informed by NIRSA's research and was illustrative of the trans-disciplinary nature of many projects which sought to address the myriad problems arising from the financial collapse. I suggest that Settlement's origins in the research data obtained from NIRSA was significant as it fostered a specific data-based and locationally accurate critique rather than a metaphorical generalized critique which, while evocative, can be more easily deflected (O'Callaghan, 2010).

## 5 Unlock NAMA

In late 2011 I was in contact with individuals associated with the Dublin Occupy movement who were at the time interested in extending their campaign into occupation of specific NAMA buildings. There was a research based project which stressed the accuracy of their data. The focus of their campaign was to call for the unlocking of a public resource for community and social usage so it was imperative that their targets were correctly identified. The campaign was built on NAMAland data augmented with additional research. Their campaign resulting in a series of short lived but high profile occupations beginning in January 2012 (see <http://jrnl.ie/339068>) which highlighting the fact that many NAMA properties were vacant and decaying due to neglect, while there was a shortage of affordable space for community groups. A secondary guerrilla program of identifying NAMA properties through affixing banners to their exterior (Figure 5)



*Figure 5. Welcome to NAMALand banner being placed on a NAMA building, Dublin 2012. was undertaken which once more drew attention to the neglect of these properties, calling for them to be made available to social and community groups.*

## 6 Conclusions

This paper discusses a disparate group of artistic, activist and academic research projects which address related aspects of the aftermath of the Irish financial collapse and bailout of 2010. Connections are drawn between the projects through their generation of a locationally specific data-based critique based on a sharing of data and a cross fertilization of ideas. Though the methods employed differed, the projects shared similar objectives. They sought to construct a counter narrative in opposition to received notions of the financial crisis as by-product of obscure international financial deals enacted in the space of flows which are beyond the control and remit of national Governments. The strategies employed were informational, revealing and making legible hidden and obfuscated data, but also contained specific calls for action seeking to effect change rather than assuming a purely oppositional stance.

NAMALand's publicity was instrumental in focusing public attention on the issue of NAMA properties but also included a call for full disclosure of NAMA data and for vacant properties to be made available for social and community use, a message that was echoed by Unlock NAMA. While this has not being fully achieved progress has been made. NAMA has been forced to release a full list of properties under their control but this data continues to be locationally vague and in inaccessible formats, but pressure continues to mount to address these issues. Dublin City Council in 2012 announced a Vacant Premises Initiative for creative cultural and craft usage which would grant leases on vacant premises for 6 month periods, this initiative followed negotiations with NAMA and has resulted in NAMA properties being made available for community use (see <http://www.dublincity.ie/RecreationandCulture/ArtsOffice/Vacantspaces/Pages/VacantSpacesInitiative.aspx>). While it is difficult to accurately assess influence and assign credit for these shifts there is no doubt that these projects played a role in shifting the agenda. Similarly the Ghost Estates work carried out by NIRSA which informed the artworks of Anthony Haughey has served to highlight the issue and to place it in the public eye where it has stayed.

This is not to say that these problems have been solved, and it is important not to underestimate the extent and intractability of these problems, but they have succeeded in shifted the narrative. This has happened through explicating obscure and technical issues by situating the issues, and through connecting them to real locations, added specificity in place of generalization and abstraction. This has fueling debate through the provision of an infrastructure on which specific spatial critiques could be structured, supplying a point of entry hitherto unavailable. I suggest that these examples represent novel formations for dissemination of counter-narratives which have wider applicability in a time of crisis.

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## PARATACTIC COMMONS: REAPPROPRIATING COMMONS BY NEW MEDIA

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### **Abstract**

Can we open up different definitions of commons? Are there different ways of understanding and discussing commons through artistic and (h)activist practices? What can we learn from the various uses of free software's, copy-left movements, peer-2-peer and do-it-yourself systems, the logic of open source, and creative commons? With the aim of conceptualizing a contemporaneous version of commons, paratactic commons, the paper will focus on two best practices such as 'The Hurricane Hackers' of MIT Media Lab' and 'Mapping The Commons of Istanbul and Athens' project of Pablo de Soto and Daphne Dragona. By making the hidden data sensible and recognizable, while these specific practices of paratactic commons work within the spatial and temporal units of cities, they also operate and create the media cities.

### **Introduction**

Commons can be defined by being open to share, without becoming private and accessible for a certain individual self, group or institution. Although the term commons has long been associated with the enclosure movement from the 15th to 19th centuries in which the landed gentry conspired with Parliament to privatize forests and pastures that commoners collectively relied upon for subsistence (Williams 1973), today, firstly commons has gained a different meaning for managing shared resources especially after the rising use of new media technologies in 1990s. And secondly commons became immanent alternative concepts and tactics against the hegemony of dominant power, for a more democratic, tolerant, and pluralist society, which allow more active participation and heterogeneous collectivities. For example (Ostrom 1990) demonstrated how communities could sustainably manage fisheries, irrigation waters, wildlife and other natural resources without the management of a central power, without over-exploiting them, and without causing a tragedy via legitimate means.

In Istanbul, like in other megalopolises, the discussions around commons have recently been relevant especially with the increasing pressure of privatization and control of governments along with market actors over the shared assets of society. The market and the state tragically have become a decadent, self-interested duopoly committed to fostering privatization and commoditization of almost everything – from land and water to the human genome and nano-matter. The resulting market enclosures amount to a radical dispossession and disenfranchisement of commoners – and an anti-democratic, anti-social provocation that cannot continue indefinitely.

The tendency of nation-states to impose their ideological agendas onto citizens, and the conflicts and collaborations of a global consumerist economy that urge the rapid privatization of public goods have all taken a toll on the common values. Commons that have been appropriated and captured both by the state and the market actors range from ecological unbalances, which result from the privatization of natural resources, to the 'de facto' privatization of judicial systems, which has led to the degradation of a justice that is common to all. Meanwhile, the ever-popularizing new media, beginning with the Internet itself as a common resource, has been an inspiration in revitalizing the idea of commons. The capacities offered by new media technologies have helped to better understand that information –access- is a 'common' as well as a human right.

With the increasing adoption and dissemination of new media technologies, bottom-up forms of social cooperation and collaboration are becoming more powerful, quasi-sovereign forces in societies today. By their self-directed, self-organized and open dynamics, digital commons offer wider freedoms opposed to state and market actors that attempt to control everything. Emerging forms of commoners as well as the sorts of social practices, community relationships and personal identities that they cultivate are challenging many existing institutions of power, such as intellectual property law and conventional business models.

In this paper, we aim to discuss 'how' the operational and the organizational principles of new media technologies are used for commons. We conceptualize Paratactic Commons, as a result of our recent research that included an exhibition and a conference in which various interested actors shared and discussed their views and experiences in November 2012 in Istanbul. Paratactic, which is a concept adopted from linguistics, introduces a provisional side-by-side tactical actions of heterogeneous single units. As paratactic belongs to the middle-voice of a pre-modern era in which subject has not been formulated yet, it proposes the juxtaposition of individuals, organizations and sources without the use of a single coordinating and subordinating conjunction. Heterogeneous fragments are connected tactically with no particular order and hierarchy.

Paratactic Commons proposes not to transfer the responsibility (of creating meanings, works, affects for commons) to another, neither to a meta-discourse (where The Commons itself becomes one) nor to authorities such as the government, the state, the political leader or a CEO, but to take the responsibility and act with whatever the capabilities and competences that are possessed within the current circumstances. For this reason, paratactic commons is strongly related with decision-making process(ing). Instead of drowning in the passive progressive voice in which many established non-government organizations implicitly become the subsidiary reproducers of hegemony, paratactic commons are innovative and minor practices that use potential resources and users to realize other possibilities within current conditions. What we experience with paratactic commons is the emergence of a self-organized, tactical, volatile and open collective movements based on collaboration by peer-to-peer production.

More specifically, Paratactic Commons can be a form of Crisis Commons, a global network of user-generated barcamp and hackathon events, such as conferences, workshops and artistic projects that reconcile the interested actors along with volunteer techies who specialize in crisis-response innovation. Nevertheless what considered, as 'crisis' by users is somewhat diverse. It can range from natural disasters to urban catastrophes that are also linked to political economic and cultural crisis situations. For example, after Hurricane Sandy in the US Hurricane Haiti earthquake

in 2009, thousands of volunteers stepped up to deal with the humanitarian crisis by building Web-based translation tools, people finders and maps showing routes to empty hospital beds. Having aesthetic and economic concerns about a cultural crisis (Schultz 2013), who developed an experimental business model as an artistic project in which the availability of downloads is correlated to vinyl sales, redesign market perception and resolve market pressures with market incompatibilities. The outcome of this paratactic commons act will be the residue of objects that takes many forms, from records, downloads, and checks, to transactions, experiences and perceptions that would mark a movement generating from ideas, and not the other way from objects to ideas. Schultz (2013) emphasizes that the subversive pivot between the two is based on how the participation of the audience and direct points of contact with music is curated. In a similar fashion, focusing on the crisis of copyright, (Delaney 2013) proposes political remix video, a genre of filmmaking that operates where the culture of cut, copy and paste manipulation goes unquestioned by the remixer, as a sort of paratactic commons. By detouring cultural artifacts such as films, television programs and music videos the remixer is violating copyright law in the acquisition of such content, and is in additional violation by manipulating these images for further distribution. In 'The Non-Space of Money or The Pseudo-Common Oracle of Risk Production', (Nestler 2013) focuses on the anarchic aspect of financial derivatives as paratactic commons and critically engages with the practice of rationalizing uncertainty and querying the unknown via financial tools. Furthering these examples, we want to concentrate on specific cases for better understanding and manifesting the qualities of paratactic commons.

### **Hacking The Commons: Hurricane Hackers**

A 2012 incident of paratactic commons is Hurricane Hackers; a group of volunteer hackers concentrated in MIT's Media Lab arose in response to Hurricane Sandy in the US to provide network-coordinated aid by increasing civic participation to those who have effected by the storm. Hurricane Hackers' aid was concentrated on tracking, collecting, categorizing, analyzing, translating and sharing data that were free-floating in the virtual space. These data-catchers and data-translators sometimes used common collaborative documents such as Google.doc to increase the participation of peers and invite citizens to use cell phone cameras, motion sensors, GPS and other electronic systems to gather and aggregate large amounts of data. In contrast to depletable commons of nature, such as forests, fisheries and irrigation waters, paratactic commons can be generative as digital resources can be copied and shared at virtually no incremental cost. As they are offering less formal management and usage protocols, they can propagate and grow in value with the participation of others provisionally. Paratactic commons are collaborative and participatory mechanisms that are nonproprietary. "Sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other" becomes one of the cruxes of paratactic commons (Benkler 2006).

By checking DNS servers, Hurricane Hackers accessed the data of power availability in different locations and communize data by making it useful and practical information. They tracked the word 'blanket' and matched those who have them with those who need them. Creating a fundraising application, they aimed to develop a system that can be deployed in under 2 hours that could accept and deliver donations to recipients and also securely thank the donator. What we are seeing here is the emergence of a temporal and decentralized managerial structure for coordination. In paratactic commons it's not only all about relations, but also transactions. However, it should be noted that paratactic commons is a way of turning the tide of the market/

state by controlling alternative vehicles of value-creation. Operating as a crowd-sourcing and participatory (Figure 1) sensing project, Hurricane Hackers created ways for uploading names, images and testimonials of people who have lost their lives in the storm. Since it is an initiative under MIT Media Lab, they become a strong legitimizing actor for the institution's credibility and promotion since they realize public services and decrease the costs of governments.



Figure 1. Hurricane Hackers hackathon sign

### Mapping The Commons: Hackitectura.net

Property, privatization and government control are not common matters to be raised merely in times of crisis. They are involved in an ongoing process and an ongoing effort to keep commonwealth intact. A group called, Hactitectura.net developed an ongoing project with this critical perspective. They raised some questions as a start: "Can the commons be mapped? Which is the new common wealth of the contemporary metropolis and how can it be located? What are the advantages and the risks of such a cartography in times of crisis?" These questions and ideas were formed, conceptualized and supervised in order to offer a form of collective study, a contemporary reading and an online mapping tool for the cities and their unique dynamics. The effort to produce a short video of various urban commons in crisis addressed the important role of moving images in contemporary political language. Two groups of 20-25 architects, activists, artists, filmmakers and social scientists worked for more than a week in a city respectively for generating collaborative mapping strategies and audiovisual languages, using open source software and participatory wiki-mapping tools. The final production featured an interactive online video-cartography complemented by secondary databases and analogue-paper productions. The

potentialities and capabilities of single units were collected temporarily for making invisible crises situations seen, heard and shared. In this way, by making minor crises events that are dispersed in the megalopolis and caused by legitimate economic and political actors would also be influential actors in democratic decision making mechanisms.

Athens was mapped during a time of turmoil, when neo-liberal capitalism had started showing its demise as a system. People were extremely politically active in a climate when there was still a lot of optimism for resistance. On the other hand Istanbul was mapped during a time that an economic upheaval was taking place, huge investments and architectural projects were being designed around the city. At a time when Istanbul is being transformed radically with large-scale privatizations and constructions due to increasing pressures of neo-liberal politics, the group reclaimed heterogeneous commons in crisis in the city, such as open spaces, the right to inhabit in the city, the right to be informed of the governing and rebuilding of the urban spaces and the freedom of expression in these processes, communication platforms, and nature.

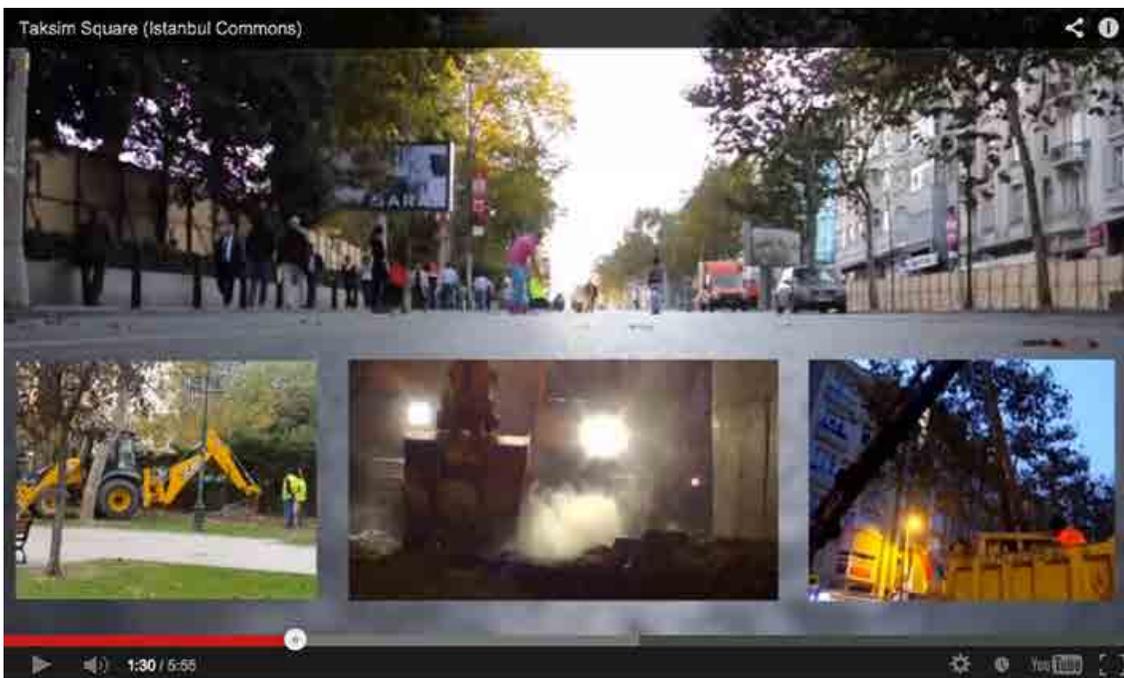


Figure 2. Taksim Square, video excerpt.

Paratactic commons is a mode of incarnation of the multitude. Since the commons makes the multitude available as the foundational political subject, in this proprietary world, the commons has an ethical resonance retained as a residue of solidarity and eco-consciousness. With this regard, it is very interesting that memory is considered as a shared space and time for those who have differences among each other that can connect and participate in Paratactic Commons. Destruction and reconstruction of the common sites of collective memory is linked to the sovereignty of the state and market actors that speak for the commons. For this reason, paratactic commons is generating immaterial labor, the labor that produces the informational and cultural content of the commodity (Lazzarato, 1996) in many ways. For example in Istanbul, Taksim Gezi Park is one of these common sites of collective memory, where the former barrack building on site is planned to be re-built from scratch in order to house privately controlled cultural and

commercial activities (Figure 2). Taksim Square is now a construction site since November 2012 to be transformed into a large empty space devoid of public density. While in transformation, common memory of the citizens for these places is permanently destructed, erased and revealed a crisis situation that is not considered as 'crisis' by political and market actors as their acts found the legitimate basis in law. Where for Locke and Hobbes a barbaric and violent commons preceded the enclosures that established real and rightful proprietary relations, for Hardt and Negri it is the post-natural concept of private property that is in danger of becoming "ever more detached from reality" (Hardt and Negri 2000).

In this context, as an instant intervention network practice, Mapping the Commons Workshop in Istanbul played an intermediary role in understanding and revealing the conflicts in relation to commons, raise discussions around the concept of commons, and most importantly be a part of the action in Istanbul to create paratactic commons, and furthermore map through videos these historical moments when commons are actualized. For this, the workshop initially took place in the street, through, for example, interviewing and filming in Fener-Balat-Ayvansaray, where a common discussion platform was successfully created against the new law of transformation of urban space, in Taksim Square, filming, discussing, and occupying of the square for common use against the authoritative projects, in Tarlabaşı, participating a Kurdish street wedding and a kitchen for the support of immigrants, and in Istanbul Technical University, participating and interviewing at a demonstration to claim communication space for employment security of academic researchers. All data were collected from various crisis situations within the city's everyday life, translated as practical information for democratic participation, shared online as an immediate political and a cultural reaction and intervention.

## **Conclusion**

Paratactic Commons constitutes itself in forms that are immediately collective in the form of productive and innovative units of networks and flows for specific ad hoc projects. Precariousness, hyper-manipulation, swarming and self-organization are the most obvious characteristics of paratactic commons, organized by metropolitan immaterial labor that manage and produce non-professional capacities for the sake of commons. Commons are folded in paratactic commons because paratactic commons are volatile peer-to-peer actions and organizations that neither state nor market actors could and would form. Folding of the operational and the organizational logic of new media technologies that create pluralities of social and political actions is one of the key features of paratactic commons.

As "The role of immaterial labor is to promote continual innovation in the forms and conditions of communication (and thus in work and consumption), paratactic commons transforms the user by adding values (from knowledge to relations) and generates new and dynamic social interactions of innovation, production, and consumption for the sake of commons. Forming and generating connections, paratactic commons has value in itself but most importantly paratactic commons fosters other connections for commons, which becomes an augmented value perhaps.

Paratactic commons represent a new kind of social/biological metabolism for creating law as well because they have their own internal systems for managing their affairs and for interacting with their environment. They can renovate themselves and define their own persistent identity. Performing small tasks for achieving big goals through synergistic communication, they have a sovereignty of moral purpose and action that competes with functions historically performed by markets and government. Paratactic commons suggests an active positioning and a political stand.

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## MODELING MEDIATED URBAN SPACE THROUGH GEO LOCATED SOCIAL MICROBLOGGING

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### **Abstract**

This paper explores the hybrid nature of mediated urban space in the contemporary city, consisting of architectural spaces interlinked with the digital; situated and networked. We suggest an alternative way of looking into the city, using digitally augmented methods beyond the traditionally established ones in urban design and spatial analysis. Taking the physical space as a starting point, we apply an eco-systemic model to investigate mediated urban forces in the city of London. We identify the implications for the city through mapping, visualization and analysis of geo-located social micro blogging in the form of Twitter data.

The discussion of this project is mainly concentrated on the results of time based patterns on geo-located Twitter flows and urban conditions, outlining initial observations about the city and its digital apparatus. By exploring how technology mediates sociality through Twitter channels and the creation of potentially new social representation forms, the project outlines the influence of those mechanisms on social, cultural and political life of cities.

### **1 Introduction**

The globalized world is experiencing a paradigm shift in the socio-political spectrum. New technologies and social media materialize the inexorable and rapid flow of information throughout the world. Happenings like the Arab Spring in Northern African countries as well as the Occupy Movement in western metropolis' show how these new information platforms interlink and connect our world. They all became feasible through the constant flow of information through social networking media.

From global to city scale, new media and ubiquitous computing play also a significant role in today's urban environment. The city generates increasing amounts of data on various platforms including digital and physical, mobile and social, via data sources such as Twitter, Google Maps and Facebook. Technological innovations form a digital layer over the city's physical topography, containing rich data-sets for urban social life correlating the inhabitants' behavior to the physical

space. In this respect, we need to understand how pervasive technologies interrelate and interweave with the built environment.

In an urban environment, augmented by pervasive computing systems, the interaction space depends on the characteristics of the technologies, the architecture in which they are embedded or through which they move, and the particular events in which people are engaged (Fatah gen. Schieck et al, 2011). Although, it's well understood that the architectural spatial configuration gives rise to movement and encounter patterns directly impacting social life (Hillier and Hanson, 1984), there is a lack of understanding of how the contemporary city is impacted by the advent of mobile and pervasive technologies. To comprehend the augmented urban and digital landscape of a city, we need to expand and adapt our understanding and practice of urban design by looking at the urban environment as an integrated system mediating both the built environment and pervasive systems (Fatah gen Schieck et al, 2008).

With the advent of pervasive technologies a dialogue and a symbiotic relationship is being formed through digital mediums embedded within public space. The progression of modern mobile technologies such as smart phones, encourage pervasive devices, not just portable but personal into our everyday lives, give place for a new type of interaction (Fatah gen Schieck et al, 2011). Computers are no longer just objects, but consist of situations (McCullough, 2004) - in this respect location increasingly matters (Gordon and de Souza e Silva, 2011).

To give people easy access to information received from the generated data in a more understandable way, visualizations are a very common way to communicate relationships. The Center for Advanced Spatial Analysis (CASA) at UCL or MIT's SENSEable City Lab, use different techniques and visualization-methods, in order to make relations of data visible and clearly understandable. Calabrese and Ratti use in their project "Real-time Rome" (Calabrese and Ratti, 2006) a combination of data provided, from multiple sources of the local cell phone provider for Rome, and the GPS locations of local taxis and cabs to plot mobility.

In the research reported in this paper we map, visualize and examine interaction spaces generated by mobile digital devices carried by people in the cityscape. We focus on technologically mediated social interactions within public space, when Social network platforms like "Twitter" are used.

### **1.1 Measuring A-spatiality**

Sharing thoughts, opinions, news and information on actual happenings, is a part of human nature. In that sense, there has always been an a-spatiality, an un-measurable spatial impact of events and social interaction within the urban space. The introduction of digital technologies in combination with location based social media offers the ability to measure the a-spatial social tendencies of the community in relation to location.

Common data visualization is being used in relation to urban space – there is a strong affinity to the usage of location, in terms of distance, proximity and time. However, current approaches lack in-depth research that look into the content of the messages send, relating to the physical environment, which would offer insight to the a-spatial properties.

Following, the description and methodology of this project is unveiled, in which the visualization and mapping of time based activities in the city of London take place. The main focus of this exercise is the definition of geo-located sensitive word search that explores the relationship between the content of tweets, the behaviors and interactions of individuals, afforded by the events taking place in public space.

## 2 Methodology: data collection and visualization

The research relies on a time-based data package, received from the Center for Advanced Spatial Analysis at UCL containing tweet information for the duration over a 7-day week period in spring 2010.

### 2.1 Input

The data package [.json – file type] contains >94.000 tweets with:

- geo located in the metropolitan area of London
- time frame: 28.04.2010 – 04.05.2010

Tweet Structure / Information available from Dataset:

ID, Twitter-post, Twitter ID, date, name, link, page, Twitter geo-location, language, profile, Google-

```
393466,"Just confirmed oral sex is not biblically wrong. @kinkyshankly is a legend.",  
"13195121602" ,"2010-05-01 15:55:40","Demoooo (Ademola Adewole)",  
http://twitter.com/Demoooo/statuses/ 13195121602  
,"http://twitter.com/Demoooo","" ,"en",  
"http://a1.twimg.com/profile_images/858866392/dagrin_normal.jpg", "ÜT:51.608482,  
-0.144936", "Just confirmed oral sex is not biblically wrong. @kinkyshankly is a  
legend.", "web", 51.608482 -0.144936"
```

location, content, source, parsed geo-locations.

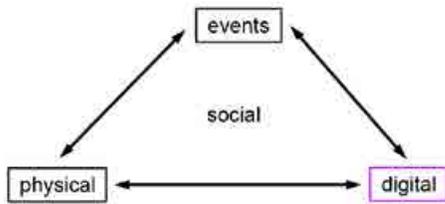
Figure 1. Tweet Content Example

### 2.2 Investigating the relationship from physical to digital / spatial to a-spatial

To go beyond general time-space research and for further investigations on physical-digital relations, an additional layer had to be installed, representing the physical environment in opposition to the Twitter dataset. An event always has a physical relation to the built environment and time - it happens in a real space over a certain "defined" period of time. Different events attract different peer groups and contain different time/space schemes, regarding the period and opening hours, which follows a top-down approach. Thirty events, happening within the given timeframe and based in the metropolitan area of London, have been selected and categorized in five sub-groups, relying on event information – including football, theatre, concerts, exhibitions and festivals.

The digital layer of the Twitter dataset and the physical layer of events form the basis for further development. Both share time/space information, in terms of geographical location, opening hours and tweet times.

relationship digital / physical  
social extension rather than separation



data preparation  
physical / digital input

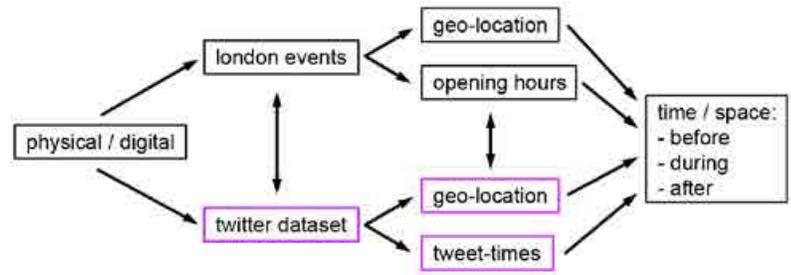


Figure 2. Relationship between digital/physical

Figure 3. Data preparation for comparison of digital/physical data

### 2.3 Introducing filters

In order to compare the digital with the physical layer, it was necessary to develop a method that investigates similarities in time/space and the tweet content level. For further development – which can be compared to a filtering process – different kinds of selectors (filters) have been introduced, depending on the investigation stage.

challenges  
xxxx

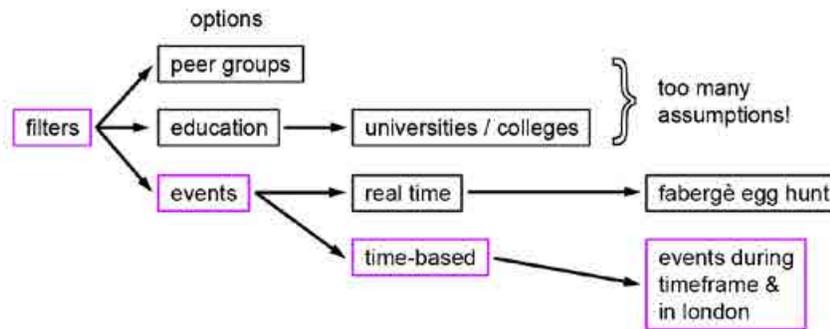


Figure 4. Filter Development, introducing events with geo-location and opening-hours as first Filter-Set

## 2.4 Visualization interface

Below we illustrate the visualization interface:

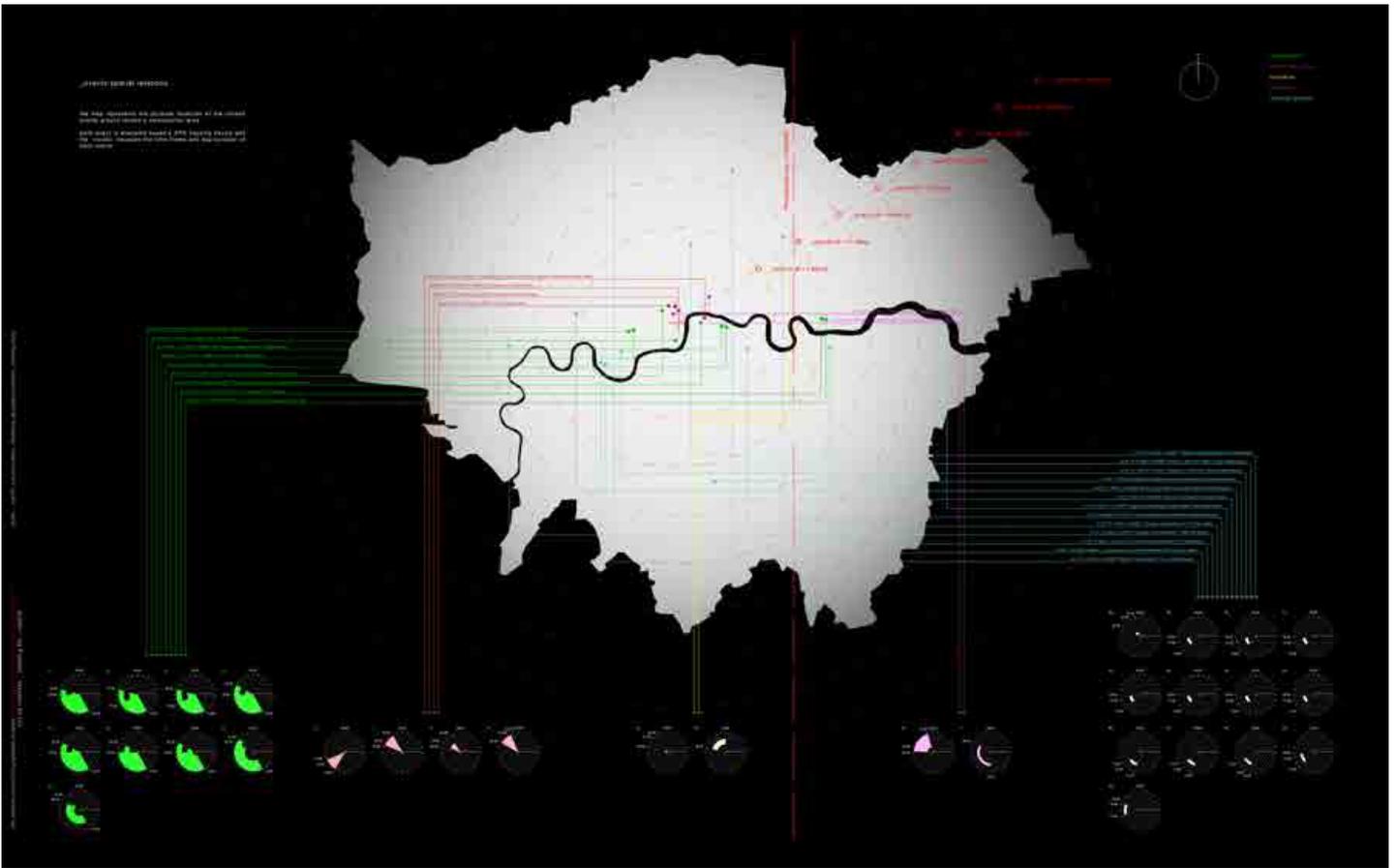


Figure 5. Showing events during the investigated timeframe within the metropolitan area of London, including opening hours and geo-location

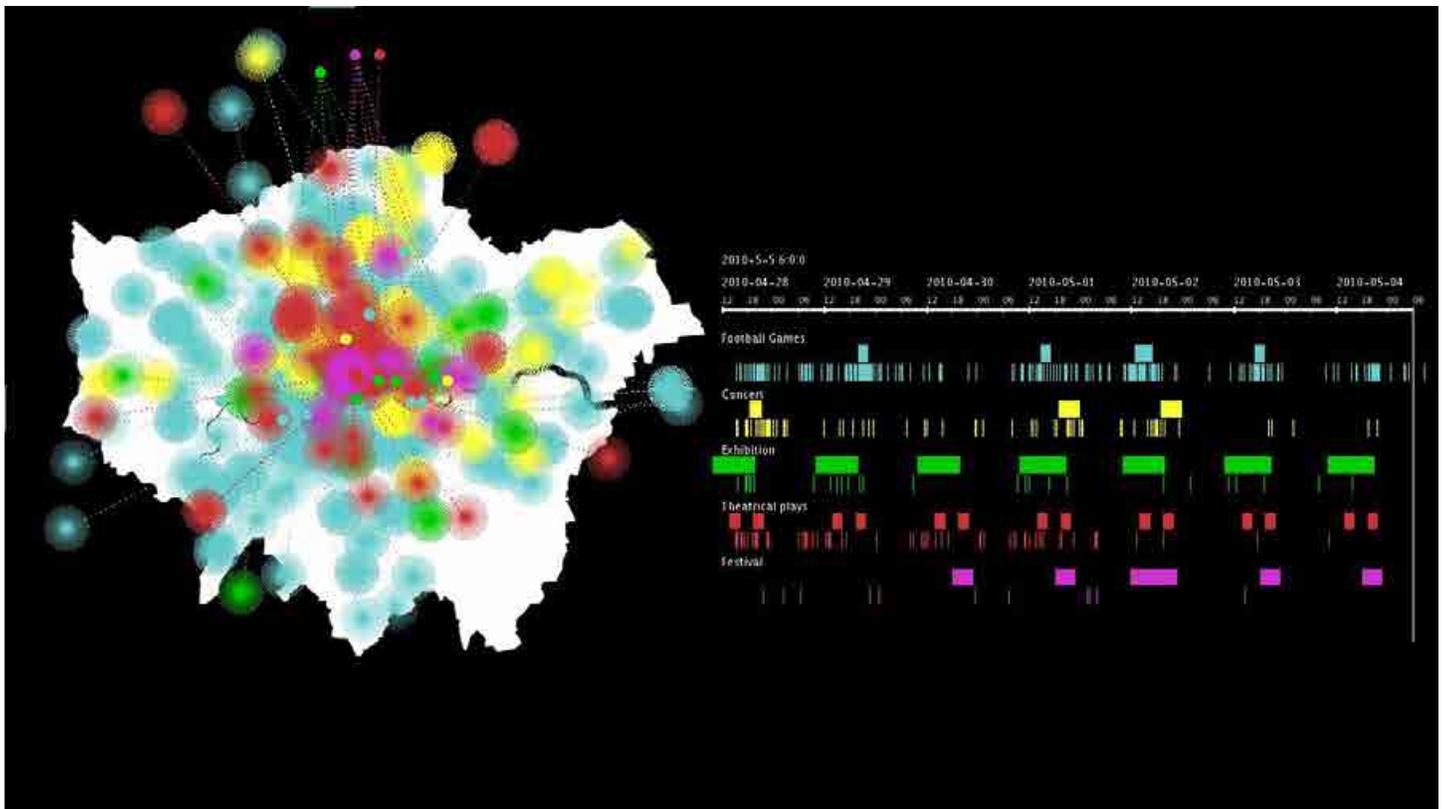


Figure 6. Visualization of Twitter activities in relation to the events: Map, left side, showing geo-located tweet activity by fading dots within London. Right side, the tweet activity is shown along a timeline, containing exact opening hours of the events.

### 3 Data Analysis and Discussion

#### 3.1 Filter Development

##### Step 1 – based on time/date and location

As a first step, the received Twitter dataset gets visualized based on geo-location and time/date – information acting as filters. There is no difference to existing visualizations dealing with the same topic ('Twitter vs. Flickr' Eric Fisher, 'GoodMorning' blprnt.blg) The outcome shows every one of the >94.000 tweets, contained in the dataset, categorized and colored. They appear and fade on the map at the exact time and date shown on the timeline, on the exact geo-location within London. As a landmark and orientation-point the river Thames is included on the map. There is no further research of the tweet content relationships to a physical component at this point.

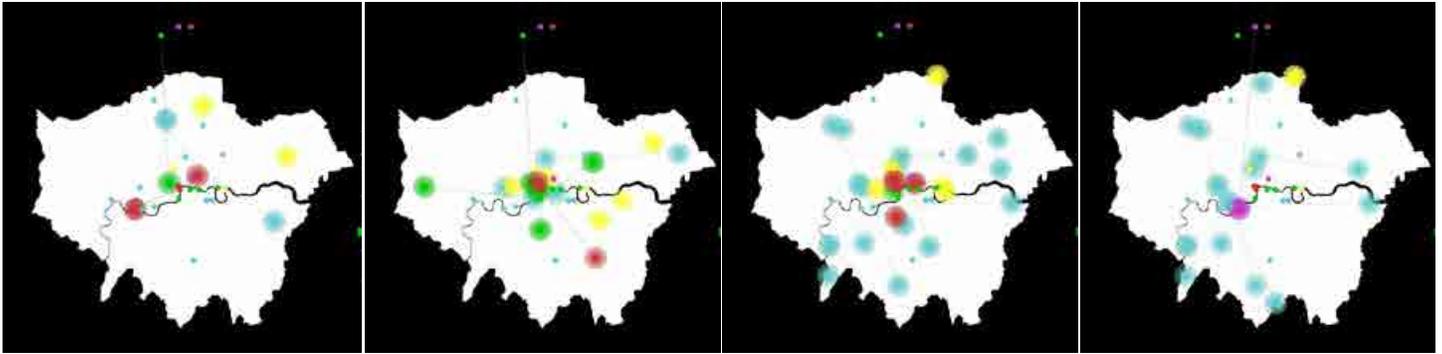
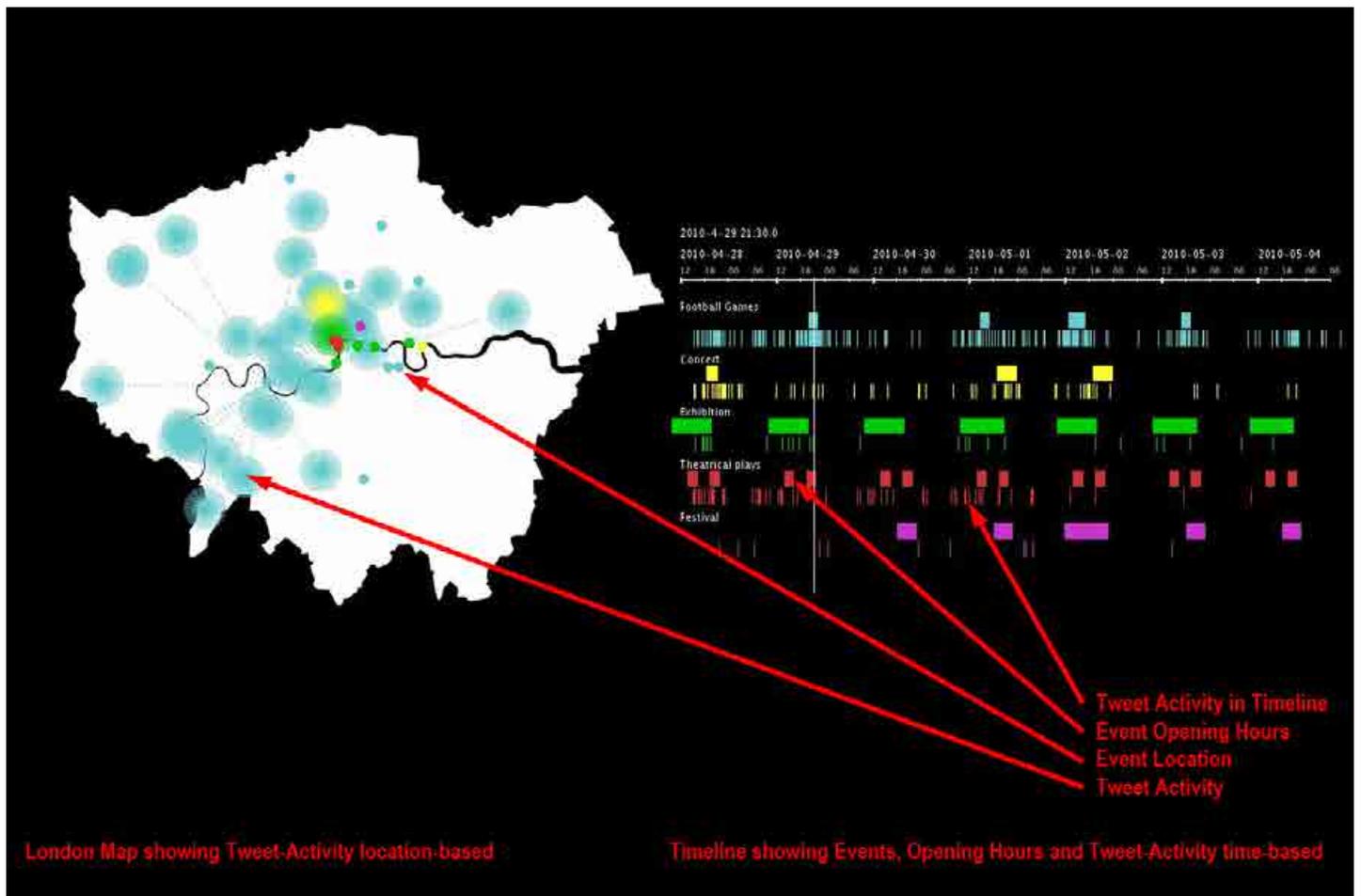


Figure 7 (Above). The map of London showing the river Thames. Step 1 – Sequence showing every tweet categorized per hour: blue – football games; yellow – concerts; green – exhibitions; red – theatrical plays; magenta – festivals

Figure 8 (Below). All twitter activities of the whole week superimposed on the map. Weekly tweet-activity: colour indicate: blue – football games; yellow – concerts; green – exhibitions; red – theatrical plays; magenta – festivals



Step 2 – installment of additional filters on tweet content information

To find additional information that can be used to investigate space/time relations, the research focuses on tweet content in relation to the ongoing events. The filter uses sensitive words, as event names and the event categorization, establishing a link between the tweets and the events. Every one of the five categories is visualized separately to give a detailed insight of the spatial and a-spatial parameter. The outcome is a representation of tweets related to events separately, defined by their categorization. A line links the tweets and the related event. The visualization patterns demonstrate the relations among tweet times and spreading, compared to the event and its related audience. A significant alteration is visible among the one-off events, like concerts and weekly events, like football; presumably, something dialing mostly with locality and the repetition of the event. Those having closer connection to the city, develop a stronger relationship with the local audience. Football supporters for example, conceive the game as part of their everyday life, not just the match day, creating the sense of large a-spatial effect.

*Figure 9. Step 2 – Sequences showing event categories individually per hour during the timeframe (from top to bottom): concerts, exhibitions, festivals, football games, theatrical plays*



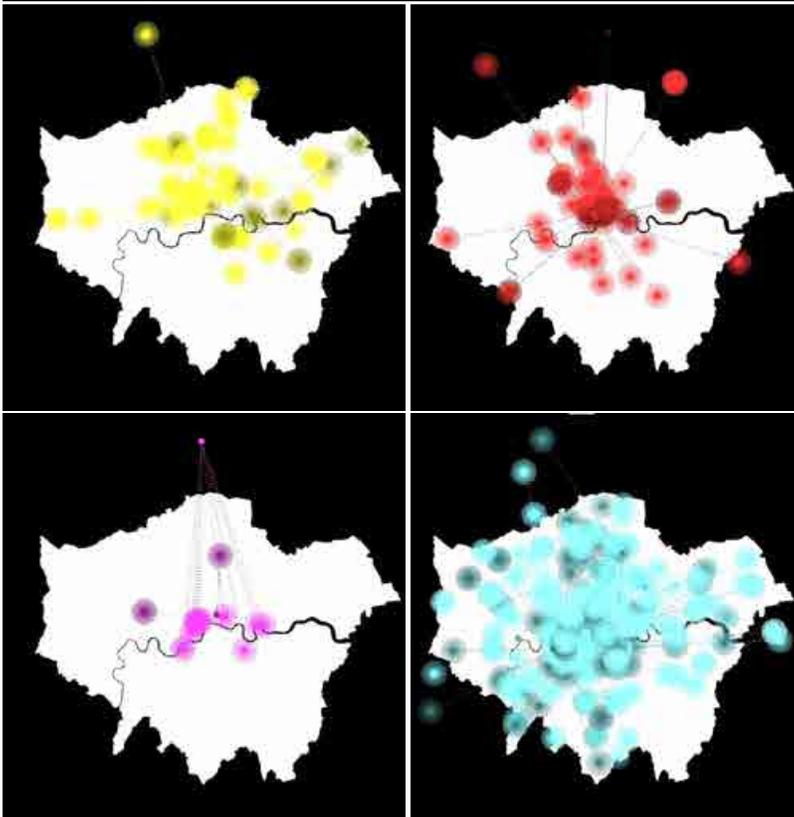
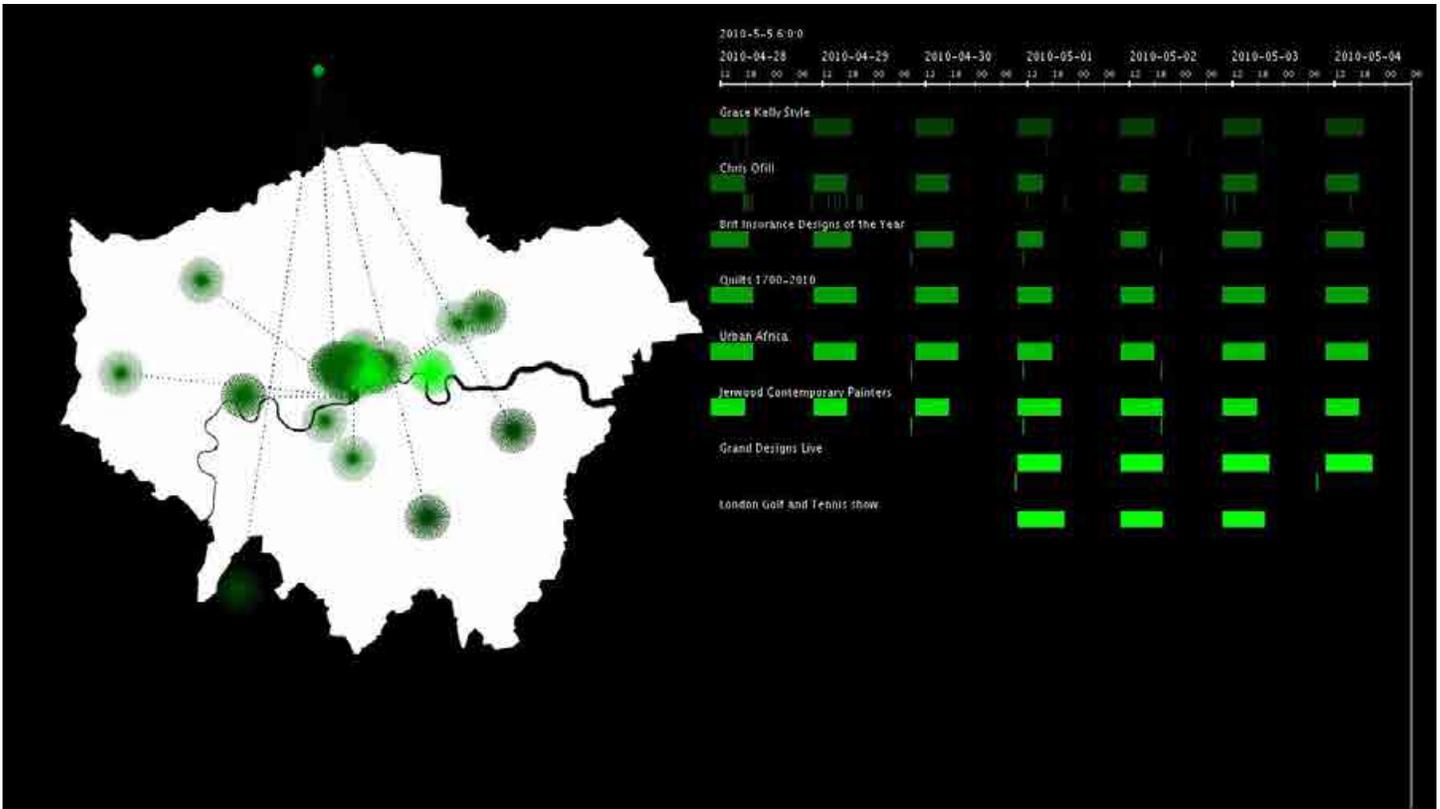


Figure 10. Superimposed image of all tweet-activity for categories individually over the whole week. From top: exhibitions (green), concerts (yellow), theatrical plays (red), festivals (magenta), football games (blue)

Step 3 – additional filter, selecting tweets only about the event itself

Processing furthermore, a differentiation was necessary in terms of outputs, resulting to a minimized amount of events; three football games and one concert.

A closer look at the outcome of step 2 makes visible that there is no differentiation between the tweet and the selected topic (sensitive word), revealing difficulties on the word-tracking dependence on event's name. That resulted to a blurred output, giving a false image of the generated outcome. For example the word "Hair", referring to an event, gave back different types of tweets results, not all of them related to the type or the nature of the event. In other cases, like "Arsenal", the delivered output was more precise.

Base on those facts and to investigate in more detail the relations between the physical event and the tweet, a manual selection of the messages was necessary. Only tweets related to the events were selected and shown in final the visualization. The outcome of stage 3 shows a precise visualization of tweets traffic for the four chosen events (figure 13) in connection to space and time. The emerging patterns unveil a representation of peer group dependence on tweet behavior, related to the location and time of the event.

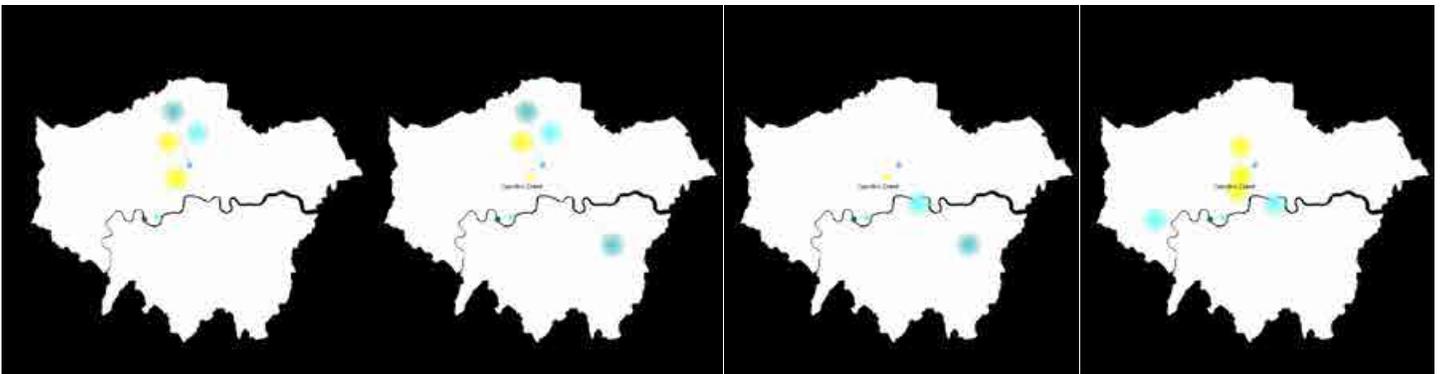


Figure 11. A sequence showing selected events of the categories: concerts (yellow) and football games (blue)

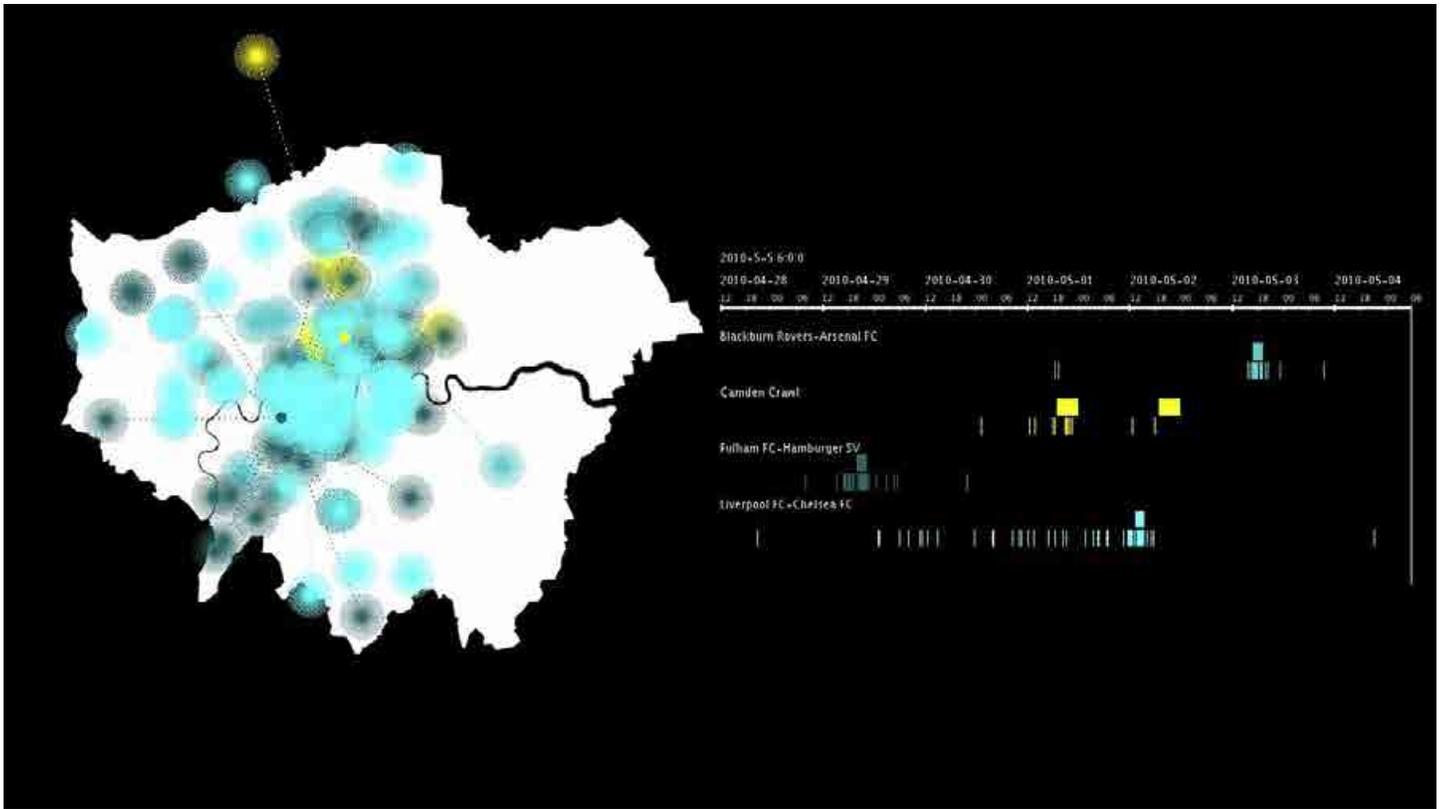


Figure 12. Superimposed image of weekly tweet-activity for the events:  
 Blackburn Rovers – Arsenal FC  
 Camden Crawl  
 Fulham FC – Hamburger SV  
 Liverpool FC – Chelsea FC

### 3.2 Focus on tweet time in relation to the event: before – during – after

In this stage, the research focuses on the tweet's temporal properties in relation to the event and the given time frame over 7 days. The visualization on the left shows the tweet duration over the whole week and gives output for the period people are talking about a certain event. Depending on the color code shown under the map, tweets appear darker when sent earlier and brighter when sent later during the week. It is difficult to differentiate in this visualization if a tweet was sent before, during or after the event. Further investigations in terms of tweet time, divide the sent messages in three sub-groups depending on being sent before, during or after the event, is shown on the right side. The color code marks tweets sent before as yellow, during as red and after in blue.

The output of the research shows that Twitter is mostly used before an event and barely afterwards. Therefore it can be assumed that anticipation is a major factor in a Tweeter's behavior. On the other hand, sharing experiences after an event doesn't generate a lot of tweet traffic, as shown at the graphs. Figure 15 below shows tweets for the selected four events, in relation to the time.

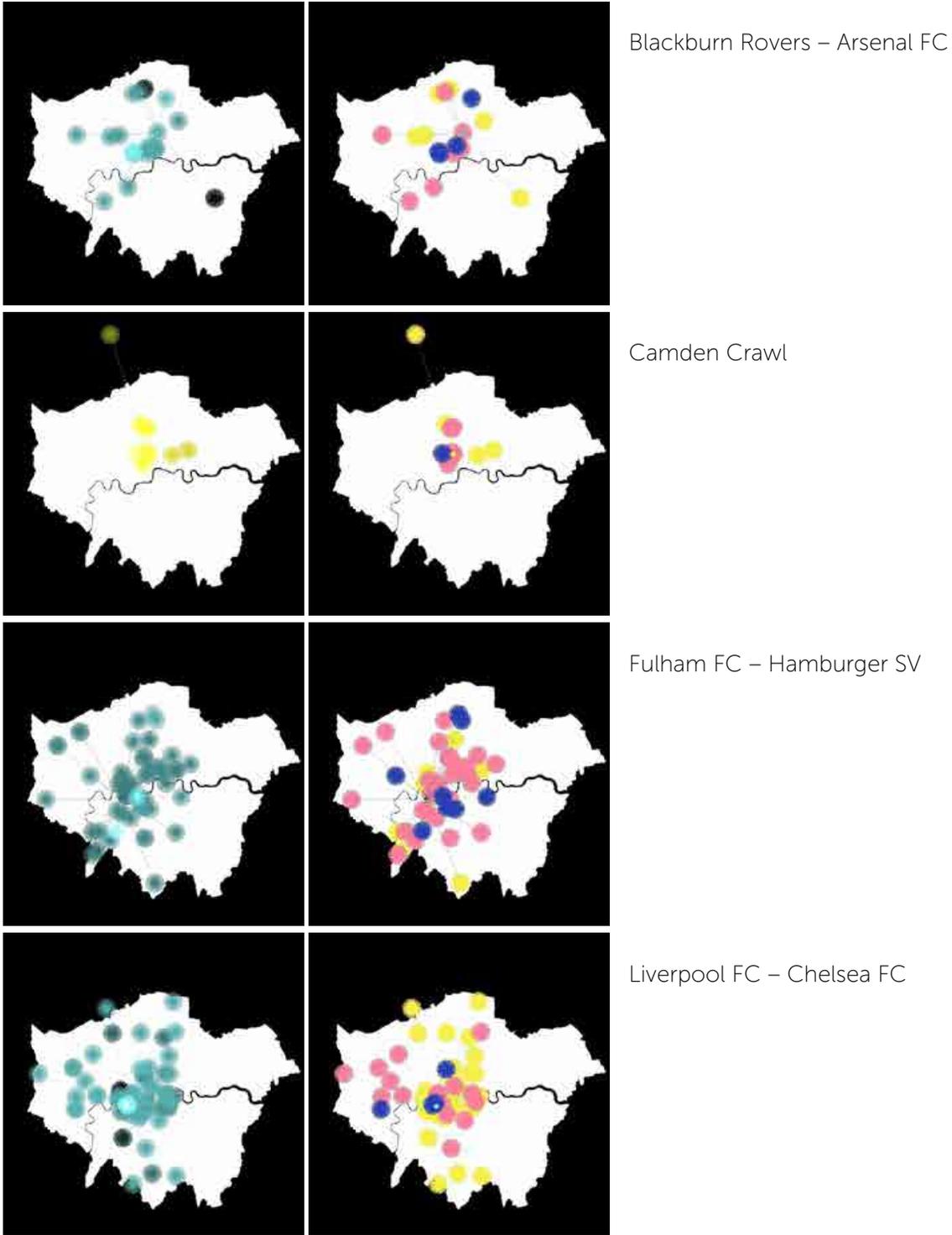


Figure 13. Outcome, showing tweets for the selected four events, in relation to the time throughout the week (left) and the relation to the opening hours of the event – tweet sent before / during / after (right)

There has always been a "back-and-forth" between the research method and the development of the data output, based on the filtering stages. The analysis and methodology related to the spatial/a-spatial relationships had to be refined several times during the process, bringing up limitations of the used technique. For example, by tracking sensitive words, it is not possible to identify Twitter-patterns of the same user, or following his path through the urban fabric by sensing his tweets and geo-location. Using other technology, like Bluetooth, would be more precise as revealed in other investigations (Chronis A., et al. 2010 and Fatah gen. Schieck, 2008). Also it's not possible, using this method, to differentiate hash-tags (tags marked with "#" at the beginning of a word, which group tweets of different topics) from words used in the tweet content. Furthermore, based on time limitations the project method was unable to include a computational-based solution for the filtering of step 3, where human syntax and semantics brought up "unsolvable" challenges.

Based on the above, the project must be seen as a first step towards a deeper investigation on behavior-patterns, dealing with the spatial / a-spatial relationships of events within the urban environment. While developing the research in order to answer the original question, new questions opened up, as well as new possible input that can be added to the research itself.

In terms of the filtering system, the biggest disadvantage of the used method is the fact that the final stage uses manpower to come to a result. An application of a powerful algorithm, like a neural-network, would be the next step to focus on, which can handle the large amount of data. Furthermore the question arises, whether the third filtering stage is actually necessary or if, by comparing it with the second stage in detail, the same patterns would result. Nonetheless, this can be conceived only as a fragment of a larger and most detailed study that can evaluate in a deeper level the knowledge gained by this process, at that specific stage.

#### **4 Conclusion**

The framework stated above represents a selection of twitter data referring to a 7 day period of information gathering and the extraction of results based on a staged filtering process. Following each step of this extensive research, the study stands as an intermediate point of pure visualization and pattern representation. The idea of working both ways to achieve the best possible result addressed issues that had to be solved and provided deeper knowledge and understanding of the mechanisms needed for data processing. The outcome was an intriguing concept of various types of events, contained within urban space (London metropolitan area) restrained by the amount of information (tweets) received in the same location. The emerged patterns define a relationship among physical and digital space, reinterpreting the notion of the city perceived only as a physical frontier.

The dynamics of digital interface in relation to the built environment can be seen as the major aspect of this project. The various patterns of geo-located tweets outlined a clear image of the different types of events, the location and the time-scape momentum that can be identified. Nonetheless, limitations exist in processes like that, where the basic filtering process can overcome the syntax, but not the semantics of written word. It is imperative to note that word recognition is not enough to extract complex information from human language and a more powerful algorithm is needed with a steep learning curve over written word. For future work we focus therefore on the development and installment of an algorithm in order to have better insight on the topic.

With a rapidly grown demand on new technologies that overlay the physical with the digital, the urban environment will have to adapt and interact with the node of the users. Recent examples verify this statement, where people share information (US presidential elections), create social movements (Arab Spring, Occupy Movement) and even more influence decision making policies (election, legislations, protests etc). Augmented technologies play an important role on the shaping of cities, not only in terms of accessing digital space, but also in defining networks. Location based services create an invisible layer within the urban realm, containing a rich dataset of geo located opinions, emotions and detailed information of the city and its inhabitants. With the cityscape exceeding the known boundaries, the person's location inside the urban fabric is becoming the core theme for technologies and analytical methods of the future. In this respect we need to understand the relationship of global information to local situations: This project is an initial step to investigate this relationship by exploring spatial – temporal patterns among the physical and digital network.

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## Uncommons: Uncommon Occupations

Moderated by Jordan Geiger, University at Buffalo

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- 54     **ADAM ROTHSTEIN AND ROSALYNN ROTHSTEIN**  
Media Platforms, occupied Media Space, and Political Narratives: A Critical Examination of the Occupy Protests, 2011-2012
- 61     **JONATHAN MASSEY AND BRETT SNYDER**  
Crowdmapping Translocal Publics

## OCCUPYING STRATEGIC AND TACTICAL MEDIA SPACE: FAILURES OF TOOLS, BEHAVIORS, AND NARRATIVES

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### **Introduction/Abstract**

The Occupy protests of 2011 and 2012, in addition to contesting the control of physical space, created a public realm of media space different than any other direct action political movement in the United States thus far. While there were a number of positive effects of this topological shift, this media space became more complex than the initial political narratives generated by the movement, and the movement failed to fully “occupy” this space, at the expense of its political success.

Narratives are the lifeblood of politics; they set the context for interpersonal, social, statelevel, cultural, and strategic actions by prescribing possibilities, and describing limitations. The narrative of the Occupy movement made possible by its technological means of publication was largely that of social media: individual expression without any further program. While there was some success with the deployment of new strategic narratives, by and large the technology limited the media space to an arena of selfexpression through the means provided by free media platforms. While it would be closeminded to call this a single-point “failure” of the movement, it was certainly a major stumbling block. Without escaping the ingrained, specifically-designed limitations of commercial media platforms, vulnerabilities opened, and technology failed to support the movement in ways that might have helped the movement develop.

We — a folklorist and a technologist who both research technology’s capacity for narratives and spent significant time working in the media groups at Occupy camps — mapped out just how these commercial platforms failed the political narrative required by the Occupy protests of 2011 and 2012. The shape of these platforms defined a certain accessibility, which did not fully correspond with the tactical political space. These failures stimulate questions for going forward, about how to design tools, behaviors, and narratives to overcome these faults.

### **Tools and Platforms**

We’ll start with an introduction the primary digital tools used by Occupy. This is not a total list, but describes what was certainly common across the networked camps. (Note: These conclusions are based on primary observations. Adam was the point-of-contact for the Portland Occupier news website started in the camp of Occupy Portland, and in addition to traveling to several occupy

camps across the country, he worked in conjunction with other Occupiers from Seattle, LA, San Francisco, Oakland, Chicago, Boston, New York City, Washington DC, London, Houston, and other cities to develop and implement digital processes for the purposes of activism in and outside of the camps.)

#### Social Media

- Facebook
- Twitter
- Tumblr
- Instagram
- Flickr
- Storify

#### Video

- Livestream
- Youtube

#### Various Cloud Services

- Gmail, other webmail
- Instant Messaging
- IRC
- Google Docs
- Wordpress, other web hosting and blog SaaS
- Conference Call services
- SMS relays (Cel.ly)
- PayPal & We Pay
- Wikis

#### Hardware

- Digital Cameras
- Digital Video
- Laptops
- Removable Storage Media
- Cell phones
- Tablets
- Two-Way Radios
- Sound Amplification
- Wireless Routers/Modems
- Mesh Networks
- Off-grid power systems

### **Strategic Media Space**

These tools were used for strategic purposes in a general media space that can be categorized as follows:

- for internal communication among activists, generally called communication;
- for self-directed legwork of the camps and activism generally called organization;
- for external communication and PR, generally called media.

Naturally, there is crossover between all these categories. External media is also for internal consumption; efforts to promote transparency and the large number of activists involved mean

that internal communication are also an element of public relations; and there is no piece of the process that is ever separate from the entirety--meaning no effort of organization is ever in isolation.

There was a great degree of success in the occupy camps in this strategic space. Technology is a fluid front--the exact topology of technical tools shifts from week to week, and are highly dependent upon material resources, as well as the skill levels of those involved. The fact that free (as in no cost, i.e. "free beer") tools were preferred by the majority of activists made this topology even more fragile, as the availability of free tools depends on what is made available by developers. Occupy was unique, in its relatively unplanned and wide-spread adoption as a political platform by a large number of people with varying, if any activist experience. All organizational structures were invented ad hoc, all procedures were developed ad hoc, all training was done on the spot by those willing to teach and to learn, with whatever resources happened to be available at the present time. All procedures, tools, and structures were susceptible to decay as the terrain of goals and needs shifted, as volunteers re-deployed themselves between tasks, and as trial and error had its slipping evolutionary effect across the technological topology and the changing goals. And everything was subject to threat of immediate violence at the hands of the police. To put it bluntly, it is difficult to develop an activist office structure in a tent, with intermittent electricity, with no money, with people you have just met by first name only because you happened to be standing next to them, when there is often a real and sustained threat of an armored officer busting into the tent, using chemical weapons on you, and hauling you off to a cell. That anything at all was able to be organized in these strategic media spaces is a success. And that people were able to radically increase their technological skill and use it to further their strategic goals, and to prevent their fellow activists from harm in a number of circumstances is nothing short of amazing. This is the "happy story" of Occupy and technology, and it deserves to be told. However, the shortcomings created by the development of political narratives within the media platforms used also requires examination.

### **Tactical Media Space**

But in addition to the larger strategic goals, there are the more particular tactical media spaces that become collapsed under those general categorizations. While the tactical spaces for any particular Occupy varied, often over the course of a few hours, here are a number that we identify as recurring:

#### Communication

- secure person-to-person communication
- secure person-to-group communication
- tactical mapping
- reconnaissance
- evidence collection
- counter-surveillance
- physical self-defense

#### Organization

- Discussion facilitation
- consensus decision-making
- fast consensus decision-making
- educational/training structure

- resource allocation
- work collaboration/allocation
- resilient physical networks
  - Power
  - Internet Data
  - Intranet Data
  - Voice
  - Video
- equipment sharing/pooling
- liaison with other agencies/allies

#### Media

- task-specific publishing
- goal-oriented publishing
- broadcasting
- syndication
- network support
- monetization structure
- liaison with other agencies/allies

Each of these could require their own exposition to fully describe and evaluate, and have their own micro-tactical spaces. However, what is similar to all of them and what can be said generally, is that of the tools listed previous, while that list satisfies all of the threepart strategic space, no single tool satisfies any particular tactical space directly. In general, all the tools work; but specifically, none of them worked.

The problem is this: none of the commonly available technological tools used by activists are specifically designed to enable a spontaneous, diverse, horizontally-distributed street protest against armed opposition. This is not to say that the tools cannot possibly be helpful, it is to say that they are not designed to be specifically helpful. And yet, they were used.

#### **Behavior Without Narrative**

Without a specific political narrative to guide the adoption and use of technology in response to the tactical media space, activists resulted to default behaviors. These are not the fault of the activists. Rather, these are the common instincts of this particular culture and society, when confronted with the media space that Occupy found itself in. We identified the following behavior patterns that negatively affected the choice of the tools that were used, and resulted in goals of the tactical media space not being achieved.

*1. When we use for-profit tools developed by a company, we are adopting their monetized use-cases.* The tools are each designed by a for-profit company, for a use-case that they have identified as potentially profitable. These use-cases vary. Some, like sending SMS messages from a mobile phone, are very close to the tactical goal of person-to-person communication that developed during Occupy, albeit it with the single important failure that they are quite insecure. Others, like Facebook, are primarily designed to monetize interpersonal relationships by harvesting personal data and serving ads. While Facebook can be used for media or communication purposes, it is really not designed for doing so.

2. When we continue using tools previously adopted in an old media space, we are failing to adapt totally to the new media space. We often consider it clever when we are able to harness a tool for a purpose other than what it was designed for. But often it is simply convenient. By using an insecure phone line for an important tactical call, we reduce the capability of that call to a mere conversation, which anyone could overhear. When we use a chatroom for serious consensus discussions, that consensus discussion becomes less serious.

3. When we pick up tools based on what we see being used by others, we are copying their decisions, rather than properly reacting to the space. Facebook seems to be useful because its widespread adoption stands in for its actual designed-efficacy. In other words, it doesn't work very well, but lots of people use it, so it seems like it works okay. When Livestream is adopted as a media reporting tool because others are using it, or a hashtag is adopted because others are using it, we are creating a digital mob, not a media protest.

4. When we settle for a less-than-perfect tool, we are settling for a less than perfect tactical result. Because something seems to work, we often go ahead with it. However, in Occupy, the movement shifted quickly from a spontaneous idea, to a serious tactical street battle. The stakes increased very quickly, and many people were seriously hurt from being unprepared and utilizing half-measures. This not only is individually dangerous, but led to the defeat of the movement.

5. Without detailed technical knowledge, we are all Othered by a new media space. Anyone who is not fluent in a particular technology is immediately at a disadvantage. If in a media space, the right technological narrative is the difference between safety and harm, the wrong technological narrative can make a person a target. Attempting to use a supposedly "secure" form of communication without understanding what that means, can put a person more at risk than they were before.

6. The choices we make are not always rational choices about what is available, cheap, or convenient, but about our own personal narrative of what we think we are doing. A movement, or any other activity, is only as serious as it takes itself. Decisions are based upon what the goal is perceived and described to be. If the stakes are not viewed as high, they will be treated less vitally.

### **Political Narratives**

Political narratives, for our purposes, are the continuum of how we describe our own actions in the strategic media space. This encompasses personal experience narratives and extends to larger more coherent narratives structured by group expression. The expression of political narratives in Occupy extended across multiple technological platforms, verbal communication, and other modes. Narratives were fragmented from the beginning, reflecting the variety of affiliations within the group. And yet, there was unity within the common strategic media space. For example, the common media space reflected the movement's concerns with accurately representing itself, in the face of mass media's failure to do so.

And yet, there was serious division of that strategic media space. A common complaint from both those outside the movement and some inside it concerned the lack of coherency. "What are the demands?" A fragmented political narrative is not problematic in itself. But in the case of Occupy

the narrative was not just fragmented, but in some cases, woefully non-existent. Demands may not be necessary, but an accurate portrayal of the tasks to be accomplished and the means for accomplishing them are.

Although the Occupy movement is not strictly speaking an occupation (in the sense of a career), the role of narrative in an occupational settings becomes relevant for the individuals who comprised the Occupy movement. Michael Owen Jones, a folklorist who conducted research on occupational cultures, identifies the importance of storytelling, which includes verbal forms of personal narratives, in an organization's setting. Like other folklorists, he understands that storytelling is not significant because it is relating the features of a factual event, but because representations are created through this reflexive relationship between the narrator and audience. (Jones 1996) Jones states, "Although the intentions of storytellers and the interpretations of listeners are not always easy for researchers to pin down, the narrating is clearly meaningful to participants; further storytelling shapes the organization and members' understanding of it." (Jones 1996) Narrative and storytelling about and within an organization, whether that be a workplace or otherwise, plays an important role in shaping the organization. It creates a member's reflexive understanding of the organization. Without this understanding, the member has trouble making a day-to-day connection to the organization. Occupiers had a connection to the strategic media space, but often, not to the tactical media space.

This is not a problem of fragmentation. A technologically fragmented storytelling event can lead to an accurate and comprehensive narrative. In research Rosalynn conducted from a folkloristically-based perspective, she has focused on fragmented storytelling events within the occupational group of 9-1-1 dispatchers and calltakers. A story is told partially in verbal, written or text form. While occupational interruptions mean that stories cannot be told in one continuous verbal storytelling session, and might appear fragmented to someone who is not a part of that occupational community, these narratives still express one coherent message to those who understand the contextual media space and the various technological mediums. Although there are limitations of the technological systems used, they are still adequately used for vernacular storytelling because users have been able to adapt it to their needs.

However, for the Occupy movement, the technological platforms and the media space in which narratives were deployed were not well enough understood. There was no narrative to understand the potential failures, or to deal with them when they occurred. It was assumed that, like the fragmented political narratives that came together to form a strategic media space, the needs of the tactical media space would simply be spontaneously solved. But the default behaviors we identified previously hid within this tactical substructure, growing into serious flaws.

In his ethnographic account of the culture of mushrooming, Gary Alan Fine describes the role narratives play in the amateur mushrooming community:

"Much talk in any group focuses on the group's explicit interests. Personal narrative is a means of dealing with collective concerns. In one sense, this is instrumental talk-talk aimed at the achievement of the group's formal goal. Yet frequently in voluntary groups expressive and instrumental components of group life merge. Expressive concerns are instrumental in voluntary groups; talk is often as satisfying as the action itself." (Fine 1998)

Fine, who has also studied occupational groups, is delineating a difference between voluntary groups, like a group centered around a hobby, and involuntary occupational groups. The roles of narrative within these two separate types of folkgroups differ, in that the latter has a functional basis that overrides the default behavioral actions. The Occupy movement might easily be classified as a voluntary group, in which expressive concerns begin to overcome the explicit interests.

This emphasis on verbal narration found its form in the emphasis on social media in Occupy. The design of many technological platforms used by the Occupy movement are oriented to the user's personal expression, not about creating an explicit political narrative. While the platforms allowed, as designed, a reasonable format for strategic expression, this expression neglected the need to formulate political narratives more appropriate to the tactical media space of the Occupy movement. An additional political narrative is necessary that goes beyond simple expression,

### **Conclusions**

What drew the Occupy movement into the streets was a political narrative — albeit fragmented — that resulted in a strong, widespread expression of strategic unity in a media space. However, in order to remain in the streets, Occupy found itself confronting a variety of tactical media situations for which it had no knowledge, no narrative, and few tools with which to cope. The strength of Occupy's presence in the strategic media space hid the weaknesses gathering in the tactical space, and the tools and behaviors that attempted to organize in that space could not see their own impending failure.

The questions, going forward from this analysis, are these:

*What tools, other than the defaults, could be developed to deal with such tactical media spaces?*

*If such tools cannot be developed, what behaviors, other than the defaults, could be developed to help those in such spaces?*

*What political narratives for these tactical spaces can be developed, to aid the integration of technical tools and technical behaviors, regardless of the inevitable shortfalls?*

### **References**

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Jones, Michael Owen (1996). *Studying Organizational Symbolism: What, How, Why?* Thousand Oaks: Sage Publications.

## #MAP: BIG DATA FROM BELOW

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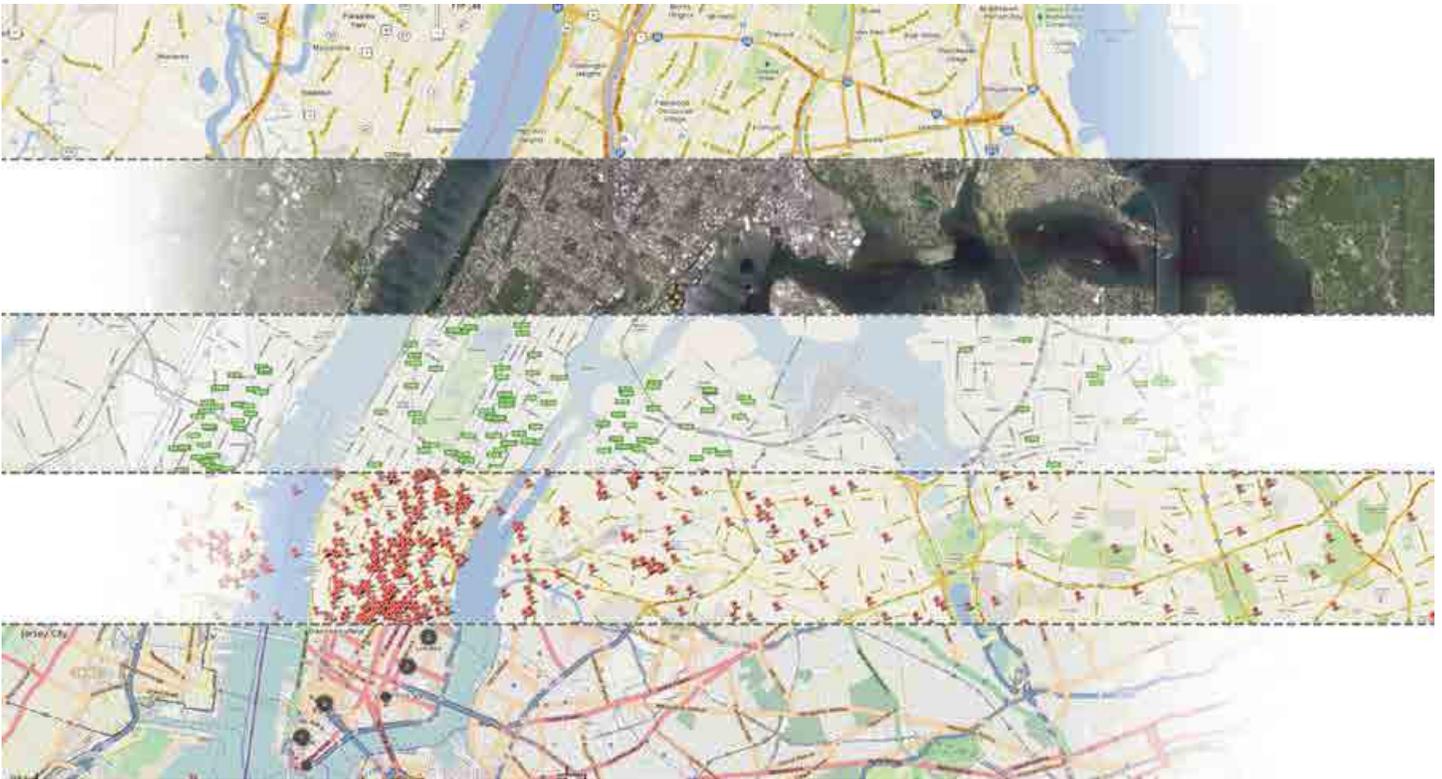


Figure 1. Layers of the Neogeography

### **Abstract**

Over the past few years, activists around the world have used online media to build new publics and polities dedicated to systemic social change. From Tehran to Cairo, Madrid to New York, social media have supported the formation of counterpublics based on the particular social, spatial, and discursive protocols of Twitter, Tumblr, and many other online platforms. In this paper we examine a neglected facet of this development: the rise of crowdmaps as a means for creating uncommon social networks based on emerging media geographies.

By compiling user-generated data into a common geospatial framework, crowdmaps create feedback loops between physical places and online spaces. Focusing on the role that crowdmapping has played in insurgent movements over the past two years across the Middle East, Europe, and North America, we show how activists have used crowdmaps to construct geographies that are neither local nor global, but instead translocal: they connect widely dispersed people, ideas, and resources around localized places, problems, and actions.

Consider 702 Vermont Street in Brooklyn. Nothing would call your attention to this two-story brick house little different from its neighbors on a long block of East New York if it weren't a hotspot in the #OccupyMap, one of several crowdmaps that use the Ushahidi platform to map Occupy activity around the world. Look for 702 Vermont and you'll find a series of reports generated over a couple of days last December as activists used Twitter and spinoff apps like TwitPic, TwitVid, and Telly to geotag ideas, information, photos, and videos relating to a march and rally protesting bank foreclosure on this property and others in the neighborhood. Scroll over to Madrid's Puerta del Sol on the Squares Database, another crowdmap, and you'll find links to #Acampadasol and other websites rich in information about Spain's M12/M15 movement. Visit Damascus, Homs, or As Sukhnah on SyriaTracker and you can review thousands of reports of deaths and other incidents in the ongoing Syrian conflict. Or enter another geography of conflict through Al Jazeera's War on Gaza map.

Who is building, populating, and navigating the hypergeographies created by these and other crowdmaps? How do these emerging "uncommons" feed back into city streets to shape wikicamps, street actions, and conflicts? How do they intersect—or not—with the deliberative processes of self-government? As we address these questions we seek to redefine notions of public space offering architects a new lens onto the changing virtual/physical landscape.

### **702 Vermont**

The house at 702 Vermont Street in Brooklyn doesn't stand out. It's one in a series of two-story brick houses that extends the length of its block in East New York. Like many of its neighbors, the house has a narrow, fenced front yard leading to a few stairs and a porch that has been enclosed and incorporated into the house. Trees partially screen its tan vinyl siding and blue cornice. After picking up the kids at Public School 213, you might drive right past it without noticing as you pulled up to the light at New Lots Avenue.

Open Trulia or another real estate app on your phone, though, and you'll learn a lot about the house, including the fact that while the current owner bought it in 2007 for \$424,500, and the house is taxed based on an assessed value of \$384,000, its estimated market price is \$286,000. There's a good chance this house is underwater, mortgaged at a value that far exceeds its market value. Indeed, plug in the address at NYC CityMap, the GIS-based portal for municipal information and public records, and you'll see that when the current owner bought the house five years ago, Mortgage Electronic Registration Systems Inc. (MERS) recorded a primary mortgage of \$339,600 and a secondary loan of \$84,900. A year and a half later, the company assigned one of the mortgages to Countrywide Home Loans. This past June, it assigned another to Bank of America.

Having financed the full purchase price for this now devalued house, the owner is probably underwater by nearly \$140,000. Having obtained no-downpayment financing in this majority-

minority neighborhood, the owner is also at high risk for foreclosure. The website RealtyTrac confirms that the owner of 702 Vermont entered pre-foreclosure on 5 October 2011, joining dozens of other properties in various states of foreclosure just in the immediate neighborhood.

Keep exploring Trulia or RealtyTrac and you'll have access to deep data not only on 702 Vermont Street but also on all of Brooklyn, and many other locations as well. Spend time with CityMap and you'll work up a detailed profile not only of this house and its occupants but of the entire city. Augmenting these datasets are others that allow you to map many other demographic and financial data including lending and foreclosure histories (Ritholtz 2010).

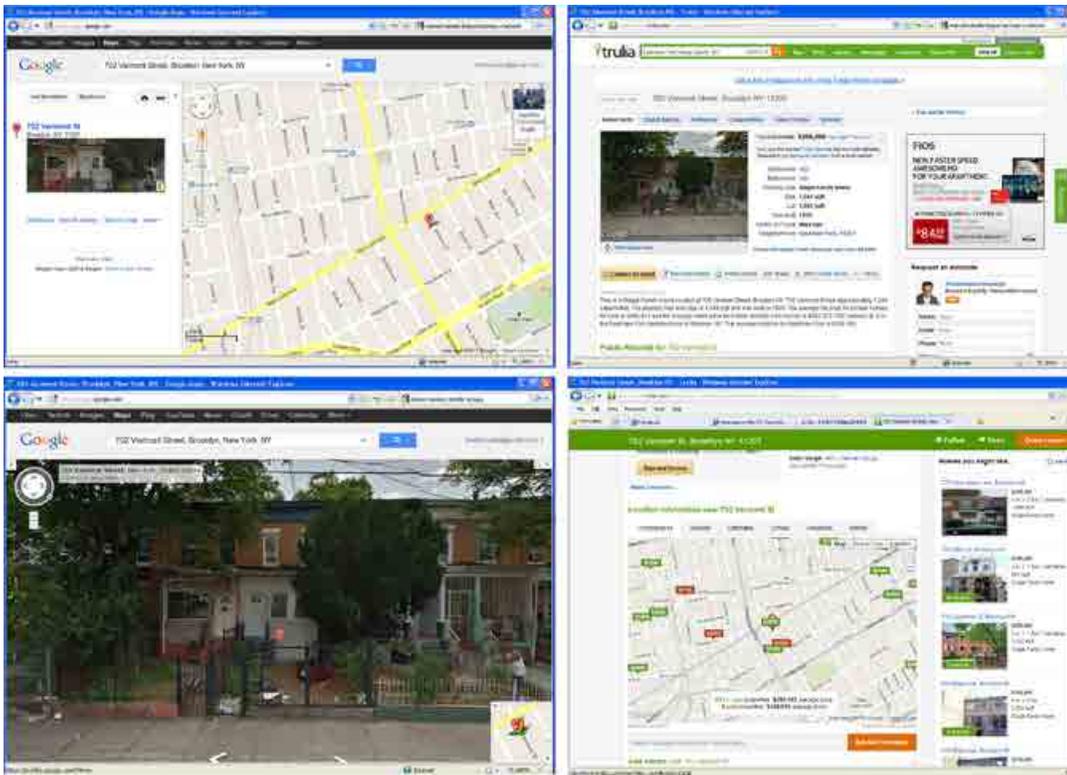


Figure 2. 702 Vermont as seen from Google map view, street view, and Trulia

Through GIS-enabled commercial services like Trulia, Zillow, and their rivals, geospatial information has become an integral medium for real estate development and capital investment in the built environment. Through satellite imaging, email filtering, and other forms of data mining, federal, state, and municipal governments have used place-based information to govern at levels that range from waging war to staffing schools to removing abandoned bikes.

The data mining and dataveillance enabled by these geospatial information systems support forms of governmentality (Dean 2010) anticipated by Gilles Deleuze in his lyrical description of the control society (Deleuze 1992). But while much of the big story of urban coding lies in these macro scale datascares, there is a counterpoint of activist tactics for intervening in data-mediated urbanization and social control.

Consider 702 Vermont Street. There's little in Trulia or the CityMap to call your attention to this particular property. But look for Brooklyn on the #OccupyMap, an online crowdmap affiliated with the Occupy movement, and you'll find it fast. 702 Vermont lies in a big circle on this map, because it's a hotspot in Occupy Our Homes and other forms of populist resistance to the foreclosure system operated by big banks and MERS. Click on the circle and you'll find a series of reports generated over a couple of days last December as activists used Twitter and spinoff apps like TwitPic, TwitVid, and Telly to geotag ideas, information, photos, and videos relating to a march and rally protesting bank foreclosure on this property and others in the neighborhood. You'll see photos that tag vacant foreclosed houses as potential sites for occupation, pictures of crowds marching, quotes from the rally, video of speakers, and footage of the march culminating at 702 Vermont. You'll join OWS tweeter DiceyTroop and others as they walk into the house to which a counterpublic has laid claim with a candle to symbolically warm it for the threatened family. You'll see the 99% bat-signal projected on vinyl siding, followed by the link to a livestream that broadcast a subsequent confrontation between occupiers and the police. "Our homes are under attack, we've come to take them back" the crowd chants, under a colorful canopy of umbrellas and balloons.

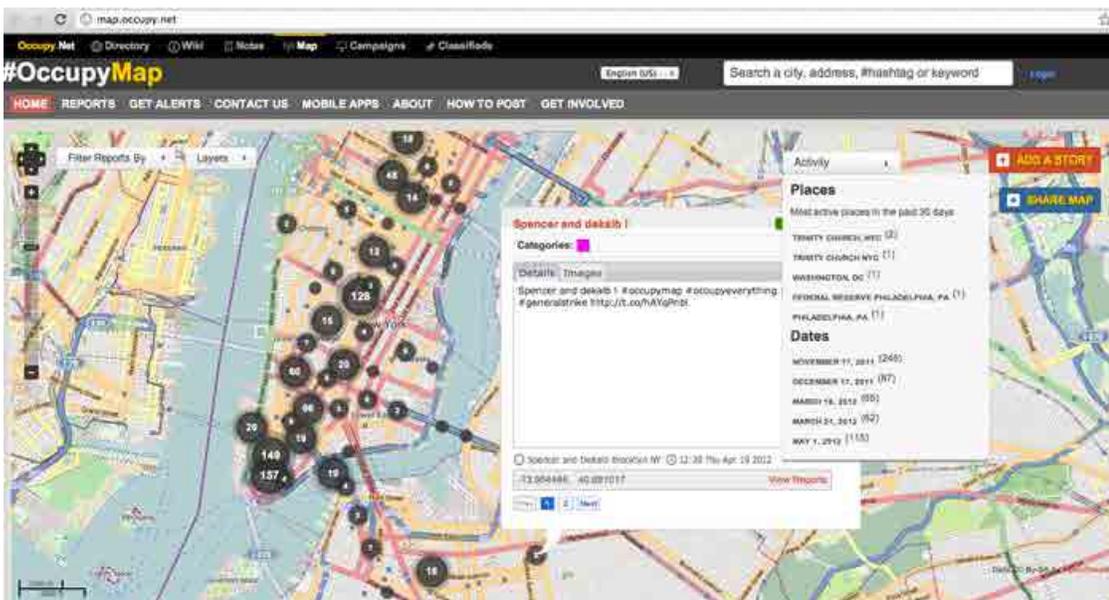


Figure 3. #OccupyMap allows users to contribute a wide variety of data

### Hypercity

It would be naïve to think that we could account for the architecture of 702 Vermont Street without factoring in the ways that it is conditioned by the data networks that encompass it, and something similar is true of the city that it encompasses the house and its occupants. By georeferencing discussions and information-streams generated in Twitter and other social media, the #OccupyMap creates a counterpublic (Warner 2002) operating in a vast hypercity.

The result is a new ecosystem created by a continuous feedback loop between physical places and online spaces. Built of granite and asphalt but also algorithms and information, this multiply mediated urban realm encompassed Zuccotti Park and other key sites of Occupy activity but also the many dispersed locations indexed by the map as well as the network of online venues

supporting discourse, dialogue, representation, and interaction among occupiers and other interested parties (Massey and Snyder, 2012). Beyond simply orienting a user the #OccupyMap and other crowdmaps like it engage viewers as active participants, agents in a collaborative construction of place and space.

A little-noticed dimension of the Occupy movement was its creation of distinctive counterpublics through the interplay between interactions online and in city streets. Extrapolating from the work of anthropologist Jeffrey S. Juris, we can recognize in Occupy a pattern of aggregation similar to those of a flash mob, in which previously unconnected individuals come together quickly based on instant messaging and similar real-time communications (Juris, 2012). Social media engaged many thousands of people who had no pre-existing connection to social change organizations and activist networks. These virtual spaces, even more than city parks, became points of encounter where previously unrelated individuals aggregated to form popular assemblies.

Focusing on Occupy Boston, Juris suggests that while the alter-globalization protests of the 1990s drew on pre-existing networks of people to create “temporary performative terrains along which networks made themselves and their struggles visible,” the Occupy movement combined these network logics with a new set of aggregation logics. “Rather than providing spaces for particular networks to coordinate actions and physically represent themselves,” he writes, “the smart mob protests facilitated by social media such as Facebook and Twitter make visible crowds of individuals aggregated within concrete locales” (Juris 2012, 260-61).

Similar aggregation logics operated in other online venues, including the 99 Percent Project, a Tumblr blog that allowed people to post photos and signs about the impact of debt in their lives. Political scientist Stephania Milan has characterized Occupy protests as “cloud protesting,” comparing the movement to “a cloud where a set of ‘soft resources’ coexist: identities, narratives, and know-how, which facilitate mobilization,” much as social media hosted via cloud computing gives individuals the tools for “producing, selecting, punctuating, and diffusing material like tweets, posts and videos.” (Milan, 2012)

### **Crowdmaps**

Though Milan and Juris don’t address them, we could add crowdmaps to the list of cloud tools that activated aggregation logics in the Occupy movement. Online maps populated by user-generated content were published at key Occupy-related websites, including Take the Square, US Day of Rage, OccupyWallSt.org, and Occupy.net. Most used Ushahidi, free open-source crowdmapping software developed in 2008 in Kenya to support disaster relief and response efforts. By compiling data into a common geospatial framework, these crowdmaps visualized Occupy participants and camps as discrete elements that aggregated to form a global phenomenon. They associated people, texts, images and videos with particular places, constructing hypergeographies of action and potential. Animated timeline features encouraged users to visualize themselves and local events as part of a process of “#globalchange.”

The most robust of these crowdmaps was the #OccupyMap, hosted at Occupy.net and built by the Tech Ops working group of the New York City General Assembly, the ad-hoc polity established by OWS in lower Manhattan. As we have seen, the #OccupyMap provided a web interface for reporting events such as marches, rallies and police interventions, with easy media embedding

and compatibility with the Ushahidi app on iOS and Android mobile devices. It also populated automatically from Twitter: any tweet from a location-enabled device that included the hashtag #occupymap generated a geotagged report that could incorporate photos and videos via the Twitpic and Twitvid apps.

By spring 2012, the map had aggregated some 900 entries from New York City into a database that could be sorted geographically, temporally, by medium and by event type — all viewable via map, timeline and photo interfaces. By pulling together disparate events and data across space and time, the #OccupyMap created a counterpublic integrated through its use of online media to contest state and corporate control of urban places—and of the advantages of power and value that accrue to corporate and state data-aggregators.

This and other Occupy crowdmaps were most compelling rhetorically at larger scales. Viewed at national scale, the red placemaker icons on the User Map at OccupyWallSt.org suggested a crowd of hot air balloons that had landed — or were preparing to take off — all across the country. In places they clustered so tightly as to create red contours marking an otherwise invisible topography of radicalism. Zoom in, though, and you found a set of landscapes distinct from those visible in city streets. In counterpoint to the intense attention paid to Liberty Plaza, these virtual geographies redefined the public of Occupy Wall Street as a dispersed set of agents linked more by online communication channels than by proximity.

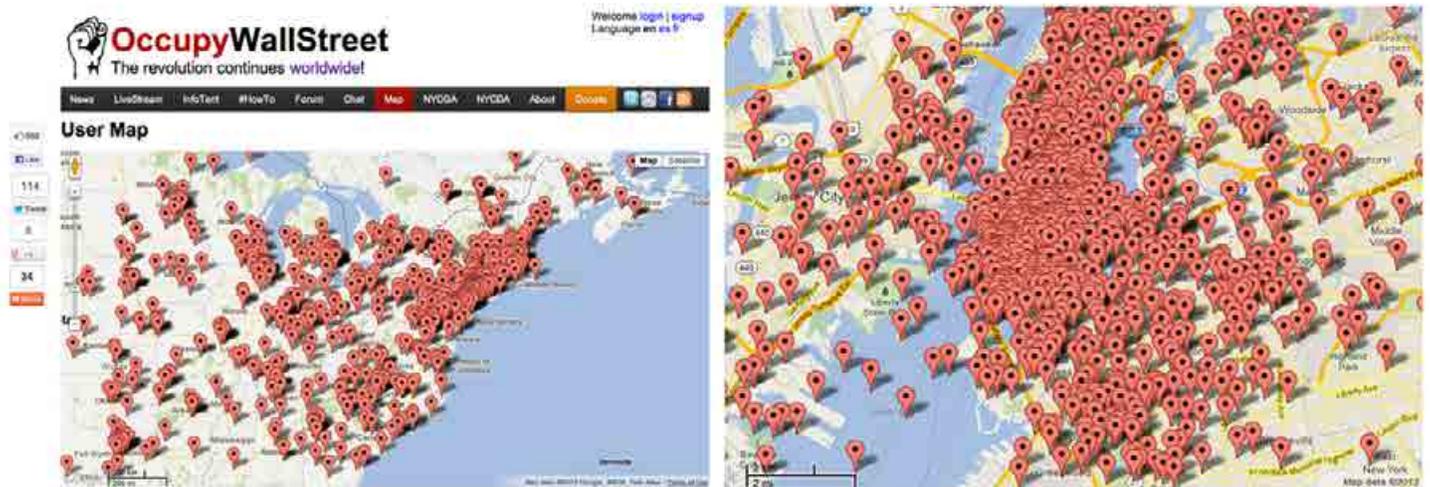


Figure 4. Occupy Wall Street user generated “attendee” map

### Open-Source Urbanism

The #OccupyMap shows that crowdmaps had a more than rhetorical power, though. Tracing the recent microhistory of 702 Vermont Street shows how Ushahidi allowed occupiers to recode the city. Crisis mapping expert and former Ushahidi staffer Patrick Meier suggests that live crowdmapping affords publics a tool for georeferenced “sousveillance,” a form of inverse surveillance or dataveillance in which mobile technologies allow individuals and subaltern groups to generate their own data sets and transcripts (Meier 2011). Dispersed technologies and bricolaged constellations of open-source software enable alternatives to GIS: ad-hoc and off-the-shelf or jury-rigged mapping and geocoding practices that Andrew Turner calls “neogeography” (Turner 2000).

While online activists relied on corporate media such as Facebook and Twitter to reach a broad public, many made a point of using open-source software, sources and methods such as wikicoding. Occupy websites became spaces for the elaboration of what Christopher Kelty calls a recursive public, “a public that is vitally concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence” (Kelty, 2008). In the physical realm, Liberty Plaza and other occupied spaces functioned as offline analogues of a wiki. Participants without much prior affiliation built new worlds and organized themselves to maintain them while avoiding hierarchy and formalization whenever they could. At these “wikicamps,” open-source urbanism operated at a scale simultaneously local and global (Castells, 2011). Through their distinctive collocations of physical place and virtual space, Occupy camps and hotspots like 702 Vermont became part of what Saskia Sassen terms “translocal geographies” of trade and politics (Sassen 2012). The New York camp was built with knowledge, idea and resources from Spain and Argentina, Chiapas and Cairo, as well as from local coalitions.

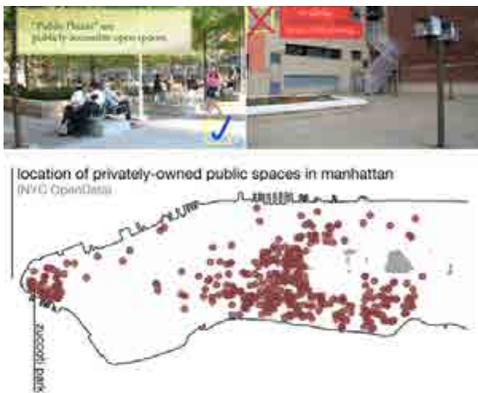


Figure 5 (Left). @OccupyPOPS, “Twitter bot” that coordinates weekly mini-occupy movements

### Future Cities?

Since the clearance of Zuccotti Park and most other Occupy wikicamps across the U.S., activists have continued to explore the ways that digital media can reshape our public spaces and public spheres. One example is a course project at The New School that emerged from a multi-day, multi-city “hackathon” sponsored by the working group Occupy Research. @OccupyPOPS is a script that cross-references check-ins on social media sites Foursquare and Twitter with the New York

City government database of privately-owned public spaces, then automatically tweets a call to temporarily occupy a particular POPS at a specific date and time (de Klerk 2012). Created by Christo de Klerk, @OccupyPOPS mobilizes virtual spaces, physical places and social networks to reshape urban public space and the regulations that govern it. The intention of the project was as much to call attention to the Occupy movement as it was to heighten awareness of under-utilized privately owned public spaces. Other New York-based projects addressing the issues foregrounded by Occupy include #whOWNSpace [<http://whownspace.blogspot.com/>] and The Public School [<http://thepublicschool.org/nyc>], as well as pre-existing initiatives like Not an Alternative [<http://notanalternative.com/>]. Projects like these test the capacity of geotagged social media, deep maps, and crowd mobilization to change the ways we see, appropriate, and inhabit our cities.

Crowdmaps such as the #OccupyMap conjure emergent “cloudy” publics aggregated through social media across new geographies and modalities of space. They also recode the time of urbanism. It’s easy to romanticize the flash mob, but the real- and near-real-time interactions sustained by text alerts, Twitter, crowdmaps, and the like support rapid interaction among geographically dispersed participants.

Occupy activists mobilized this capacity in a new direction following Sandy, the “superstorm” that hit the Caribbean and the mid-Atlantic and northeastern U.S. in October. By creating the crowdsourced Occupy Sandy Map of the New York City metropolitan area and a site dedicated

to Occupy Sandy Wayfinding in the Rockaways, occupiers suggested that crowdmaps might continue to build translocal coalitions like those that sustained their wikicamps a year earlier. Complementing the disaster management activities of the Federal Emergency Management Agency, these efforts suggest that urban coding could promote an expanding range of translocal counterpublics and civil societies.

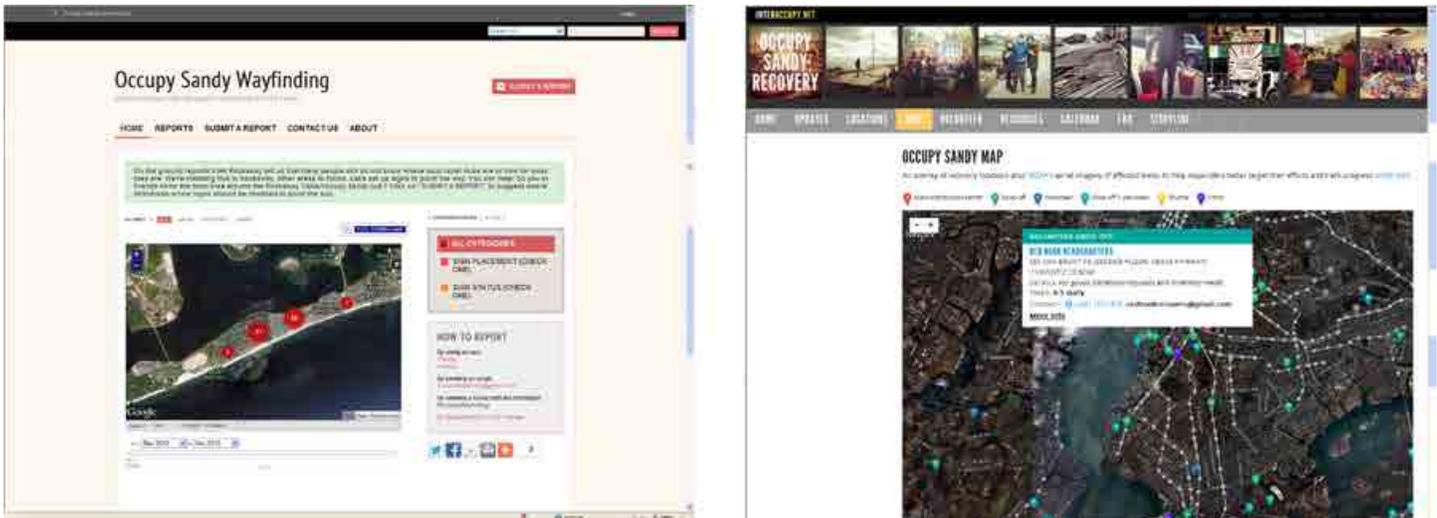


Figure 6. Occupy Sandy user generated maps

One promise of crowdmaps and other online media is to help individuals and collectives build civil societies beneath and beyond the nation-state. If translocal connections such as those that distinguished the Occupy movement thicken and expand, they have to the potential to open up territories of action and belonging distinct from those that currently frame civic participation. As the relationships between physical and virtual, urban and online, public and private evolve, we may find new potentials for citizenship and ownership alike. The feasibility and character of these media will depend not only on the size and scope of their datasets but also on the particular relationships they enable between data clouds and the cloudy territories of individual subjectivity and everyday life.

The timelogs and ongoing evolution of #OccupyMap and its successors are likely to promote distinctive ways of seeing and practicing history. Occupiers #JEZ3PREZ and ATCHU recently called on their fellow occupiers to resist consolidating their records into an archive, on the grounds that “to create an OWS archive risks perpetuating the archival practice of fabricating history from a hegemonic perspective” (#JEZ3PREZ and ATCHU 2012). They called instead for an “anarchive” based on a potlatch and anarchist ethos: a dispersed set of objects and records sustaining “open space in which history is allowed to take place.” Might the #OccupyMap be one such realm?.

## Handbook to the Neogeography

Amid the landscape of tools for understanding and participating in the landscape the contemporary architect must no longer be limited to zoning maps and city codes. As the ecology between specialized sites and the physical landscape become more deeply entangled, the virtual will be increasingly concretized. And unlike the autonomous "Berlin Free Zones" that Lebbeus Woods imagined, the contested spaces of the next generation are all around us. It will thus be in the novel recombination of online and offline that architects will mobilize publics, focus investment, and re-conceive novel forms of ownership. By turning the tools of big data as a mirror onto the landscape, we might remake cities through a new collective image.

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## Uncommons: Social Capital & Social Practices

Moderated by Marcus Foth, Urban Informatics, Queensland University of Technology

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71 **KARLI SCOTT**

Quantifying Social Capital in a Digital Urbanism: Developing Social Sustainability through Digital Analysis of Zero Growth Cities

**ANTOINE SCHMITT**

City Lights Orchestra (project)

## QUANTIFYING SOCIAL CAPITAL IN A DIGITAL URBANISM: DEVELOPING SOCIAL SUSTAINABILITY THROUGH DIGITAL ANALYSIS OF ZERO GROWTH CITIES

**KARLI SCOTT**

Wimberly Allison Tong & Goo

### **Abstract**

This article explores the potential for using social media to quantify social capital in cities and neighborhoods that are experiencing the effects of urban decline. By first redefining social capital in a digital context, places and events are measured by their influence for social gathering. Social assets and deterrents are evaluated by their rating and presence in geo-location based digital applications, such as FourSquare, Instagram, GeoCaching, CrimeReports, and Yelp. The final mapping of these values is meant to convey areas of positive and negative social capital, concentrations of which give approximations for places or districts that require communal intervention. Doing so gives opportunities for planning initiatives to utilize existing positive influencers to counter the negative.

The High Falls district of Rochester, New York was used as a case study, and gave insight into limitations of using social media in low-income neighborhoods. Recommendations are made for community organizations to expand their presence in the digital realm of the city, and for digital applications to reward users for engaging in local businesses, organizations, and events.

### **Introduction**

#### Social Capital

Before we begin to quantify social capital, we must first define the term in a digital context. Robert Putnam argues that social capital symbolizes “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam 1996). In the physical realm, social capital is manifested in community organizations and public spaces. Whether it is in a school, religious institution, park, or plaza, citizens are creating social capital by interacting with other people in their city or district. It is through these impromptu connections that residents are able to identify their neighborhood, establish trust with others, and foster safety and cooperation.

In *Bowling Alone*, Robert Putnam stated that there are two elements that make up social capital: bonding capital and bridging capital. Bonding capital is the kind that exists between people who know each other, and brings them closer together. Bridging capital takes people who don’t know each other and brings them together (Putnam 2000). These two components have a symbiotic relationship, and both are needed in order to foster strong social capital.

Today, with the ubiquitous presence of technology, people are engaging with cities differently. Digital applications on mobile phones afford citizens to share their experiences with a place on a global level. Additionally, these users leave an impression behind, which will exist long after their visit. For example, “Explore” features that exist on applications like Foursquare and Yelp recommend new places to users by using check-in information and ratings generated by others in their city or social network. Therefore, we can presume that digital applications allow people to increase their connections in their urban environments, which is representative of building social capital. We can use digital applications to measure social capital because they record values for the interactions and qualities that are applicable to its foundations. These values are representative of what happens in the city. However, the interactions created in these interfaces cannot build social capital on their own. It is only in the physical realm that neighborhoods, social norms, and trust can be established. However, this may only be a condition that is reliant upon the limitations of features in existing digital applications.

### **Positive and Negative**

In order to fully comprehend its social infrastructure, we must measure both positive and negative influencers that effect social capital in a city. Public spaces, community organizations, and businesses will be considered positive influencers because of their population draw. In contradiction, vacant lots and crimes will be evaluated for their negative influence on social interaction.

Public space is vital to the fostering of social capital because it is free, accessible, and no individual can claim ownership of it. Its quality is dependent upon the actions of its visitors, which can be parlayed to its influence on the district’s social capital. One way I recommend evaluating this effect is by the appearance of geocaches on site. Geocaching is a global game of treasure hunting that engages an online community with an outdoor experience. The presence of a geocache in a place is akin to someone giving it a recommendation (O’Hara 2008). Members of this large network participate with the expectation of discovering a new place, or one they often overlook. When someone enjoys their experience with a geocache, they log their visit with a “happy” review, which we will use as a metric for social trust. For when a participant favors a geocache they are also favoring the recommendation, which translates to building trust in the network.

In this study, non-profits and religious institutions are anticipated to be the most significant actors for building social capital, as they are places that engage citizens to participate in philanthropic activities. By interacting with these organizations, citizens create a supportive network in their community, and reach outward to gain new members. This programming is what makes social capital positive, keeping crime down and citizens happy.

Now while we have established social capital as an intrinsically good quality, there is also a negative equivalent. It’s a value that can either be beneficial or detrimental for a community. For instance, a gang is a community network that has established norms and trust. Those who are active participants in a gang reap social benefits from their network. However, there are also repercussions for their activity. Where these negative networks intersect with other inhabitants, crime, loss of population, and distrust is prevalent. In some cases, these unfavorable activities offset the constructive nature of social capital, thus causing a city to carry tension and experience the conditions that contribute to decline.

One condition of urban decline is the presence of vacant lots. Lowering the property values around them, these parcels are a contemporary issue that is relevant in all post-industrial cities. A majority of these lots are unsellable without environmental remediation because of their chemical history. The challenge with remediating these parcels is that the investment for ecological health is too high for many cities and companies to consider. Additionally, there is a very slow return in investment because the processes take several years to complete.

A second typology for vacant lots is the foreclosed home. US foreclosure rates are currently declining in Rochester, but there is still an inventory of foreclosed homes in the market from the last 78 months (RealtyTrac 2013). Research has shown that foreclosures have a significant effect on criminal activity because they are social and physical disturbances in a neighborhood. They are not caused by the appearance of crime, but rather they harbor the conditions that allow for crime to occur (Immergluck Smith 2006).

In partnership of vacant lot analysis, there is reason to evaluate crime events in a city. In 1998, Temkin and Rohe quantified social capital in Pittsburgh using community surveys and census data in order to understand its relation to neighborhood stability. One of the conditions they define for this condition of stability is low crime rates, thus allowing neighborhoods to promote “a healthier social environment for their residents” (Rohe & Temkin 1998). For this article, I will be evaluating the severity of crime activity in order to understand the influence it has against positive social activity.

### Case Study

The historic district of High Falls in Rochester, New York will be used as a case study in this article. I will explain methods of gathering data from digital applications and then calculate its social assets and deterrents using formulas that can be used for any city at any scale. This site is unique for its variety of assets and land use typologies, but it was chosen for its relatable conditions of zero-growth that is prevalent in many post-industrial cities.

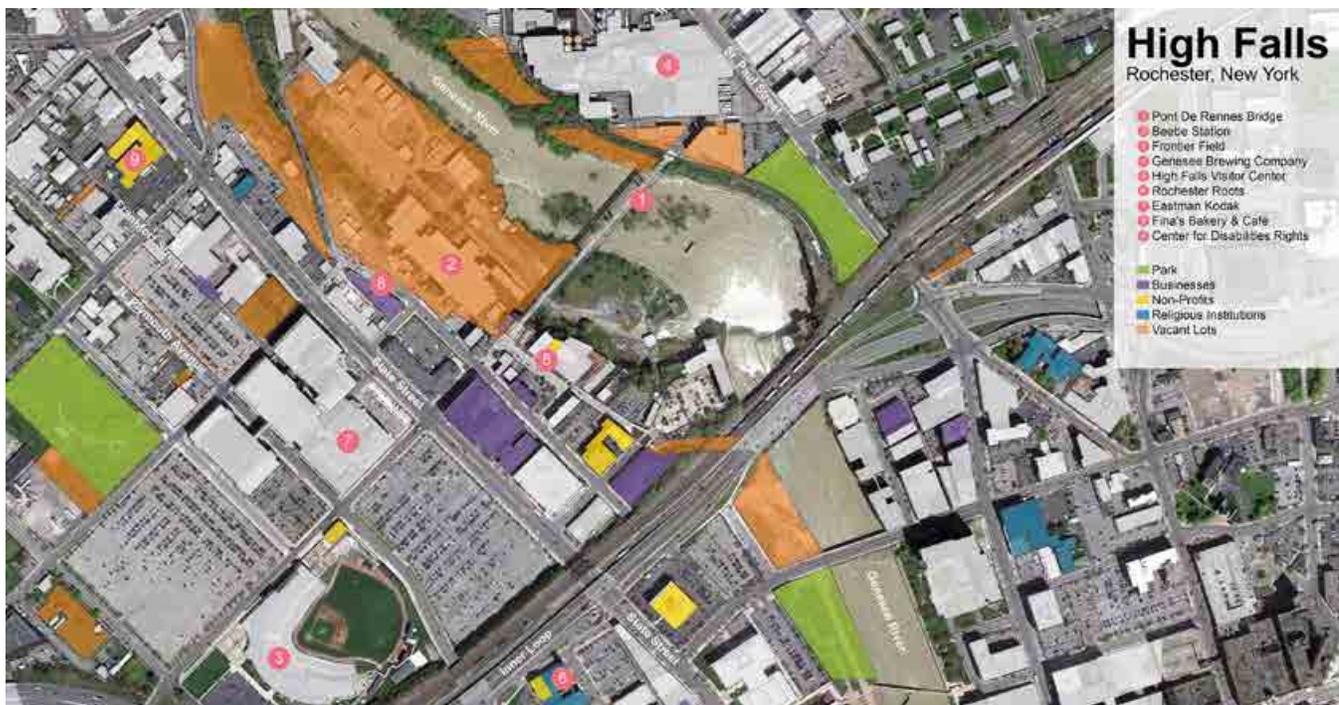


Figure 1. Diagrammatic map of the High Falls district in Rochester, NY.

## High Falls

The site exists in the downtown area of Rochester, populated with a natural landmark, parks, religious institutions, businesses, non-profits, and an extensive industrial history. High Falls is the nexus of several census districts. As you can see in Figure 1 above, its development is concentrated along the Genesee River with its distinct waterfall and gorge. In the early 20th century, this water was a resource for powering flour mills and later industrial processes. What remains of this history is the Genesee Brewing Company, a vacant power facility, the Eastman Kodak tower, and warehouse space converted into museums and commercial properties. This site is just outside of the Inner Loop, which is Rochester's downtown as defined by a freeway, and surrounded by low-income neighborhoods. This site is a good case study because of its decline and variety of land use types that are typical in a zero-growth city.

## Calculating the Positive

### Parks and Public Spaces

$$\left[ \text{FourSquare Check-Ins} \times \frac{\text{FourSquare Check-Ins}}{\text{Unique Visitors}} \right] + \left[ \text{Geocaches on Site} \times \text{"Happy" Visits} \right] + \left[ \frac{\text{\# of Geotagged Images}}{\text{Tagged Instagram Photos}} \times 100 \right] = \text{Public Space Score}$$

Figure 2. Formula design for calculating positive influence for public spaces.

We will use Foursquare check-ins as a resource for visitor information. Weighing the number of check-ins over the number of visitors will give a value that is representative of local frequency. The higher the value, the more importance it carries for its residents. Foursquare check-in information is available on the individual pages for places online, as shown in Figure 3. This data can also be viewed through the Foursquare application on iPhone or Android.



Figure 3. High Falls page in web-based interface of Foursquare.

A second metric for public spaces is found by calculating the number of Geocaches that are present on a site. By using the Geocaching website, we will count the number of geocaches there are in a park and multiply that by their number of "happy" visits.

In addition to Geocaches, tagged Instagram photos will be used to measure social trust in public places. With over 100 million users, Instagram is a growing

online community (Costine 2013). Thousands of photos are shared daily, many of them public, and many of them tagged to their location. For this article, I chose to find the percentage of photos that were geo-location tagged versus tagged for their subject matter, such as "#highfalls" or "#ROC". My theory is that people who trust their community are more willing to share the GPS tag with their photograph. In order to find these images, I will use Instamap, which is an independent application that aggregates Instagram photos and displays them on maps. See Figure 4 for an image of its interface.

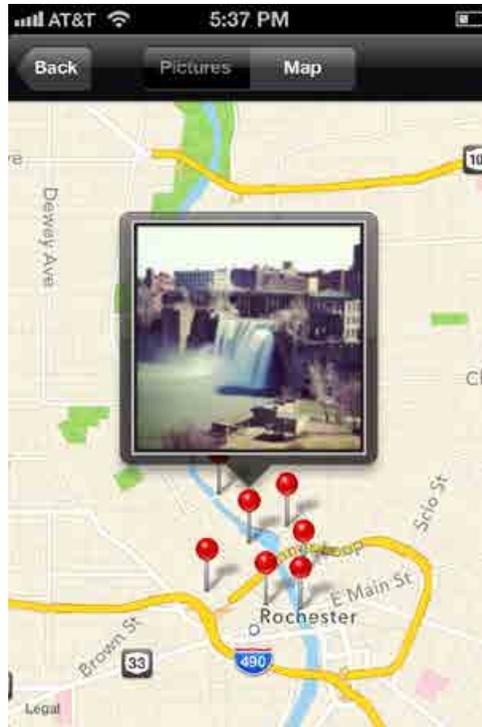


Figure 4. Map of High Falls in Instamap, showing pictures as tagged to their location.

### Public Spaces

Site	FourSquare Check-Ins	FourSquare Unique Visitors	Geocache on Site	Logged "Happy" Visits	Tagged Instagram Photos	Geotagged Photos	Total Score
Pont De Rennes Bridge (High Falls Bridge)	375	233	0	0	338	78	626.61
High Falls Visitor Center	69	62	0	0	0	0	76.79
High Falls (Landmark)	656	301	2	566	338	78	1,735.76
Frontier Field	5,764	2,712	1	342	0	2	12,592.63
High Falls Bulton Company (Museum)	491	25	0	0	0	0	9,653.24

Figure 5. Table of Results for Public Spaces

In evaluating public spaces in High Falls, it was easy to see how influential Frontier Field(12,592.63) is to the whole city. This baseball field brings people to the district for a good social activity that boosts city pride. Additionally, High Falls(1,735.76) ranked well because it is attracting to tourists and locals alike. The high number of Instagram photos that were taken here show that people enjoy these waterfalls. However, It was disappointing to find that the High Falls Visitor Center, a small museum and tourist shop, had scored so low in the calculations. However, this is a museum that benefits tourists more than locals, as it is posed to teach its visitors the history of High Falls.

### Businesses

In order to measure a business’s influence on social capital, we will measure its number of repeat visitors, which equates to local support. Using Foursquare, we will measure the number of check-ins over unique visitors, where the higher the value the more local support is present. The closer to 1 it is, the more clout it has for those outside the neighborhood. To supplement this evaluation, Yelp reviews in relation to their number of reviewers will be used. In this case, the higher the rating and the more reviews it has, the greater it is in influence.

$$\left[ \text{FourSquare Check-Ins} \times \frac{\text{FourSquare Check-Ins}}{\text{Unique Visitors}} \right] + \left[ \text{Yelp Rating} \times \# \text{ of Yelp Reviews} \right] = \text{Business Score}$$

Figure 6. Formula design for calculating positive influence of businesses.

### Businesses

Site	FourSquare Check-Ins	FourSquare Unique Visitors	Yelp Rating	Number of Yelp Reviewers	Total Score
Fina's Cafe & Bakery 299 Mill St.	790	116	4	1	5,384.17
Genesee Brew House 25 Cataract St.	927	609	4	11	1,455.05
Samba Cafe 350 State St.	94	42	4	6	234.38
Spin Cafe 229 Mill St.	124	38	-	-	404.63
Max at High Falls 60 Browns Race	225	152	-	-	333.06
Roar Nightclub 233 Mill St.	216	138	-	-	338.09
High Falls Garage 240 State St.	736	92	-	-	5,888
Eastman Kodak 343 State St.	4,104	226	1.5	3	74,530.23
WXXI 280 State St.	659	143	4	2	3,044.93
Stantec 61 Commercial St.	11	9	4	1	17.44
92.5 WBEE 70 Commercial St.	285	21	-	-	3,867.86
DiPisa Old World Submarines 362 State St.	435	93	-	-	2,034.68
Carestream Health 150 Verona St.	545	32	-	-	9,282.03

Figure 7. Table of Results for Businesses

In considering the businesses in High Falls, there was a great range of results. Eastman Kodak (75,530.23) has a significant effect on Rochester, as one would expect from a large employer in this city. One surprising outcome was the scoring of local businesses, such as Fina's Cafe(5,384.17) and Carestream Health(9,282.03). Largely due their average rates of visitor return from Foursquare, these businesses show signs of local support as one would hope to find in a neighborhood with good social health.

### Community Organizations

Foursquare check-ins will be used to measure the digital presence of these organizations. As in the case of evaluating public spaces, we will value reoccurring visitors more than unique visitors, thus measuring the total number of check-ins over the number of visitors. To supplement this measurement, we will also use Facebook Likes to understand potential gaps that may lie between check-ins and actual communal participation on a regular basis.

$$\left[ \text{FourSquare Check-Ins} \times \frac{\text{FourSquare Check-Ins}}{\text{Unique Visitors}} \right] + \text{Facebook Likes} = \text{Community Organization Score}$$

Figure 8. Formula design for calculating positive influence of community organizations.

### Community Organizations

Site	FourSquare Check-Ins	FourSquare Unique Visitors	Facebook Likes	Total Score
Greater Rochester Health Foundation 150 State St.	83	10	7	695.9
Our Lady of Victory- St. Joseph's Church 210 Pleasant St.	14	9	84	105.78
Iglesia de Restauracion y Avivamiento 126 White St.	38	2	449	1.171
Salem United Church of Christ 60 Bittner St.	10	9	22	33.1
Downtown United Presbyterian 121 Fitzhugh St.	504	70	15	3,643.8
Spiritus Christi Church 121 Fitzhugh St.	31	17	730	786.53
Center for Disabilities Rights 497 State St.	124	19	5,088	5,897.26
Rochester Animal Services 184 Verona St.	165	95	38	324.58
Rochester Roots 121 Fitzhugh St.	-	-	59	59
Hochestein School of Music and Dance 50 Plymouth Ave.	713	253	1,175	3,181.55

Figure 9. Table of Results for Community Organizations

Surprisingly, these organizations are not popular in FourSquare and Facebook. I had hoped to see more results like the Center for Disabilities Rights (5,897.25), which has an extensive outreach to the city. However, there may be several reasons why this analysis gave low results. One idea is that the negative activity within this district has hurt the community's willingness to participate in non-profits and religious institutions. My second thought is that the organizations with low scores do not embrace social media to engage their members. However, we cannot truly know why there are so many low results without a survey.

### Measuring the Negative

#### Crime

CrimeReport.com has logged police reports in their location of occurrence in addition to the type of crime: Theft, Breaking and Entering, Robbery, Assault, or Homicide. We will rate events from the last six months on a scale of 5 to 10, considering that there is no neutral kind of crime, and multiply that grade by the number of crime events within a half a mile radius.

$$\left[ \frac{1}{2} \text{mi Radius} \times \text{Rating of Severity} \right] = \text{Crime Score}$$

Figure 10. Formula design for calculating negative influence of criminal activity.

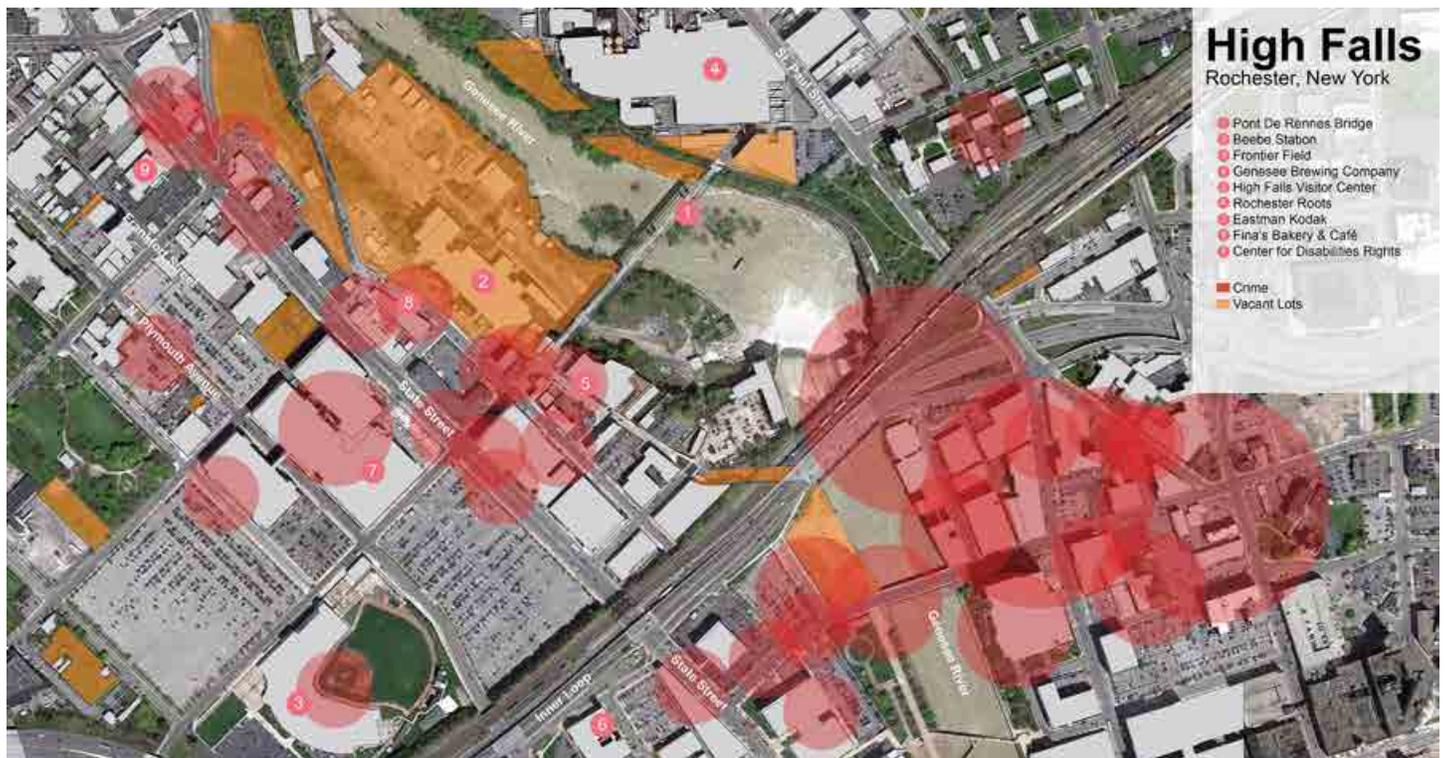


Figure 11. Map of crime scores and vacant lots in High Falls.

The majority of crime activity in this district was crime and theft. Luckily, there have not been homicides here in the last six months. However, there is significant reoccurring crime in several locations, as shown by the larger red fields in Figure 11. I believe the overlaps of crime is affecting low scores for many positive influencers in the city.

### Vacant Lots

Using data from the City Planning office in Rochester, we can see all vacant properties with their zoned use, and supplement that data with land use information. We will consider the quality of vacant lots on a scale of 1 to 10. 10 being an industrial lot in need of remediation, and 1 being a green lot in close proximity to residential development. The rationale behind these values is that a lot rated at 1 will have greater ease in being sold and becoming beneficial to the community, while a 10 will require great investment and have a slow return to positive influence. Due to its correlation with crime, vacant residential parcels will be considered a 5 on our scale of vacant lot quality. However, if it is a home that has visible signs of looting or graffiti it will be scaled at a 7 for proof of prior criminal activity.

$$\left[ \frac{\text{\# in 1/2mi Radius}}{\text{\# in City}} \times 100 \right] + \text{Rating of Severity} = \text{Vacant Lot Score}$$

Figure 12. Formula design for calculating negative influence of vacant lots.

From Rochester's City Planning website, I found that there are currently 2,100 vacant lots that the city owns and maintains on a regular basis. The majority of vacant lots in High Falls are zoned for either commercial or industrial use. And in collecting data, I also found the property values, which have a great range. For example, 556 N. Plymouth Avenue is a sliver of land that can be bought for \$1,700. With green grass, this lot would be a great investment. However, on its backside, 99 Frankfort Street is approximately the same size and zoned for industrial use. Currently, it is a paved alley that could be used by the distribution facilities next door. This variety of typologies is interesting because it means that Rochester has a great opportunity to redevelop its center for new industries and businesses. But for now, these lots are unpopulated and bringing down the city's economy.

### Vacant Lots

Site	Land Use	Property Value	Ecological Rating	# within 1/2 mile radius	Total Score
54 Brown St.	Commercial	\$48,000	1	17	0.81
395 State St.	Commercial	\$26,500	1	17	0.81
405 State St.	Commercial	\$14,500	1	17	0.81
407 State St.	Commercial	\$59,500	1	17	0.81
100 Platt St.	Electric and Gas	\$4,427,000	10	18	8.57
100 Falls St.	Industrial	\$24,900	10	16	7.62
447 N. Plymouth Ave.	Commercial	\$4,000	4	13	2.47
99 Frankfort St.	Industrial	\$3,500	8	11	4.19
556 N. Plymouth Ave.	Commercial	\$1,700	1	11	0.01
196 Smith St.	Commercial	\$227,000	8	15	5.71
199 Brown St.	Industrial	\$50,000	1	11	0.52
54 Warehouse St.	Industrial	\$55,000	1	7	0.33
54 Andrews St.	Electrical	\$400,000	8	6	2.3
60 Platt St.	Industrial	\$30,000	6	15	4.28
453 St. Paul St.	Public Utility	\$5,000	6	14	4.00
449 St. Paul St.	Industrial	\$28,800	6	14	4.00
25 Cataract St.	Manufacturing	\$693,200	10	15	7.14
13 Cataract St.	Parking Lot	\$60,000	8	11	4.19
250 Central Ave.	Industrial	\$25,000	8	6	2.29
45 Commercial St.	Industrial	\$118,000	6	8	2.29

Figure 13. Table of results for vacant lot evaluation.

### Conclusion

The results of this study show that there is a potential for social media to be used for the quantification of social capital. However, it does not provide a full representation of the participation that occurs within these communities. For example, there were only a small number of businesses in High Falls that had reviews in Yelp. In some cases, these businesses do not exist on the database, which leaves little opportunity for user discovery. Another conflict with this study was the low transference of community involvement into social media participation. One theory for this is that the active members of these organizations are not aware of these applications, or choose not to use them.

Before completing this analysis, I sent out a small survey to community organizations in High Falls, and received a response from Rochester Roots, which is a growing non-profit of garden-based educational programming for Rochester. The formula I designed for non-profits showed its absence in the FourSquare database, thus damaging its score. Despite its low score, Rochester Roots uses Facebook, Twitter, and LinkedIn to stay in touch with its members. With 325 active members in 2012, up from 300 in 2011, this educational program does exist and does make an impact in the health of citizens. A future model for this formula may come to include other applications, but organizations like Rochester Roots may also benefit from expanding their digital presence and using more social media applications.

Looking back at Putnam's theory for building and bridging capital, I find that certain digital applications, such as Foursquare, Yelp, and Geocaching, are prototypical builders of bridging capital. They take people who don't know each other and give them an opportunity to connect over shared experiences. However, in order to fully understand the social infrastructure of a city, we must also be able to quantify bonding capital. It is the type of interaction that sustains communal trust and mutual cooperation. And sadly, this analysis of using social media data leaves a gap. In order to see bonding capital, we may need to look to other digital applications, or develop new ones that require less investment of the users.

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## Bordervilles

Moderated by Dietmar Offenhuber, MIT

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**CHRISTO DE KLERK**

Project Borders — Measuring Perceptions of Everyday Border Crossings  
Through Participatory Research

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**ERIK LEAHY AND BRIAN KELLY**

Into the Seam: The Architecture of Boundary

## PROJECT BORDERS — MEASURING PERCEPTIONS OF EVERYDAY BORDER CROSSINGS

**CHRISTO DE KLERK**

projectwith.us

### **Abstract**

The transformation of personal computing from the desktop to the mobile device is taking place. Attending this transformation is an interest in location as a function of the mobile devices and social networks. Project Borders is a design research project that explores the potential for identifying with the boundaries between places and to assess the measurable influence of self-tracking the crossing of these borders. Employing a variation of the experience sampling method and participatory action research, the project invites smartphone users to track their perceptions of personal emotions toward the thresholds, borders, boundaries crossed in everyday life.

### **1 Introduction**

Project Borders explores the possibility of a service based approach to redefining the basemap and of foregrounding transgressive rather than transactional behaviors in computer mediated environments. Instead of emphasizing the center coordinate that defines a place, it considers the perimeter by shifting the self-identifying action of location-based social networks from the “check-in” to the “crossing-over”. Using an iPhone app, participants are invited to log their border crossings and to annotate it with photographs, stories, and quantified perceptions.

### **2 Concept**

The conceptual framework for this project rests upon an inquiry into the locative function of mobile media and location-based social networks and a review of the security function of location technology in ubiquitous computing. The conceptual framework is rounded out with a review of several dislocative interventions that critically foreground the technological supports of social and geopolitical borders.

#### **2.1 Locative Function**

Services such as Facebook, Foursquare, and Yelp, aim to make the experience of “checking-in” at a location rewarding for users and sales-generating for brick and mortar businesses. Google Maps brings together in the wayfinding experience the clarity of direction with advertising relevant to the user’s situated context. This application of geographic coordinates to contextualize the delivery of measurable, online advertising influences the way we navigate and identify with the physical and built environments.

While these commercial applications focus on delivering advertising, smartphones are being used to operationalize research aimed at understanding the relationship of location to happiness.

Mappiness by George MacKerron and Susana Mourato is a research app for the iPhone designed to “better understand how people’s feelings are affected by features of their current environment—things like air pollution, noise, and green spaces” in the United Kingdom (MacKerron and Mourato 2011). The app notifies users to post perceptions of their present location through a series of questions. By aligning the mission of the project with a corresponding “know thyself” incentive, Mappiness motivates prolonged engagement with its research subjects.

In addition to these commercial and research applications of location-based services is the expanding field of personal informatics. These apps generally focus on tracking health, fitness, and spending activities. A key feature is the function of the user’s location in rendering information meaningful. As with the commercial and research apps, the logged locations are identified as geo-coordinated spaces and interpreted with place names.

Most of these apps are concerned with a notion of place that recalls James Gibson’s definition in his theory of affordances. “A place is not an object with definite boundaries but a region,” he writes (Gibson 1986). For the geolocated place, the region is a variable proximity to a geographic coordinate. It is the X in the middle that defines it, thereby borrowing from the military origins of the global positioning system, aiding in the location and lock of the target object.

Behaviors and perceptions are conditioned by the affordance of a place. While the terrestrial environment avails a dense assortment of places for behaviors, the mediation of the environment through a location-based service conditions space with a particular kind of place open to a limited range of activities. Gibson gives the example of the hiding place, the place that makes possible concealment of the body. Location-based services affords the concealment of places, in particular, the concealment of those places that cannot be meaningfully acted upon. Walls and fences afford particular kinds of behaviors, for example: climbing-over, ducking-under, and breaking-through. These behaviors are excluded from a conception of place defined by a middling coordinate or Google’s big red pin. Where “check-in” and transaction are afforded, borders are concealed.

## **2.2 Ubiquitous Borders**

While many borders are becoming less visible, their capacity to regulate and exclude strengthens. Invisible borders allocate resources and distinguish between here and there. The very name of the “cellular phone” system alludes to some threshold that is crossed. With fewer dropped calls, the seams of those invisible borders are erased. In contrast, the visible borders between nations are gaining more attention as key sites of social and economic insecurity. There is both a sense that a perimeter must be secured through the construction of walls and the performance of security rituals, but also that this action protects some deep and undivided spatial interior - the homeland. Yet, as Stephen Graham points out in *Cities Under Siege*, the locus of the post-9/11 security authority shifts from the discrete, visible borders between nations to the ubiquitous, invisible borders of everyday life. The “blurring between international borders and urban/local borders” means the security of groups of people and modes of circulation take precedence over protection of the community and its territory (Graham 2011). A “multiplicity of control points” along “key lines of circulation and key geographies of wealth and power” delimit a multiplicity of thresholds that usurp inside/outside with a technocratic system of risk-management.

With bodies and goods increasingly tracked, monitored, surveilled the friction of encounter at national borders are supplemented with a proliferation of concealed thresholds where transgression across the field is constantly assessed. The security camera monitoring for suspicious behavior lets us through. The private security guard in the park or privately-owned public space guards against unacceptable behavior. "Electronic systems blend sensors, databases and communications networks," says Graham to automatically identify, assess, and isolate "risky" movements. The invisible city masks the ubiquity of borders with an illusion of effortless flow in transmission, transportation, and transaction.

### **2.3 Dislocative Function**

The nodes and edges that comprise the invisible city have in recent years gained attention as urbanists, media theorists, and artists have taken interest in the materiality of information communication technology (ICT). Through annotation, augmentation, and intervention these invisible infrastructures of surveillance and telecommunication are foregrounded. While many of these projects simply reveal invisible infrastructures, others confront, challenge, or interrupt the geographies of power. These projects can be distinguished by their dislocative function - interrupting or repurposing location services to interrogate the basemap and its supporting ideology.

The Transborder Immigrant Tool by Ricardo Dominguez is a "disturbance art project" that involves supplying migrants with a wayfinding device to navigate a successful undocumented crossing of the United States and Mexico border (Cardenas et al. 2009). The project exploits an affordance of cellular and satellite navigation systems that deliver location services to cellphones indiscriminately. While the intervention was aimed at drawing attention to the life-threatening conditions of undocumented crossings, media attention arguably strengthened antagonism to policy reform.

Boundary Functions by Scott Snibbe is an interactive-environment where lines on a platform dynamically alter to define the spaces between participants standing across each other (Snibbe 1998). As more individuals congregate within the space, more lines are drawn. Boundary Functions is a poetic reminder of the essential role borders play in a conception of space. While affirming that difference takes spatial dimension, the work emphasizes the playful negotiation of those differences. Holding hands erases dividing lines.

Julian Oliver's Border Bumping draws attention to the dependence of national borders on ICT transmissions. Described as "a work of dislocative media", Border Bumping reveals overlapping cellular networks as an already "disruptive force" (Oliver 2012). Users are invited to participate in researching where cellular network signals cross borders - often well after the official political boundary. Users activate a tracking function on the Android-based application to record the nationality of the cellular signal received along a border. With the data collected, new maps are generated to reveal where borders are "bumped" by cellular signals.

Both the Transborder Immigrant Tool and Boundary Functions present critical countergeographies that challenge the static conception of national borders. The borderland imagined by the Transborder Immigrant Tool is of a space for technological and cultural lending: of resources, safe passage, and sanction. Boundary Functions allows boundaries to be negotiated as if a seamless

part of cultural expression. The borders projected on the floors are representations of cross-border exchange. Border Bumping adds a participatory component to these critical practices. The data set developed renders maps where the fixity of the national border gives way to the flux of hertzian space experienced by those that dwell in the borderlands.

In *Redefining the Basemap*, Alison Sant writes: "Although many collaborative mapping projects undermine their own base maps by layering them with collectively defined concepts of space, including participants' emotions, itineraries and memories, these annotations are inextricably linked to the predefined foundations of the map they overlay" (Sant 2004). Those predefined foundations are also shifting. Whether served by Google Maps or Open Street Maps, the basemap has become a service continuously modified and updated. The device for reading these maps too are constantly transforming. In this ever changing terrain, the occasion of the locative or dislocative media intervention makes service-level, basemap interventions possible.

While the basemap is in flux, it is the captured rhythms of urban life that seems stable. "Is it possible to repopulate the map to emphasize the rhythms of urban life rather than just the spaces in which they occur?," asks Sant. Does the "check-in" condition what can be understood as rhythms? The metaphor of the check-in suggests a social practice of continuous interiors, like checking-in at a hotel or for a flight. This is reflected in the kinds of locations that are shared: generally restaurants, shops, concert venues - places of social gathering and commercial transaction. The rhythms aggregated from individual declarations of self-identification through the "check-in" stabilize identities in commercial transaction.

In *Freedom of the Migrant*, Villem Flusser argues that the "act of self-identification constantly throws one into crisis, because self-identification requires one to differentiate oneself from others, to discriminate against others" (Flusser 2003). The current practice of self-identification secures against this crisis as long as the social practice is that of a continuous movement through interior spaces. The movement within hertzian space is a sheltered transition between places as a series of interiors.

Recognizing that the basemap is a service and the domestication of self-identification, the challenge becomes twofold, to affect service-level changes and to restore a sense of the spatial dimension in mobile-mediated self-identification.

### **3 Process**

The project proceeds under the function of a research project. While the template is the experience sampling method, the development of the app, its categories of measurement and reporting methods, are subject to ad hoc revisions aimed at incentivizing participation.



Figure 1 (Above). Project Borders - App available from Apple's App Store.

Research is conducted through a combination of in-app polling and external feedback. The in-app polling takes place whenever a user opens the app to discover the borders that they have crossed since their last review of the app (Figure 1). Participants may either be notified when they have crossed a border or be reminded at regular intervals to measure the last border they have crossed. Upon establishing that the user has crossed a border, the app prompts the user with a set of questions to gauge their perception of a boundary crossed. Responses are tabulated and stored within the app and also uploaded anonymously to the Project Border's database.

### 3.1 Categories

The set of categories were designed in collaboration with Marcus Haraldsson in his graduate thesis work for Columbia University's School of Journalism. Together we developed a method and a set of questions which Haraldsson used in his research comparing the everyday borders of five immigrants living in Queens. Participants were asked to draw mind-maps of the local and global borders they crossed and to take photos of those borders. Through several interviews, Haraldsson worked with the participants to transform their border stories and media content into a co-developed nonlinear narrative. The present categories represent common features of the Queens project participants' borders.

Figure 2 (Left). List of questions asked of participant in the Project Borders App.

The categories can be unfolded along three different senses of the border as object. First, we can consider the border as an object revealed to the senses. Second, as an object that opposes or obstructs. And third, we can think of the object or goal of the border.

Using a sliding input, the user records the appearance of the border. Each input is recorded as a numerical value. The participant slides the input between visible-invisible, important-unimportant, and natural-artificial. These categories capture the sense of the border as an object, i.e. the border as a revealed to the senses.

The second set of questions asks the participant to measure what they endured by transgressing the border. A certain amount of friction is involved in crossing a border. This friction of the border is expressed in a relative sense of duration in time, cost of money, and measure of risk.

Finally the purpose of the border is captured in the production of a digital photograph, textual description, or positive experience. Here, instead of defining the purpose of the border by its administrative function, the purpose is its worth as a cultural artifact, as a place that makes nice photographs and as a positive experience.

An additional category that escapes object classification at this point is the location of the border crossings. While geo-fencing functionality will solve this, the shapes of iPhone geo-fences are currently limited to scaled radii from a geographic point. The present design attempts to strike a balance between the ideal of constant monitoring for geopolitical border crossings and what participants perceive and desire to log as a spatial border.

### 3.2 Observations

Notifications and an updated interface came with the launch of the iPhone app through the Apple App Store on September 11, 2012. Between September and December of 2012, there have been 55 unique downloads of the app and over 300 borders crossed.



*Figure 3 (Left). A "Heavy" border. Photograph taken by participant through the app on Sept 13, 2012.*

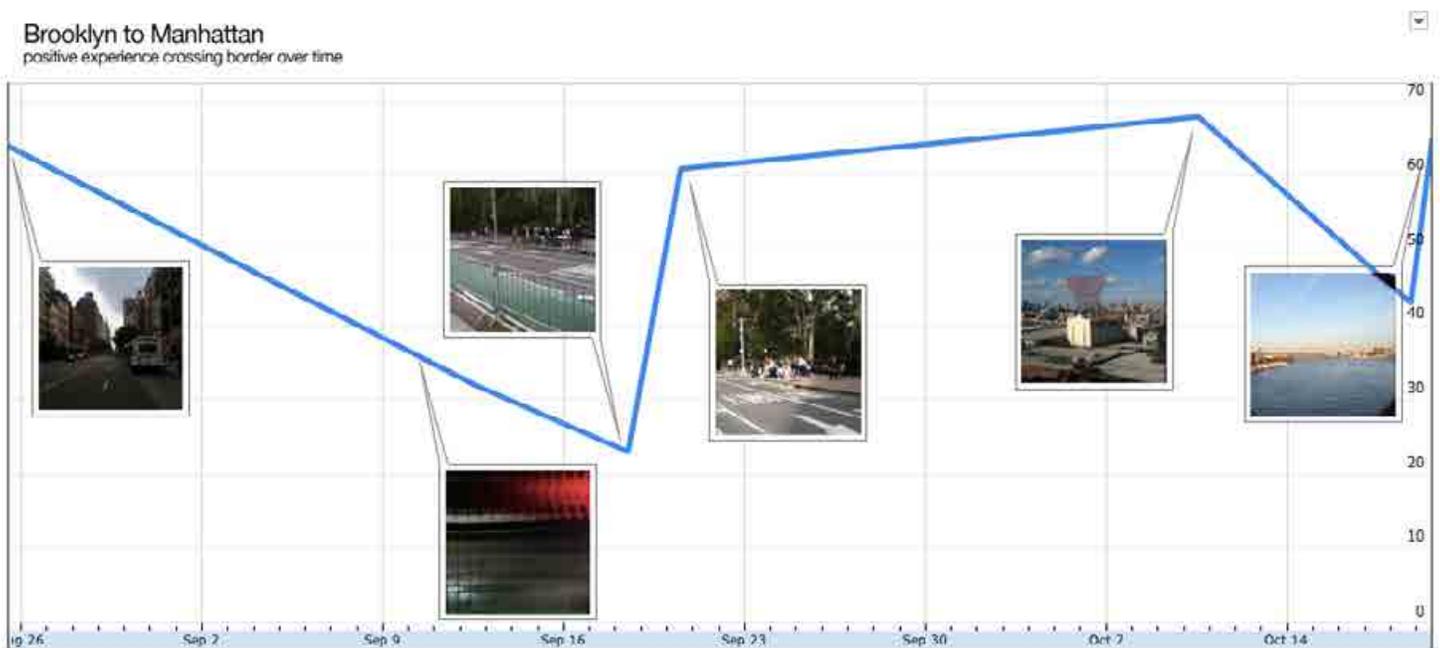
General observations about how participants engage with the app come from aggregating and sorting data inputs. Borders can be sorted by category. For example, the least visible borders ranked by participants include Amal to Bengtsfors, past to beginning, Greenpoint to Williamsburg, Palm Springs to Seattle. The most visible include Jordan to Syria, Amman to Dead Sea, "resort conference freedom" to "domestic responsibilities", and town to farmland. Comparing the least and most visible borders can raise questions or ideas to influence future designs. Directly after logging the invisible Palms Springs to Seattle border, the participant added the visible "resort conference freedom"

to “domestic responsibilities” border. This double crossing is represented by a single photograph (Figure 3): a barren rocky landscape as viewed from an airplane window.

At this point, only a few borders were crossed more than once by participants. The most frequently crossed borders is one that I have been crossing since August 2012, the Brooklyn-Manhattan border.

As with the previous samples, the digital photographs seem to foreground a mode of transportation. Although the East River might be the most obvious representation of the border between Brooklyn and Manhattan, only one photograph captures it. The rest of the photos are of streets, subway tiles, an elevated view of Brooklyn with Manhattan in the background.

Figure 4. Brooklyn to Manhattan - “Positive” experiences crossing border over time.



At the center of the photograph for the least positive experience is a police fence (Figure 5). The fence appeared to be part of a coordinated system of crowd control erected for the #S17 Occupy events. I encountered this fence on my way out of the subway in Manhattan coming from Brooklyn. Although I placed this security apparatus as the line between Brooklyn and Manhattan, it strikes me now as a poorly apprehended division between the two boroughs - for clearly the security apparatus is the same in both places. Yet, in the moment, I was shocked by the difference between my image of a civil corner of Brooklyn and this image of a police state in Manhattan. The experience seemed contingent on the crossing - this sense of placement upon some boundary between here and there reinforced by a desire to retreat, to return indoors, to cross back over the line to Brooklyn. Later that week, the sight of a small band of resilient activists remained while the fences were removed. The line between Brooklyn and Manhattan was still there, but it was the familiar one again - the border I cross without significant friction.

## **Conclusion**

We come together over borders and with stories about our crossings. While ubiquitous computing supports a sense of frictionless movement through undivided interiors, the thresholds will remain tense with border stories.

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## INTO THE SEAM: THE ARCHITECTURE OF BOUNDARY

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### **Abstract**

The ongoing conflict between the State of Israel and the Occupied Palestinian Territories is representative of a trend becoming more common in a modern, media-connected era: the physical walling off of the 'first world' from the 'third world.' This is contrasted by a seamless virtual media connection across that same line. Media simultaneously accentuates this divide while moving freely from one side to the other. Examples of this condition include the US-Mexico border, the 38th Parallel, the economic gaps surviving the Iron Curtain, the subdivision of the Balkans, and the division and nationalization of the Indian Subcontinent. These border zones reflect cultural, political, and economic divides. Recently, however, through a quasi-infrastructureal manifestation, many of these borders have become physicalized through the building of walls of various types resulting in a breakdown of interaction and communication across these volatile divides. The intent of this project is to investigate the role of architecture at these barriers as a mediating zone across economic, political, and conflict divides.

Israel represents a unique and volatile manifestation of this condition. Since its formation, the borders of Israel have been in a near-constant state of flux. The current status of the border, since the 1967 War, consists of a subtly shifting zone of land defining the seam between what is the State of Israel and the Occupied Palestinian Territories. The primary tool of this seam zone is an 8-meter high concrete barrier, the West Bank Barrier Wall. The wall represents a massive infrastructure undertaking for the purpose of protection and control aimed at preventing terrorist bombers from entering Israel.

However, the real effect of the physical presence of the wall is a situation of erasure, a removal of context and interaction. For the controlling government, the wall implies an end of 'civilization' before the unknown wilderness which might exist beyond. This wall is by its nature a non-place within the landscape, a background to the alienated worlds on either side of it, serving no benefit to the continued evolution of the conflict/peace-process. What is needed is a facilitator to create place and path across this divide, to create a possibility for interaction across the seam. This engagement would thereby evolve with the evolution of the Israeli-Palestinian conflict itself. This project proposed a 'third place,' a new space where neither side has a true upper hand: a neutralizer. This new space works into the understanding of strangeness and otherness defined by the philosopher Richard Kearney (Kearney 2005), at once neutralizing and stressing the roles of host and guest, known versus unknown.

How can a conflict evolve and improve without an open and equal dialogue and understanding? This project presented both an architectural proposal and media devices to foster a more robust understanding of the forces at play within the conflict across this critical border zone.

## 1 Walled World

The world is in a state of division. Borderlines are being drawn and increasingly, since the middle of the 20th Century, are physicalized through architecture and infrastructural systems. These physical boundaries represent ethnic, cultural, language, and economic borders. Realized through concrete, steel, and wire fences, these barriers entrench and enforce a status quo and prevent further engagement and dialogue, while dividing the world into the 'haves' and 'have-nots'.

Many of these barriers sit along what is the border between the first world and third world, protecting us from them, the known from the unknown. These borders are heightened spots of violence, armed conflict and illegal immigration. Though the Berlin Wall and the Iron Curtain fell at the end of the century, less publicized but no less physical barriers have appeared with increasing frequency around the globe at these contentious spots with the goal of preventing movement of people, arms, and illegal goods across these borders and the side effect of preventing dialogue, as well.



Figure 1. The West Bank Barrier and the Israeli-Palestinian seam zone, image by author.

## 2 The Conflict and the Seam

The West Bank Barrier is the latest chapter of a narrative that has existed since biblical times. This long term and deeply emotional conflict stems from the numerous varied ethnic and religious groups that have claimed the land of Israel-Palestine as their home and has continued into the modern era. One result of this conflict is a near continuous shifting and redrawing of the borders

between the State of Israel and its neighbors. (Figure 2) The 1948 Armistice line, the result of the first Arab-Israeli war and known as the green line, is still the internationally accepted border between the State of Israel and Palestine. The 1967 war brought significant border change as the West Bank and Gaza Strip became militarily controlled and occupied by Israel. Claims of conquest and the claims of international law have laid the foundation for future conflicts of territorial control.

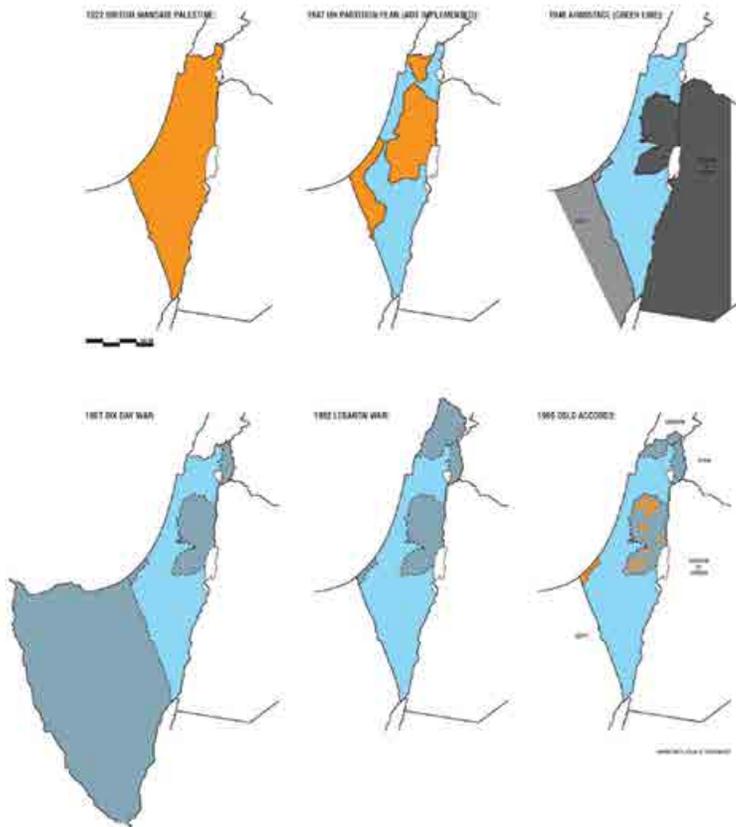


Figure 2. The major shifts of the Israeli border, image by author.

Within this zone of conflicting realities (green-line and occupation) the West Bank Separation Barrier (Figure 1) began construction in 2003 under Israeli Defense Force direction with the goal of protecting Israel from Palestinian suicide bombings in the wake of the 2000-2005 Palestinian uprising, the Second Intifada. The projected path of the barrier has seen numerous revisions due to lobbying efforts from both sides, but remains situated primarily inside the Palestinian West Bank. While the defined green line between Israel and Palestine is 196 miles long, the actual path of the barrier runs 437 miles as it snakes between Israeli and Palestinian lands, the results of litigation to include or exclude communities from the seam zone. The average width of the barrier zone, which runs along the wall

length, is 200 ft. and consists of a series of surveillance and monitoring equipment. The actual manifestation of the wall itself is composed of two systems: an electronically monitored fence which exists primarily in rural areas and a prefabricated concrete barrier which exists primarily in heavily urbanized areas and has become the primary face of the antagonism of the occupation. The concrete barrier runs for over 10% of the length of the seam zone at a height of 26 feet, essentially cutting off all contact or engagement across its length.

Architecture, represented as an infrastructure of occupation and oppression, has become the background of daily life in the West Bank, an ever-present reminder of control, dominance, repression and occupation. The wall represents a system of separation and erasure through shock and awe. How can this physical manifestation and power be subverted without delving further towards conflict? Political theorist Zeev Jabotinsky stated that the Arabs would resolve to prevent the establishment of Israel. In order to preserve its existence, Israel would require overwhelming military superiority and be prepared to defend itself into perpetuity (Sorkin 2005). This is the foundation of the petrified state and finds itself realized through the wall.

Walls are one of the basic architectural elements and are used to both separate and define space

and usage. Lebbeus Woods offered a distinction between free space (void space that is the typical space of programmatic use) and walls (object space that is the space defining the periphery) (Woods 1996). When the metaphor of Jabotinsky's iron wall (a military defensive stance) became manifest as a physical reality it took the opposite meaning. It suggests that there is no possibility for further engagement and no need for dialogue across the seam. According to Foucault, power and space share a certain relationship, but while architectural form may influence social behavior, buildings do not have inherent politics. Political aims are applied on the architecture through an outside force (Leach 1996). In this case that applied political agenda is the perceived security benefit of the wall and the power struggle of the occupation. The wall was born in politics and serves power.

Admittedly, there is a security element to the wall exhibited through reduced suicide bombings in Israel since the construction of the wall, as well as defining a distinct and real border between Israeli and Palestinian space. Additionally, the wall serves as both a social and economic barrier. All crossing of the seam zone, both personal and economic, is controlled by Israeli military and police and requires permits and passes.

There is a variety of tactics at play within the military occupation of the west bank, tactics that represent control and observation and a significant imbalance of power. Military closures and checkpoints, aerial surveillance, precision strikes, 'gated' communities, bypass roadways, concrete barriers and electric fences. These are the tactics of modern urban control and occupation, tactics the Israeli Defense Force has pioneered in urban combat. Think tanks have been formed studying the work of Deleuze and Guattari's theories of the modern urban experience to incorporate not just into urban warfare, but warfare against the urban (Weizman 2007).

The most often encountered (and loudest yelled) positions on the state of the wall are either that it be removed, responding to a social and economic demand and illegality, or that it must remain, responding to a need for security and control. These two polar scenarios look past the opportunity of the seam zone as a spatial and social definer. There are both costs and benefits to the current situation of the wall. Is there a third potentiality that creates a new space, a space that bridges the divide of the seam and creates a new engagement and opportunity across it?

### **3 On Dialogue**

The conflict between Israel and Palestine is a unique condition of war. It is not an active offensive in the traditional understanding of war and conflict. There is no shifting dynamic of armies massed against each other. Rather, it is a latent conflict that has degenerated into a state of attrition and occupation. Demonstrations of ability and power serve as symbolic reminders from both sides of the others existence. As a system, this realizes itself as a conflict of dialogue.

At its most basic state, a dialogue is an exchange. Two or more sides are involved and something is exchanged, whether it is ideas and opinions or simply a demonstration of existence and ability. These dialogues can be positive, such as a political negotiation for exchanges of territory or an intellectual conference exchanging ideas between Israeli and Palestinian scholars. They can also be negative engagements where every retaliatory rocket or missile strike from either side is a form of dialogue. A Palestinian boy throwing stones at an Israeli soldier while he fires tear gas back is a dialogue between two sides.

These dialogues are not coordinated, tactical responses to necessarily elicit a victory. Rather, they are tools of a conflict of attrition and continuation. The conflict feeds itself. Dialogues precipitate more dialogues and more 'exchange.' Even the act of refusing exchange, in the way of freezing of political negotiations is exchanging a particular message to the other side, and in so doing continues the dialogue.

The West Bank security fence contradicts this idea of a conflict of dialogue. The barrier represents a removal of interaction. It is a blank background that allows for continuity along itself on either side but removes continuity across, between the two sides. Along the wall is a barren zone left emptied of productive use as a sort of buffer zone between the two sides. This seam is not valueless and should not be underestimated. While the wall is a tool of occupation and oppression, the role of a seam or buffer between these two long struggling peoples holds value as a definition of border and distinction.

Past this void zone begins the urbanization of the seam. Towns, villages, settlements, neighborhoods, refugee camps, and military points expand and mimic each other across this void. Over time, this urbanization is certain only to increase. High birthrates among Palestinians and orthodox Jews, as well as an intensive immigration campaign by Israel will lead to future population increases within an extremely limited area of land. One can speculate that this population increase will grow within the cheaper and strategically important land of the seam zone. Tactically, the urbanization along the seam equates to control and supervision of that area and becomes another tool of the conflict of dialogue. This is a future of ultra urbanization in the Holy Land.

This seam zone that exists between Israel and Palestine has the option to remain an empty, abandoned land that reflects the lack of communication and misunderstanding of the current conflict. The seam will become the unused backyard where the edges of society are pushed. This in no way will benefit the situation. A reactivation of dialogue across the seam is necessary for the next step, and hopeful resolution, of the conflict.

#### **4 The Project**

As a speculative design proposal this project proposes the creation of the seam zone to become a new landscape of dialogue, a reflection of the shifts and exchanges of the conflict. Pathways overlap and cross each other, set within an infrastructural landscape. The architecture attempts to establish the framework for the occupation and exchange across the seam.

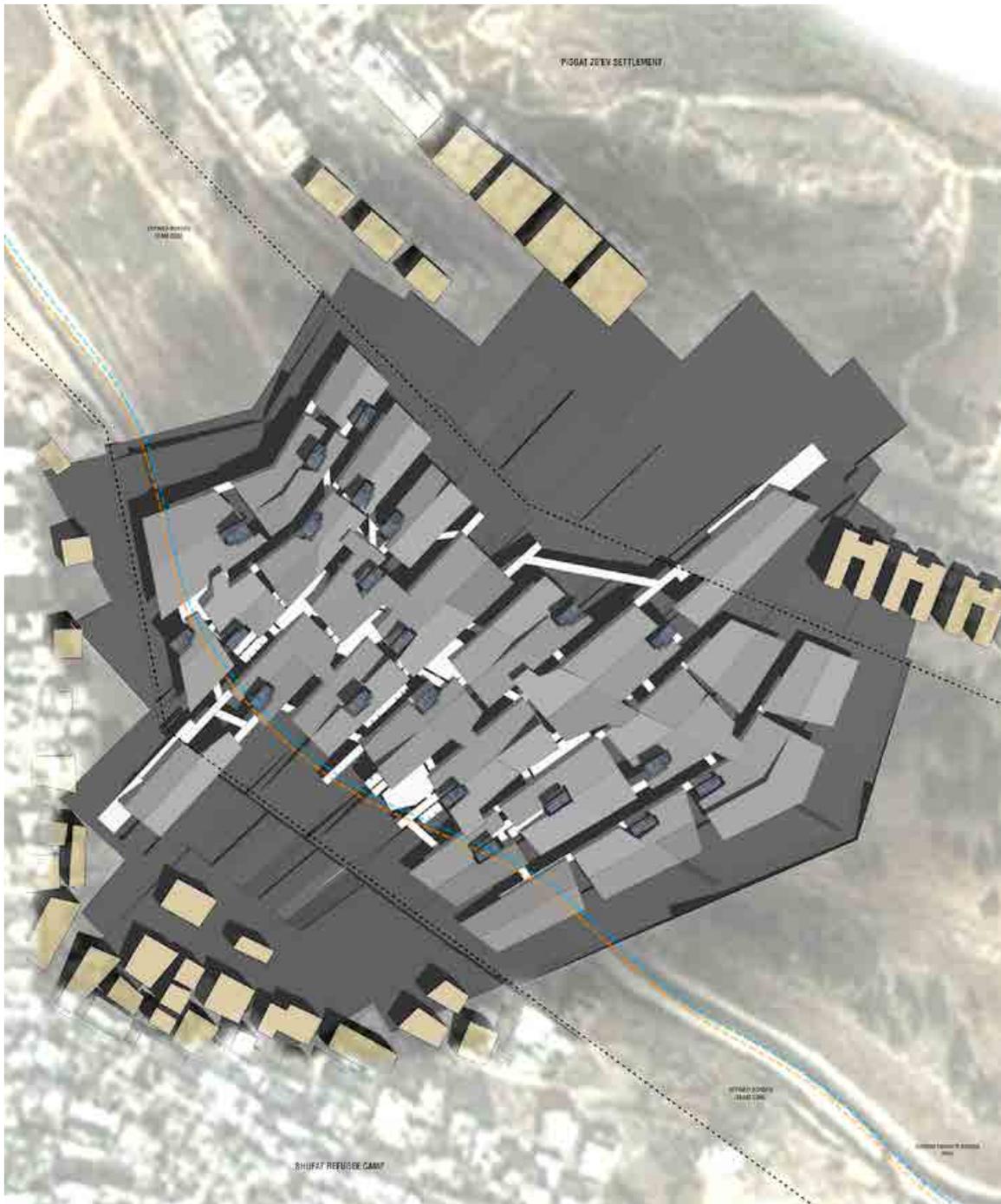


Figure 3. Site plan, facility at the Pisgat Ze'ev - Shufat seam zone, image by author.

The design occupies the natural valley that exists between the Pisgat Ze'ev and Shufat areas outside of Jerusalem. (Figure 3) The facility becomes an extension of the landscape, a functioning extension of the unused ground below it. In the scheme, the existing ground plane is abandoned as a condition of terra sacra, ground set aside from the normal everyday uses of landscape and allegiance to a particular side. This existing ground plane is left inaccessible to both sides, and retained for water drainage retention.

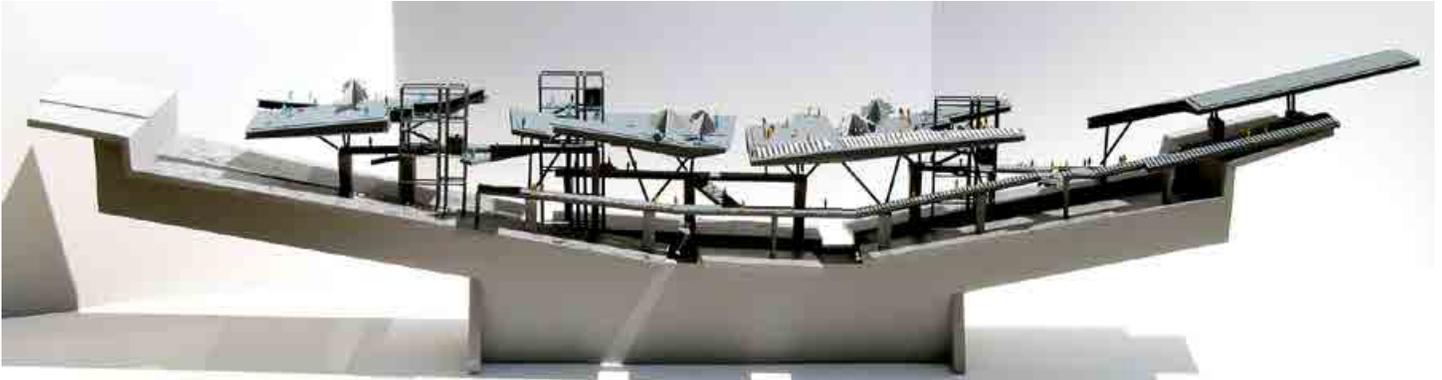


Figure 4. Project model, layered landscape of the seam zone, image by author.

Above the ground plane a series of structures are elevated creating an artificial ground plane within the seam zone. (Figure 4) Each land structure is claimed and connected to one side in an irregular pattern that creates happenstance adjacencies. It is upon these land structures in which active use is returned to the seam, including agricultural cultivation, pasture grazing and public recreation and sport (Figure 5).

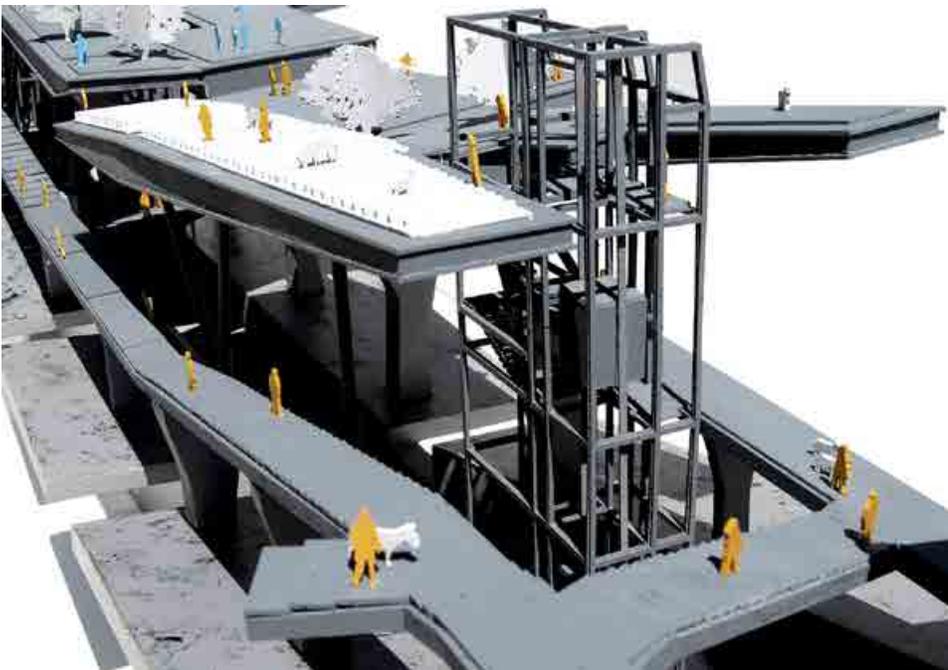


Figure 5. Project model, inhabitation and engagement of the seam zone, image by author.

From each side of the seam a series of circuitous walkways venture into the neutral zone serving as a connecting tissue from the urban fabric on either side to the landforms within the seam. While the walkways offer connection from each side to the landforms they control, the two systems are separate and unconnected. They overlap and bypass each other but never intersect, offering near constant visual connection from one side to the other. The project physicalizes latent conflicts, interactions, and dialogues in an environment representative of the strangeness and uncertainty of the occupation itself.

## **5 Conclusions**

The focus of this project has always been on an exploration of the speculative and the conceptual, critiquing the popular view of a need for a barrier and military control in such a charged and conflicted location. This project was more about asking the question what is architecture's role in this conflict, rather than proposing a solution through built work. Taking inspiration from the design itself, the success of this project hinges on its ability to create a dialogue and interaction and bring awareness to the role of border infrastructures not just in Israel and Palestine, but also around the developing world.

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## Other Urbans: Brazil & Beyond

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## Urban Futures / Mutable Topologies

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### **Abstract**

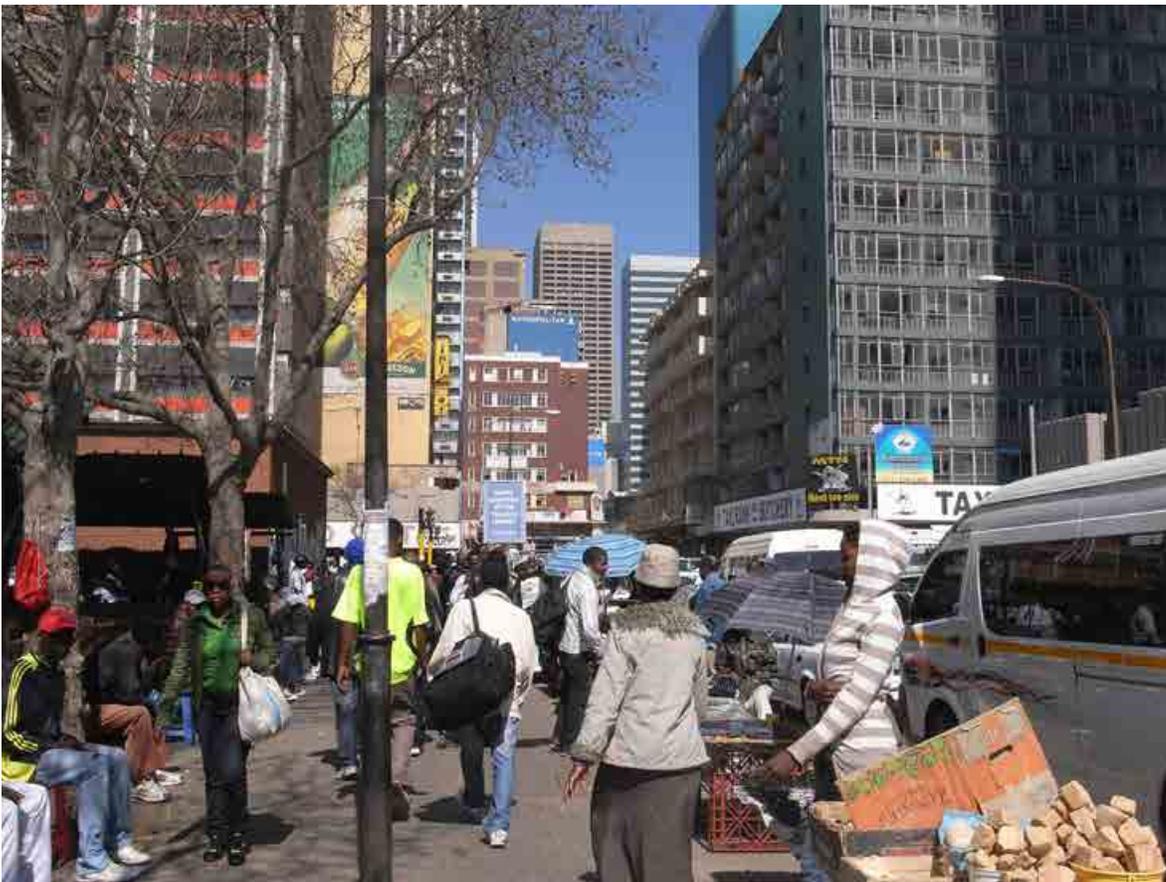
Contemplating the status of African cities, curator Okwui Enwezor writes that “cities in their present context are modern inventions, and as the new electronic pathways that crisscross the globe circulate and readapt images of the modern city, they also produce desire for tourism that fuels new contacts and movements within already clogged global travel circuits, unraveling the strict hegemonic tendencies that have always made it difficult to read the map of spatial difference.” (Enwezor 2002) These sprawling conurbations in all corners of the African continent, like their sister cities in Asia and Latin America, challenge long held dictums about urban processes, infrastructures, and the buildings that define European and American canons on modern urbanism—“unraveling,” as Enwezor astutely observes, “strict hegemonic tendencies.” (Enwezor 2002) The urbanization of the African continent will soon create the largest megacities in world—Cairo in the North, Lagos in the West, Nairobi in the East, and Johannesburg in the South. In our research, the term “city” brackets the spatial boundaries of these urban agglomerations that exceed local, regional and through their diasporas—national boundaries. Official reports and popular media represent African cities “as chaotic and disorderly, and,” according to Enwezor, are “therefore always outside the category of order and modern urban planning and procedures of rational spatial organization.” (Enwezor 2002; Ferguson 2006; Murray 2006; Scott 1999) Social scientists, planners, architects and policy makers impose the binaries—order/disorderly and formal/informal—onto the spatial dynamics of African cities to make sense of their urbanism. However does the binary “first world/third world” make sense when some of the fastest growing markets in mobile and cloud computing are emerging in cities around the African continent; cities for whom technology companies are developing new products—ones subsequently marketed elsewhere in the world? (Andjelkovic 2010; Archambault 2012; Larkin 2008) Global Africa Lab’s research outlined in this paper asks what new methods, such as parametric modeling and data visualization, are necessary to understand the dynamic urbanism these cities present and to “read the map of spatial difference?” What conceptual frameworks of architecture and urbanism do we need in order to study how data, images, people and products circulate via their virtual and physical networks? What can we learn from how these vectors of communication and social media cut through urban boundaries and spatio-temporal discontinuities to conjure a “space of flows?” At the global scale, this space of flows beginning in the early 1990’s gave rise to expansive networks that linked cities and crowned global capitals. One outcome of globalization is that cities around the world became organized hierarchically according to their dominance in advanced services, producer centers and markets. Under these conditions, architecture developed an infrastructural relationship to the making of cities and urbanism became not limited to urban infrastructure but inclusive of spatial and social relationships. From our various studies, we argue that the topology of this new model of urbanism, which is an outcome of a variety of spatial processes in flux, does not upend the African city but rather it provides a reflexive lens through which to critique such flows along with

the power structures, political systems, heterogeneities, and social inequalities embedded in these urban morphologies. It offers a prospect from where architects can speculate on the future of African cities.

Johannesburg, South Africa occupies a geo-location in the space of flows that until near the end of the twentieth century was a place social disjunction, political denial, cultural suppression and global boycott. Modern Johannesburg began as a colonial hub that Dutch colonists built upon the Highveld's frozen rivers of gold, platinum and diamonds, out whose extraction flowed a river of blood and anguish. The formation of the colony, which eventually became a commonwealth and eventually a nation-state, was predicated on the racial segregation and oppression the majority black and "colored" populations. Architect and theorist Lindsay Bremner cogently argues that the state sanctioned and violently enforced system of racial Apartheid "brought together the discursive networks of government, urban planning, public health and urban administration.... Modern town planning principles meant to maintain racial separation were overlaid on the geography and natural features of Gauteng together with the location of industrial zones and vacant lands used to create a spatially discontinuous city and to buffer black from white, rich from poor, urban from suburban and urban from township settlements." (Bremner 1998) Under government direction that employed the knowledge of well-trained experts, Apartheid was planned and executed to shape the nation's landscapes and cities. The fortress modernist commercial and residential towers of the Central Business District, like Skidmore, Owings and Merrill's Carlton Center (1967-74), attest to the wealth generated under such harsh geo-spatial policies of racial oppression and social control. Apartheid's planned racial segregation that deliberately separated the "white city" from the rural "black townships" has become the substrate for today's Post-Apartheid Johannesburg to emerge as a neoliberal hub of global capital and culture. (Mbembe 2002; Murray 2011)

Post-Apartheid Johannesburg's current urban and architectural organization, typical of the disjunctive spaces of many global cities, produces pockets of wealth, so-called formal sectors, that are surrounded by wide swathes of informal dwelling and commerce, with much of the historic racial and economic segregation still intact. In Johannesburg, liberated human ecologies informed by technology, information, globalization and new kinds of flows confront this landscape of gated suburban enclaves, office compounds, fenced in malls, sprawling slums, mine dumps, and abandoned high-rises to create chimera-like topologies. This new topology is punctuated by what we label as "synapses" that shear time from space and shear acceleration from evolution. (Sola-Morales Rubio 1995) These synapses exhibit the capacity of rapid adaptation—across the ground and by way of vertical, and horizontal thresholds of urbanization. Evidence of these synaptic clefts is demonstrated by South Africa's high mobile phone penetration rate—one of the highest in the world at 105% with 51.6 million subscribers. (Africa 2011) Furthermore, 60% of cell phones are WAP (wireless application protocol) enabled that allows 27% of rural users access to the internet through their mobile phones. Eighteen percent of South Africa's nearly 52 million cell phones are smart phone users; overall that equates to a market of 9.5-million consumers. (The Media 2012) Taking advantage of this access, new services such as WIZZIT have been established that utilize the internet and cellphones for banking that taps unbanked and underbanked markets. (Andjelkovic 2010) This statistic of mobile phone penetration proves staggering given that areas of many slum settlements lack landlines and adequate electric power service. While Johannesburg's residents may be connecting in new ways across the city, from Soweto to Sandton, via these new mobile technologies, their connectivity may be interrupted at any moment by intermittent electrical blackouts due to requisite load shedding of an overwhelmed electrical grid.

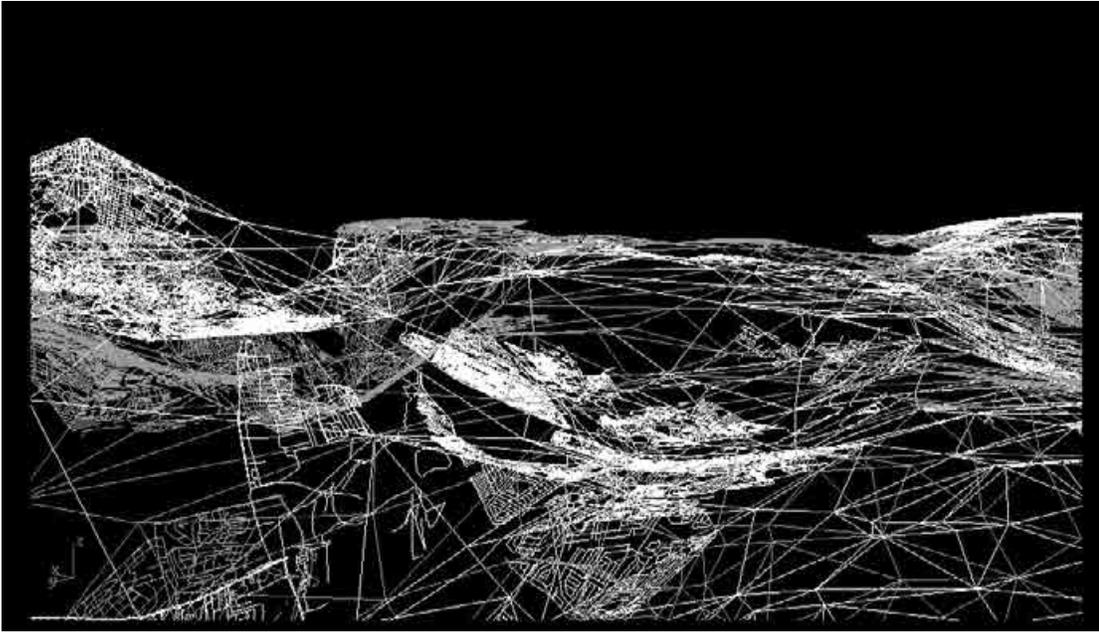
Left in the wake of Apartheid's decades long turbulent vortex, Johannesburg's urban topology reveals a place of extreme disparities, contradictions, and contested terrains that formulate these synaptic clefts within the city's rapid adaptation to globalization and a networked society. Further evidence of these synaptic clefts in the physical networks of the city can be found walking the sidewalks of downtown Johannesburg—the Central Business District—whose byways are cluttered with all manner of exchanges and people making their own way in the economy of mobile phone repair and as phone card and SIM card vendors. (Figure 1) Nearby in the heavily trafficked vertical malls, locals and immigrants patronize the shops of Zimbabwean hairdressers and Angolan tailors that are wedged between internet cafes and Ethiopian coffee shops. On the busy streets of Bree and Jeppe, vendors hawk everything imaginable manufactured in China, India, and the Middle East. Hence, this synaptic topography is defined by a paradox of spatio-socio-temporal sites ruled simultaneously by exuberance, dynamism and improvisation on the one hand, and baseness and obsolescence on the other (the legacies of colonialism, post-colonization, crisis, Apartheid—and now globalization.) (Bremner 2012; Matsipa 2011; Nutall 2008) Examining this emergent urbanism, our research asks how do mobile technologies—by tethering formerly separated locales—allow the multitude (citizens, immigrants, tourists) to craft new spatial and temporal landscapes, spaces latent with agency? Aided by mobile technologies forging new linkages and networks, how might a re-territorialization of Johannesburg's divided urban expanse be occurring?



(Figure 1)

To examine this context, we organized graduate architectural design studios that used advanced computational methods and parametric modeling to research, analyze, and translate the space of flows and topological conditions of Johannesburg's emergent urbanism. (Meredith 2008) The studios asked if architecture is a form of knowledge, the materialization of concepts, then how can we conceive architecture in Johannesburg's spaces of disjunction? Can computational methods and advanced digital modeling enable us to decipher the complexities, transformations, and new types of relations and exchanges, development and subsistence, forms of solidarity and resistance being produced as the South African city adapts to the global restructuring of urban life?

In Global Africa Lab's studio for Spring 2012, titled *Parametri-Cities: Synapse(i)s*, students mined data by using the software Rhino, in conjunction with the parametric modeling plug-in Grasshopper. They learned these techniques in workshops taught by our GAL researcher Carson Smuts. This offered students the possibility to explore parametric and computational design with unprecedented fluidity. Leveraging this capacity, the studio uncovered new strategies for design from the adaptive responses of human ecologies (informed by natural and environmental systems). By using parametric modeling students researched and mapped the visible and invisible pre-liberation and Post-Apartheid networks and flows of this cultural landscape. The preliminary research mapped the networks of capital, labor, information, raw materials, technology, knowledge, human infrastructure, transportation, and trade. The research also engaged the new types of relations and exchanges via mobile phone usage (SMS, transactions, exchanges, etc.) and time-sharing social practices, social media, and social networks (SMS, BBM, Twitter®, MXit, etc.) These new networks collapse virtual topology upon urban topography in order to allow for improvisation, adaptive responses, and the bridging of synaptic clefts to create an increasingly complex heterogeneous and mutable landscape. The analysis by students of a particular flow (sub-sites) within this context entailed not only specifying the numerical values and mathematical relationships, but also uncovering the embedded cultural and social values of the human ecologies of Johannesburg. Research, for example, revealed that while electrical utility customers in impoverished and underserved electrical service areas such as Kliptown or Diepsloot (both in Soweto) can purchase prepaid electricity using a payment app called "Swap Wallet" on their mobile phones, these residents, whose per capita income is only one-third the income of rich white residents in the northern suburb of Sandton, pay nearly double per kilo-watt hour for electricity than their neighbors in the north. Moreover, in 2008 the South African electrical utility company (Eskom) introduced "load-shedding"—periods of planned rolling blackouts on a rotating schedule. (Figure 2) A geo-spatial analysis of the load-shedding schedule for 2011 revealed in one student's research that black, impoverished settlements were the most adversely affected the areas of Johannesburg. Based upon the topological conditions of these temporal and spatial disparities and disjunctions, the student investigated the ways in which new programs for collective events and even domestic rituals could be reconceptualized. The student's proposal for an energy harvesting and distribution facility at Walter Sisulu Square in Kliptown is cross-programmed as a public "living room" that proposed collective food preparation, dining, and public health services.

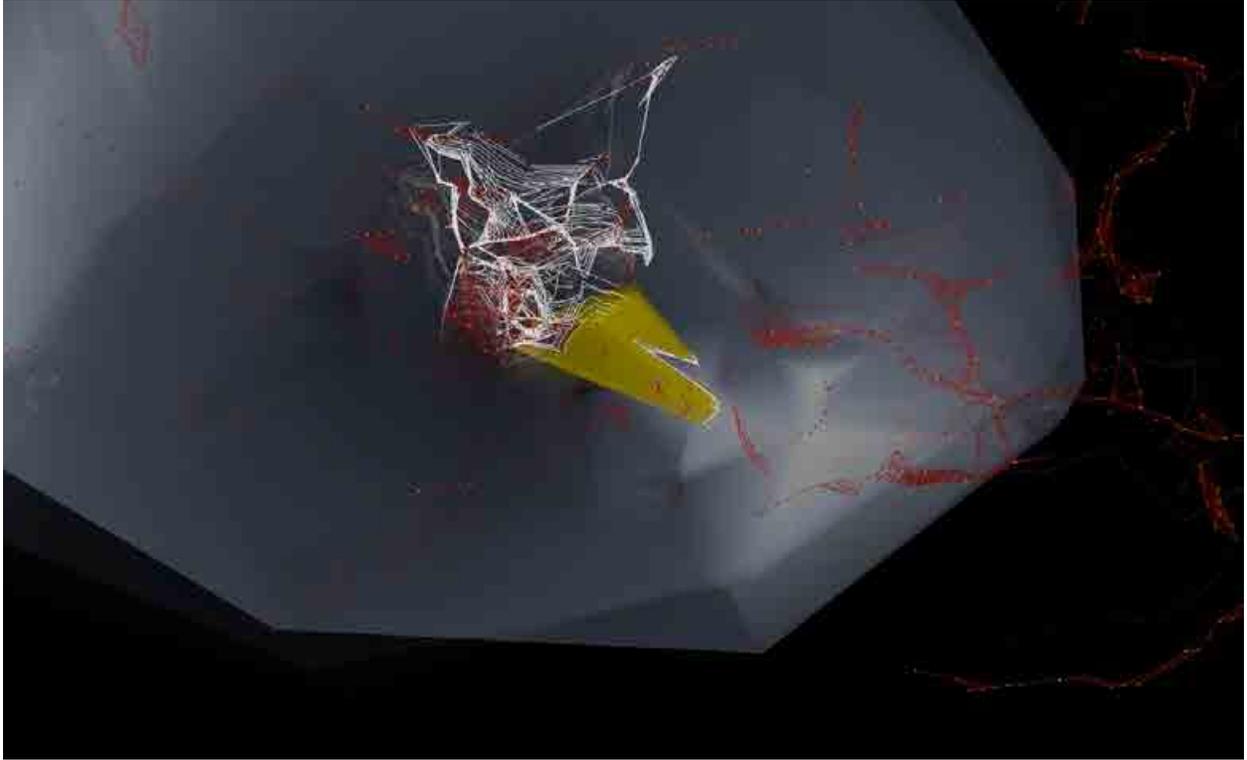


(Figure 2)

Using live traffic data provided by the City of Johannesburg as well as real-time data Google Maps<sup>®</sup> traffic and Twitter<sup>®</sup> another student in the Parametri-Cities: Synapse(i)s studio, set out to test the durability of Johannesburg's sprawling Apartheid era transportation network upon the commuting time of residents. While Johannesburg's Metrorail system was developed primarily to transport black workers to the gold mines, planners intentionally did not to provide access to wealthy white areas in the north. The geo-politics of the informal taxi system is problematized not only by limited access points and routes, but also by crime and mobster-like territoriality. Amid this uneven transportation system, the student's experiment posed the following mathematical question:

6.30 am: Two people travel from their home in Soweto to Sandton. One commuter uses the C1 Rea Vaya route until Park Station and then transfers to a metered taxi. The other takes the train from the closest Metrorail stop to Park Station and then he transfers to a metered taxi as well. How long does it take each commuter to reach his or her destination and what is the perception of space in each case?

The student developed a script to translate the live data into a time-based map along the travel routes that was then mapped onto the topography of Johannesburg. (Figure 3) The resulting model demonstrated the disparities, traffic delays, and loss of valuable time of each commuter. It also documented spatial perceptions yielding a topology of folded, warped, bent, blended, stretched, creamed, and re-folded space-time. The student's proposal for a chapel in downtown Johannesburg was a critique of movement, mobility, and a transportation network that had been designed to control labor and segregate residents according to race. (Figure 4) The new chapel would vertically and visually reconnect the disconnected places of the horizontal transportation network. Inside, visitors would encounter a container of urban sounds, hear voices against the political situation and convert events into moments of protest.



(Figure 3)

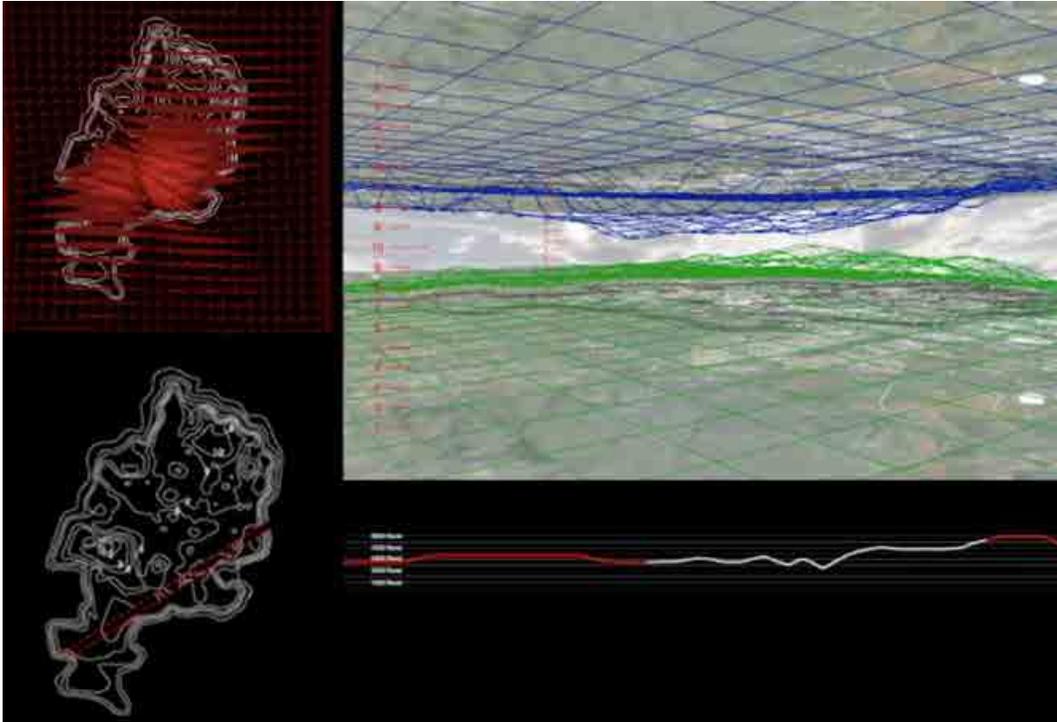


(Figure 4)

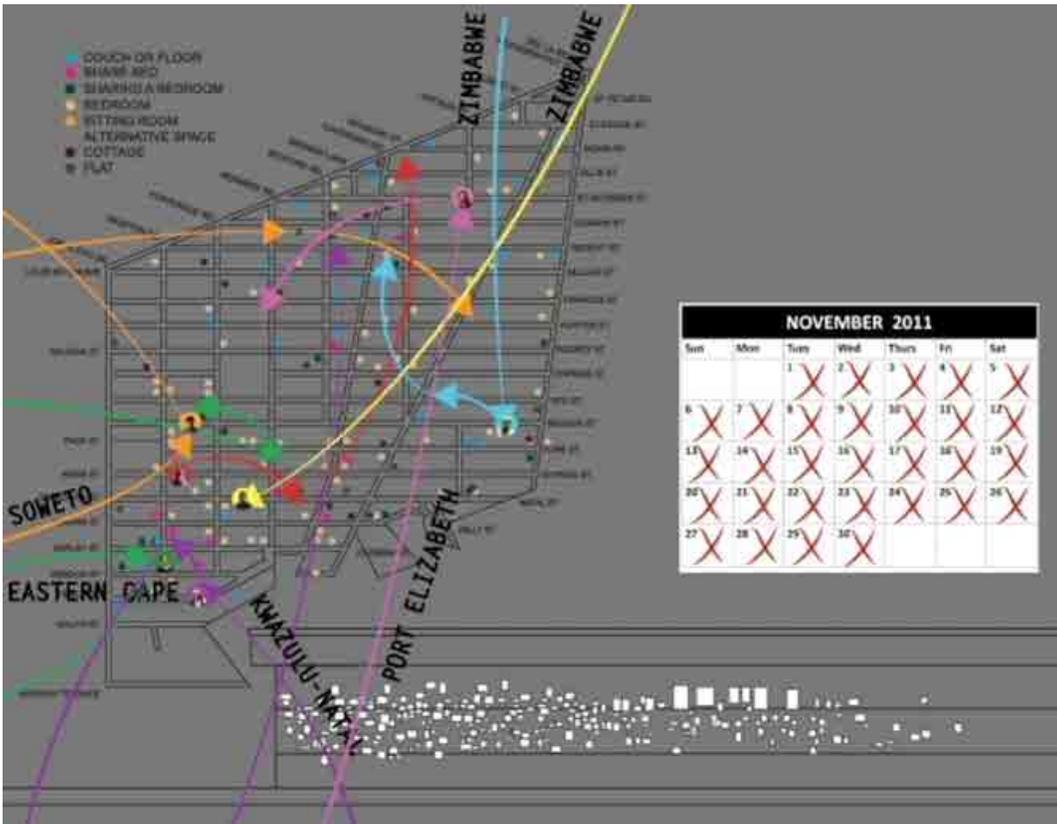
For our GAL studio in Fall 2012, titled *Media/Memory/Multitude*, students researched and topologically mapped the physical, virtual and social networks of Johannesburg's various neighborhoods including the ubiquitous mine dumps that define the city's terrain. Paired in teams, they analyzed Johannesburg's "media-scape"—the city's networks of mobile telecommunications, social media, telecommunications, and surveillance. They also studied the urban "landscape"—the city's infrastructural networks of transportation, utilities, migration, finance, mining and tourism. Using the same techniques of data mining and parametric modeling deployed in the previous spring studio, students probed the public database of official statistics—StatsOnline—maintained by the South African government. And like the previous semester, they accessed open-source real time data feeds from Twitter, Facebook, MixiT, Flickr, Four Square, or other reliable sources. Using Rhino, Grasshopper, and custom scripts to parse given and gathered data sets, students topologically mapped the transformation of these networks over time to show appearances, disappearances, shifts, drifts, and mutations in the urban topology. Students constructed a model that combined data visualized in their "mediascape" and "landscape" studies to delineate a "chronoscape"—a new space-time model of Johannesburg.

In the *Media/Memory/Multitude* studio, one team's space-time analysis of tweets about the recent Marikana mine massacre, for example, demonstrated how quickly social media compresses to mere seconds the movement of information across a vast landscape that separates a remote platinum mine from a global hub like New York City. By overlaying census data indicating levels of education and literacy onto geo-tags of tweets, they also discovered in their topological "chronoscape" how virtual connectivity is still nonetheless limited in part by systemic social and economic inequalities. (Figure 5) Another team studied how the pre-liberation government's stringent censorship and control of television and radio—SABC—had stymied growth in the broadcast industry that still impacts access to media in today's South Africa. By analyzing data on the type of programming that the main television network SABC presented in English (75%), Afrikaans (9%), Zulu (7%) and other languages, they developed a chronoscape model that demonstrated how SABC fails to address the viewing needs of a diverse audience that speaks over 20 languages. For their project site, this team studied the spatial range of a densely papered message wall that hosts postings written in the many languages of the immigrants who dwell in Yeoville. (Figure 6) As an example of a synaptic cleft in the urban flows of information, this block long message wall has resisted being digitized precisely because it operates as multilingual and multi-use public space of exchange—the wall has spawned, for example, related businesses including movers who park their pickup trucks nearby. Learning from this analogue example of "local-casting," students conceived of a mobile broadcast unit—BYOB: Bring Your Own Broadcast—that would be locally controlled and whose content could be broadcast throughout the new network. (Figure 7) As a virtual and urban node of connectivity, when parked on the street or in a park, BYOB's solar panels would also provide electricity for patrons and nearby street vendors.

To conclude, we consider Johannesburg's patchwork of emergent systems as "new collective networks of expression" (to borrow Antonio Negro and Michael Hardt's phrase) that challenge the spatial difference wrought by decades of oppression. (Hardt 2004) "New collective networks of expression," for example, formed the social media networks that proved fundamental to knitting together the local coalitions and global supporters of the Arab Spring (or as some have astutely pointed out that because it started in northern part of the continent—in Tunisia, Libya and Egypt—the most powerful and poignant revolution of the twenty first century should be labeled the African Spring). That both space and time are being transformed under the combined effect of the

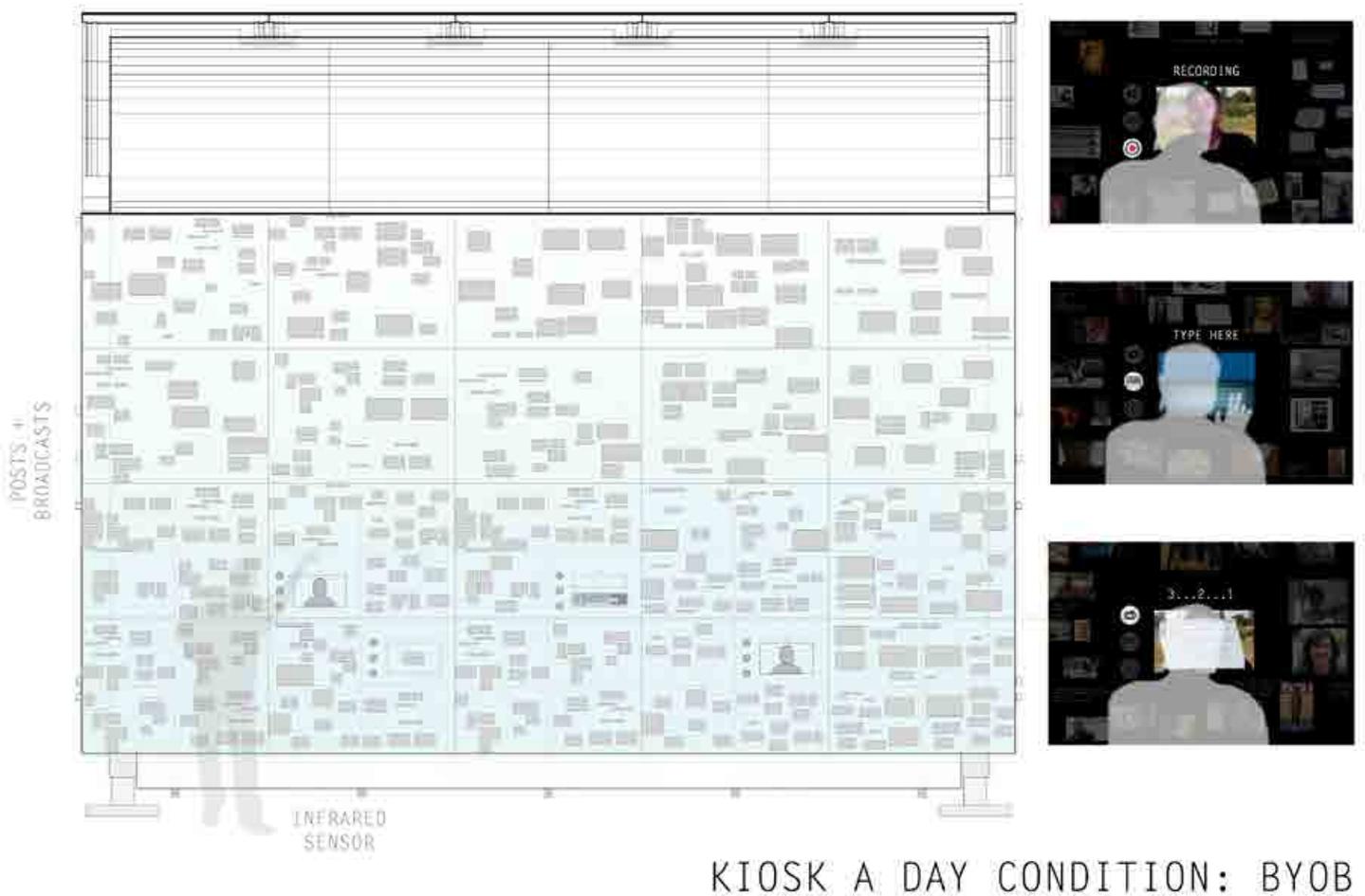


(Figure 5)



(Figure 6)

information technology and by social forms and processes induced by the currents of historical change is an obvious and hardly a new concept. (Appadurai 1998; Castells 1989; Galloway 2004) However, while the information age was thought to have produced a space-time distancing that resulted in a tearing of space-time from place leading to a decline in personal human interaction as well as a decline of dense urban conditions, mobile technology and social media are in fact producing a collapse of space-time and place through time-sharing social practices that are not only transforming the traditional city of the well-worn "first-world/third-world" binary, but also transforming way that the problematics of the African city are re-conceptualized. (Giddens 1990) "New collective networks of expression" also characterizes processes through which new social and cultural communities form and new political structures emerge. These processes also produce spatial relationships over time that in turn will create "new collective spaces of expression."



(Figure 7)

## KIOSK A DAY CONDITION: BYOB

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### **Captions**

Figure 1. CBD, Downtown Johannesburg near Park Station.

Figure 2. Animation still of Load-Shedding Geo-Spatial Analysis; Gustavo E. Bonet; Columbia University GSAPP, May 2012.

Figure 3. Animation still of Transportation "Delayed Topography"; Aikaterini Petrou; Columbia University GSAPP, May 2012.

Figure 4. Chapel Library of Delayed Topography; Aikaterini Petrou; Columbia University GSAPP, May 2012.

Figure 5. Animation still of "chronoscape" mapping an income landscape, education landscape, and social media across Johannesburg; Khan Sibley and Pablo Fernandez-Villaverde, October 2012.

Figure 6. Animation still of "chronoscape" mapping the movement of immigrants to and around Yeoville. Tanya Gershon and Matt Wang, December 2012.

Figure 7. Bring Your Own Broadcast – BYOB; Tanya Gershon and Matt Wang, December 2012.

## THE YOUNG IN SÃO PAULO: MEDIA USE AND GLOBAL PARTICIPATION

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### **Abstract**

The city of São Paulo is seen by many as a global city, given the sheer size of its population and economy and most importantly its role in the various world networks of commerce and culture. In recent years, the diffusion of communication technologies among its population, and especially among the young, has opened up participation in global networks of information for individual citizens. Through a series of semi-structured interviews with young students, conducted in centrally located public cultural centers in São Paulo, this paper explores the ways in which this participation takes place, the cultural and social forms serving as a venue for it and the meaning attached to it by its participants.

Our research shows that these young Brazilians are actively engaging in a global dialogue, even if this dialogue does not take yet traditional political forms. The challenges they identify to increase their presence in the new global arena do not seem insurmountable to them: they would like to have more opportunities to study abroad, learn foreign languages and host foreigners in their work and study environments. As one of them put it, "What else do we need? Tele-transport?" Young Paulistanos are using the new opportunities of global communication to learn languages collaboratively, show their artistic endeavors and forge dialogues with artists around the world, and create local public debates even when not encouraged institutionally, among other activities.

There is no doubt that life online is dependent on face-to-face interactions, and the availability of safe and culturally rich meeting places such as those where the interviews were conducted magnifies or even initiates global interactions. Moreover, the kinds of institutions to which these students belong seem to have a deep influence on their attitudes online. We found in our interviews that students from prestigious public universities tend to be less active and less optimistic than other students about their global participation. It seemed, from the interviews but also from our personal experience teaching in one of those institutions, that the Brazilian academic strong anti-globalization discourse tends to undermine students' autonomous use of new media forms.

### **1 Introduction: a transitional moment**

The goal of this paper is to understand how young São Paulo residents relate to global issues. Living in a global city, they are obviously connected to global networks through their work and their consumption and cultural habits. But do they reflect upon such connections? Do they actively pursue a better understanding of global affairs, through the various media to which they have

access? Do they use these media to participate in global debates as autonomous agents? Which political and cultural forms they elect that allow them to relate to the world at large? These are some of the questions we will explore in the paper, through a series of semi-structured interviews with young São Paulo residents conducted in two important cultural centers in the city.

The young in São Paulo might be living today a very special moment. For the first time in our history young people in large numbers can postpone their entrance in the labor market, plan their lives and dream of goals that their parents, busy with obtaining the basic goods for a comfortable life, were not able to achieve. The city population remained relatively stable in the past decades, for the first time in generations. Many São Paulo residents, or Paulistanos, come from Latin American and Asian countries or from other Brazilian regions, but São Paulo is not anymore a city made substantively of struggling migrants and immigrants. Economic growth came in the form of better housing, middle class suburban expansion and an impressive growth in the number of cars, which makes traffic hellish but also shows the affluence of its citizens.

National conditions naturally played a role in this process. With inflation under control and political stability since the early 1990s, businesses and local governments could make long term plans. A free media could play its role as a critical voice on national problems, keeping government actions under public scrutiny. A recent credit boom made mass consumption available for the emerging middle class and safety net programs provided basic living conditions for the poor. In education, continuous investments over decades by all spheres of government and a lower fertility rate are finally showing results. Education is not a luxury good in Brazil, although quality education might still be.

Of course, any analyst of Brazilian social life knows that these developments are not free of problems. As I write, the traditional newspaper *O Estado de S. Paulo* is under censorship for its investigative reporting, which is not the first time in its history and might not be the last either. Drugs and crime, pervasive in certain areas of São Paulo and other major Brazilian cities, often receive brutal responses from the police, endangering the law-abiding population. Social inequality appears not only in purely economic arenas but also in access to health care, education and even justice, seen by many as offensively discriminatory against the poor. In spite of these problems, however, we can safely say that Brazil has opted for a democratic regime and a market-oriented economy, and it is in this context of stability and growth that I met the young Paulistanos for this research.

Let me expand a little on education and technological changes, giving some background for the research. In education, we are witnessing a revolution, at least in quantitative terms. Since last decade we saw a dramatic increase in the enrollment in private colleges, now followed by an increase in enrollment in public universities, mostly federal (INEP 2009). Qualitatively, however, higher education does not seem to be changing much; curricula is decided by federal regulation and tends to be rigid (Davidovich 2004). In basic education there has been increases in enrollment, due to many factors: increase in demand, new aspirations from the lower middle classes and the new affluence, that makes possible for families to keep the young at school for longer periods. In the State of São Paulo there has been more or less successful attempts to reform secondary schools, with increase in the number of technical schools and attempts to introduce extended days in regular schools. Another important recent development we should mention is the introduction of affirmative action programs in Brazil (Paula and Heringer 2009).

In the past years we have seen a dramatic increase in the use of computers and new technologies in Brazil. In São Paulo buses, used mainly by the working and lower-middle class, it is common to see people chatting on their cellphones or watching video clips. On subway trains, tiny earphones link young people to another place or time, making them kindly oblivious to what surrounds them immediately. The fashionable iPods are still rare in São Paulo streets due to prohibitive import tariffs, while other electronic products, made or assembled in Brazil, are every day a bit cheaper. Cafés in São Paulo are not Apple white like in American cities, but it is not uncommon anymore to see people carrying their laptops around. Schools and universities have invested in computer centers and digital inclusion entered the lexicon of social inclusion, an always present theme in the struggle for a better society in Brazil. In the case of São Paulo, the State has offered public internet access through the program *Acessa São Paulo*. Paulistanos also benefit from the *Telecentros*, managed by the municipality. Together, however, all public internet access serve a tiny minority of users; most of them use the internet at home, at work or at friends' homes, much like happened in the 70s with television. An impressive number of people, particularly in the working and lower middle classes, use the Internet in Lan Houses or Internet Cafés spread all over the city.

Technology, education and inclusion go hand in hand. Today a grocery store cashier must be able to manage a simple computer, which creates a significant incentive to finish high school. Once he or she has this basic knowledge, why not continue his or her studies to apply for better jobs, and then why not acquire his or her own machine? It is through this virtuous circle that São Paulo is being covered by a tapestry of wireless connections, computers, smart phones and etcetera. Even fast food chains, such as McDonald's and Habib's, offer free internet access to their users. Coverage is not complete; less than half of the population in urban areas in the Brazilian Southeast use the internet, and only half of those at home (Barbosa 2009). Among young Brazilians, however, two thirds make use of the medium. I believe that creates an interesting phenomena, where virtual and face-to-face interactions strongly overlap; where learning about the new medium happens in pre-existing social circles. Gregariousness is part of Brazilian culture, as many have noted (Holanda 2003), and it will be interesting to examine how the particular Brazilian sociability is translated into the Web. My interest in the social and public appropriation of communication technologies influenced my research design. I decided to meet my interviewees in very public places, cultural centers where dialogue and interaction are part of its regular sociability.

To wrap up, São Paulo is certainly an important nod in the process of globalization, but it is not clear if its residents pursue an active role in this process in its cultural or political dimensions. It seems that young Paulistanos, already growing up in a city that is financially and socially open to the world at large, tend to incorporate global issues as part of their own identity. If this is true, in which ways are these global issues incorporated in their lives?

## **2 Networks and the public sphere**

The theoretical concern that inspires this paper can be found in the literature about the public sphere and its democratic challenges. Hannah Arendt (Arendt 1958) discusses the modern challenges encountered by public spaces in maintaining their liveliness and significance. Jürgen Habermas (Habermas 1995) grapples with the possibilities and the dilemmas of a public sphere based on the media and on mediated communication. Miriam Hansen (Hansen 1994) stresses the experiential aspect of public participation in mediated societies and its mechanisms of inclusion and exclusion. Contemporary writers, such as Saskia Sassen (Sassen 2007) and Jeffrey Alexander

(Alexander 2006), tackle the communicative challenges of an emergent global society in ways that resemble the classical thinkers in their inquiry about the modern public sphere. This should not surprise us: it is rather a consequence of the fact that problems of the same nature are posited now, but in a global scale: the encounter of diverse and often fragmented publics through mediated communication, debating common problems and learning about communicative challenges “on the job”, with little guidance from older generations.

The public sphere seems to have today a relationship to other spheres of life, such as the domestic life or work, that is of overlapping more than of separation. Arendt, for instance, had the Greek agora as a model for public activity, stressing the need for stable walls dividing the various spheres of life. Habermas presented the 18th century café as the model for the same public sphere, linked to the private sphere of newspaper readership and to the State through the very content of these newspapers, but nevertheless spatially delimited. But if the public sphere today is found in a expansive mediated environment more than in an enclosed defined place, what is the shape of it? Can it better be understood as a network, or as a series of overlapping ones? Most certainly. Peter Taylor (Taylor 2009, Taylor 2006) gives a detailed account of the ways in which not only countries, but cities and their particular fields of activities construct global networks of services and exchanges. Not the city as a solid entity, but the city in its multiple activities takes part in various networks, pulling its citizens – and its country – towards a global society.

The ties, however, that link us to this global society are a product not only of ad-equate material conditions; they are often actively pursued by citizens who en-counter – or create – conditions for these new ties that might enable public participation. Connections made by the young to global environments, in particular, pose interesting questions to the researcher. Not yet in command of governments and corporations, they might still help to create denser global networks through their social and individual activities as students, consumers, activists or artists. There has been some interest in the role of young people in the active construction of a global culture, by authors such as Livingstone (Livingstone and Bovill 2001) and Olsson (Olsson 2005). In Brazil, researchers who studied the role of television in the construction of national public spaces, such as Bucci (Bucci 2006), are now looking at the challenges brought by the Internet. Researchers who write about the young and the Internet in Brazil, such as Buzato (Buzato 2008) and Lima & Furtado (Lima and Furtado 2008), tend to focus on social inclusion issues. An interesting study was conducted by public television TV Cultura to better understand internet use in Lan Houses (Data 2009). Few, such as Freire (Freire 2006), have included the relationship between the global and the local in their investigations, but they do not seem to focus on the young in particular. Although there is theoretical reflection on the possible impacts of globalization on national and local cultures in Brazil, I was not able to find empirical research that examined the active connections young Brazilians are making to the global mediated society. In my previous research (Pait 2008), on the reception of international news in São Paulo, I tackled the issue, noticing that young Paulistanos tended to experience global events more intensely as part of their world than the general population. The finding inspired me to do an in-depth research with the young population, which seems to have a different relationship to the global sphere.

### 3 Virtual worlds and real challenges

In late September and early October of 2009, I conducted a series of interviews with young students in the city of São Paulo, Brazil. I spoke to 34 people, most of them between 18 and 24 years old. The interviews were held at two important cultural centers in the city: Centro Cultural Vergueiro and SESC-Serviço Social do Comércio. They are centrally located in the city, offer various free services and attract a wide variety of people. Both have free access to the Internet, with computers and Internet courses, and Vergueiro has recently started to offer wireless Internet connection as well.

Centro Cultural Vergueiro is close to downtown, to the busy Avenida Paulista and, most importantly in a city the size of São Paulo, to a subway station. Centro Cultural São Paulo, as it is officially called, is run by the Cultural Department of the City of São Paulo. For many years maintenance of the flat spacious building that follows Rua Vergueiro downhill was precarious, but in recent years the glass and concrete frames have been able to protect from the elements the open, continuous spaces that host a library, theaters, cafés and reading rooms. Centro Cultural Vergueiro's guests are initially surprised by the free movement of young people using the spaces for their various activities. A group of teenagers greeted me in my first minutes there with an offer of a "free hug", which I gladly accepted. In the main lobby people read their books and look around while waiting for friends. Taking your right you pass the theaters and ticket offices, and reach an open space with tables and chairs where small groups study for the college entrance exams or for college courses. Before leaving the building, one can find a map of the Center for the visually impaired. If you go back towards the main lobby you can find sculptures, chess tables by the café, and going inside – although you are never sure where is inside or outside at Vergueiro – the library, exhibitions, and the administration.

In little corners and places off the busy alleys, groups of young people develop their own activities, unrelated to the official programming of the Center. One group seemed to be rehearsing a play, another having a radical political meeting. I do not recall seeing such a free space in São Paulo, or in other cities I have visited. My model of free public encounters were the rallies for democratization in Brazil in the mid-1980s, but these were heavily orchestrated demonstrations. They too were diverse, lively and peaceful; to be sure. But they were run by political leaders and with very little space for individual expression besides those of the pop singers invited to make them more fun. At Vergueiro what I noticed was that, besides the diverse group of young people – and not so young citizens such as myself – there was a sense of interaction among them, which the hug conveyed well. While I was conducting an interview a group of young artists asked my for my soda can, to be used in an installation. Afterwards, I asked them for an interview. People were either making something or watching something being made. Most of my interviews were conducted there.

SESC-SP is an impressive semi-public institution with branches throughout the State of São Paulo offering sports, cultural and social activities. In the city of São Paulo there are 15 branches, some of them offering activities for the local communities and others being part of the large cultural circuit of the city of São Paulo, with important musical events or film festivals. All of them are unusually well taken care of by Brazilian standards, with designer furniture and modern architecture. SESC Pompéia, constructed in an old brick walled factory in the residential West Zone of São Paulo, shows the signature of Brazilian architect Lina Bo Bardi and has hosted memorable shows and

exhibitions in its busy programming. Other SESCs cater to communities in the poor suburban areas of the city and offer similar activities. At SESC Itaquera, in the heart of the working class East Zone of São Paulo, for instance, a grand piano sits comfortably around elegant wooden chairs in the peaceful café. An active staff member showed me the computer facility and the various courses at the Internet Livre designed for users of all ages. "What is digital inclusion?", he asked me. "It has unexpected sides. Here at SESC Itaquera a group of deaf young people started to socialize here at the Internet Livre. We didn't have anything special for this group, but they found here a place where they felt welcome, enriching our experiences as well."

SESC is pursuing an active role in the various programs of digital inclusion in the city of São Paulo, stressing a cultural and reflective approach to the medium. They will take part in the public TV Cultura initiative Conexão Cultura to bring educational content to Brazilian users. I had the opportunity follow one of these initiatives, an Internet workshop where teenagers learn how to use creatively Internet resources such as simple music composition freeware. The workshop is part of the program Tribo Urbana for low income teenagers, given at SESC Consolação, one of the two centrally located SESC branches where I conducted interviews for this research, the other being SESC Paulista. In the following paragraphs I will describe a few things I learned from these interviews, some of them responding directly to the questions I initially posed myself and others raising new questions that I hope will be explored in the future.

The interviews will try to determine how this public relates to the world at large, and through which cultural and political forms. I will be especially interested in the use they make of the media: do these young Paulistanos remain as spectators of global events happening elsewhere or do they use the new interactive capabilities of the media to express themselves and convey to the world their own views and realities? How do they deal with language barriers in their mediated communications? What kinds of material or educational needs they would like to have fulfilled in order to have a more active participation in global cultural and political life?

### **3.1 The end of hierarchy?**

It was easy to establish a pleasant interaction with the young people I interviewed. There was a formal aspect to it, with my list of questions, my digital recorder at hand and my taking notes, but they did not form any barrier to communication. Everyone I approached accepted to be interviewed for the research, at Vergueiro and at SESC, some with visible enthusiasm. Many interviews were conducted in weekend afternoons at Vergueiro, and that might explain part of that relaxed atmosphere. But what was striking to me was the absence of any hierarchy in these interactions; I felt I was accepted as an equal. Neither my job as a university professor put me above them nor my age – I am on average 20 years older than my interviewees – below them. Social class, educational level or international experience did not seem to play any role either in our interactions, as it did in previous research I conducted in the city of São Paulo. Was it merely the setting, inviting me to sit on the floor with them and breaking boundaries between us? I would like to propose another explanation. This generation might be the first to go beyond deference or defiance in their relation to their elders. They might live in families where subjects previously seen as taboo are talked about freely, and they certainly live in a society where freedom, democracy and equality are positive values. Moreover, they are living in an economy with astounding social mobility, although not equality, and might see social class as a more fragile division among people than their parents did. The comfortable way in which they talked to me, asking casually about my

research, complimenting my notebook design and coveting my digital recorder made me think that I should simply sit and talk to my students more often in class, to create that environment of free exchange of ideas and experiences. Has the media, including the mass electronic media their parents consumed and the new media they use, any role on this? Has it worked as a great equalizer and fostered a certain indifference to social boundaries? Most likely, but let us now look in detail at the findings in my research.

### 3.2 New cultural worlds

Some of the young people I approached were immersed in their mediated world, much like young people do in the subway and other public spaces around the city. They were listening to iPods, concentrating on their computers or on the Xerox copies of papers they had to read for college or on preparatory material for the college entrance exam. But after we started to talk they would put aside this material, concentrate on the actual interaction that was taking place, and talk for as long as we needed to cover all my inquiries, which, I confess, was a relief to me. After all, it is good to see that the mediated social world is expanding their social interactions, and not being created at the expense of face-to-face contacts so important in a metropolis such as São Paulo that can often be very harsh. During these weeks of research, I learned a lot about the Internet and youth culture by talking to them, in addition to the particular topics I was interested for this research concerning the relationship between young Paulistanos and the world through mediated communication. They showed me new design magazines published in Brazil, such as Zupi and Computer Arts Brasil. They mentioned sites such as WordPress and LiveMocha that I was not familiar with. I have the habit of browsing Flickr in search for new wallpaper, but I didn't know this was such a popular site in Brazil. I would have never heard about jazz DJs in the São Paulo nightlife if not for this research, nor that you can keep yourself informed about international trends in modern dance through YouTube. Who could have imagined that there is a market for Celtic music in the land of Bossa Nova? They told me about international television series such as Veronica Mars, Supernatural and Skins, some of which I felt inclined to watch. They explained to me how a wireless modem can be a cheap connection alternative if you need it only on weekends. When I showed surprise at a college student who told me he was listening to a soccer game on the radio through his cell phone, he shot back: "Are you in the beginning of your research?" I had already conducted a series of interviews, but in a certain way he was right, I was – and I will always be – in the beginning of my research, for my interviewees were reporting on a very dynamic cultural and mediated scene. They also told me of a plurality of educational experiences that included state universities, private colleges and technical schools. To sum up, they might be living in a different mediated world than I grew up or that I live in now. But these differences did not preclude dialogue, interest or exchange; quite the opposite: they invited them.

Here I should add a note about the representativeness of my sample. I believe the young people who spend their weekends at Vergueiro are not representative of the average Paulistano youth. As some of my interviewees themselves pointed out, this is a place where the artsy come and meet. To get a more representative view I would have to visit Lan Houses and talk to people who use the Internet at home. Brazilian colleges and universities do not give the emphasis on student sociability that their American counterparts do. So the environment I am describing in this paper might be found in the United States in college campuses more often than in public spaces. At SESC, with its emphasis on social services, my interviewees might have been closer to what we could find in society at large – there I talked to a struggling call center operator and a nursing assistant, for

example. However, I think the group I had the opportunity to talk and meet represents a powerful trend in Brazilian society; in the years to come, I would not be surprised to see more people fit into the description I am giving here. In other words, I most probably engaged in conversations with a self-selected group of people who are more attuned to cultural and communicative global trends than the average citizen. What is interesting in this sample is that they do not necessarily belong to the upper social strata of society; quite the opposite. They are users of public cultural facilities which are accessible by public transportation, some of them coming from lower middle class suburban areas of the city.

### **3.3 New technologies and practices**

The Internet appeared in all the interviews as a crucial medium of information and communication, even for those who are in the initial steps of using the medium. Many listen to MP3 players, such as Daniel, a craftsman in his mid-20s, who finds there "good music, not music imposed by the media". People often reported they did not have time for television after a long day or working and studying. "We don't watch anything randomly", said Raíssa and Urânia, arts students in their late teens, who prefer to download international series from the Internet or rent them on video stores. Television appeared in few interviews, but as a childhood memory. Caroline, for instance, a high school student in her late teens who has had opportunity to travel abroad, confessed that Glória Perez's soap operas *The Clone* and *America*, whose characters lived abroad, got her interested in global issues. Books appeared many times in the interviews, especially in the context of school and college. Isaac, a dancer in his mid-20s, told me he rarely reads books anymore, but when he does he realizes how good they are. "Searching in the Internet is a different experience", he said with nostalgia for the abstraction from immediate time and space reality provided by the book. Cell phones and instant messaging were obviously also mentioned by many as a means of communication. Newspapers appeared often in fragmented ways. News popped up in search engines and information traditionally found in newspapers, such as cultural guides, were searched in specialized sites such as TicketMaster Brasil or Portal UOL's *Catraca Livre*. Domestic and to a lesser extent foreign newspapers and news websites such as the BBC were also consulted, but national and international news rarely appeared in our conversations.

As many have noted, the pace of evolution in information technologies has accelerated. If the progress of the book is measured in centuries, that of radio is in decades and that of the Internet in years. The mystique involved in the Internet as a means of communication seems to have withered away faster as well. Young people with whom I talked saw the entire business of mediated communication through the Internet in its various forms and shapes mostly as a transparent business. Television in Brazil, in contradistinction, has been frequently seen in mystical terms, as a uncontrolled power that conveyed oppressive ideologies or, conversely, as a plentiful source of beloved characters and desired landscapes where we would rather be. I did not find anything close to this when I heard young people talk about the Internet, which was often seen as a vehicle for information stored elsewhere and for communication between others like them in other places in São Paulo, in Brazil, or abroad. The necessarily active role that Internet users must play might be a cause for this serene approach. In front of the tube, we are often unaware of the decision processes behind programmers' choices, and in a country where television was for a couple of decades so dominant, that might bring a dose of anxiety. In front of the computer screen, part of the decision making process is ours, or at least seems to be so. "I read the news I am interested in", I heard more than once from young people who use Brazilian portals such as Globo's G1 or

Microsoft's MSN Brasil. Some of them receive their information through Internet searches such as Google News, which can yield unpredictable sources. "I can get international news from a Pernambuco paper, which is an alternative to the southern view", told me an engineering student in his mid-20s. The impressive range of information available through the Internet is most of the time seen as positive and exciting, even when they present challenges. Diego, a graphic design student in his early 20s, said: "You might be looking for a wallpaper in Flickr and come across a gallery you did not know about", making the point that even the challenge of navigating in the Internet can be pleasurable. For him, the real challenge is different: being noticed in this plentiful environment.

A few young people show some anxiety regarding the volume of information available and the need to keep up with the pace of technological transformations. Ana Maria, an online service representative in her late 20s who is preparing for the Enem, the national high school exit exam, explained her concerns: "In this technological environment, every day we have new things, and they all depend on money." But most young people interviewed feel they actually have everything they need materially for enjoying this new communicative sphere. Isaac, who was carrying a white Mac laptop, asked rhetorically: "What else do we need? Tele-portation? Reading other people's thoughts?" But some were exploring the Internet with conscious care. Caio, a former soccer player in his early 20s told me he was preparing, with the help of friends, a list of websites he would like to consult, among which he mentioned the Centro de Mídia Independente. He already had his email account but did not want to explore the Internet randomly. He was not unfamiliar with the Internet and its potential, and actually incorporated Internet terms to his daily language. He also had the interesting habit of recording thoughts and new vocabulary in a digital recorder, which worked like a notebook for him. He was concerned with the relationship between the virtual and the real worlds. "I don't know what this thing is. It is like Matrix. You have to be very smart to go around the virtual." Consulting friends and exchanging information with them was actually quite common among my interviewees. André, who in his mid-20s works at a fast food chain, had just bought a laptop computer and was trying to use Vergueiro's wireless connection, relies on his co-workers to browse the Internet. Face-to-face interactions, with friends, coworkers and classmates seem to give meaning to virtual connections.

For most of the young people I talked to, the Internet appeared as a medium through which particular contents could be accessed and environments could be reached. Television, also quite diverse in the kinds of contents it makes available, is usually seen much more like "a thing" than the Internet. Elisandra, in her late 20s, uses the Internet to do research for her classes, as she did for her Master's at the University of São Paulo. "I read Der Spiegel and German newspapers, where I could get past interviews about German literature which I was studying. If it weren't for the Internet, I would have to ask people to bring me this material or consult them in specialized libraries." She also uses the Internet to gather material for her classes, and teaches her high school students how to do research in the Internet. For many young people, the medium is really not quite the message, at least not in this first layer of meaning. The Internet serves as a way to learn about particular areas of interest in an expansive environment.

### **3.4 In a global world**

So far we have dealt with the relationship young people have to the media and especially to the Internet. But how does the external world come into play for this new generation of Brazilian

citizens? First of all, the world is here in São Paulo and that is undeniable. Some young people might convey a benign nationalist discourse or, more commonly, one of indifference to the external world which is quite common in countries of continental size such as Brazil and the United States. But even for those young people, foreign forms of culture are an integral part of their lives. Ribeiro, who at 30 is studying law at a private college downtown, told me he is not particularly interested in foreign affairs. "In my studies, my focus is domestic, for Brazilian Law has its own particular history. In my job, the technology I deal with is all developed in Brazil and actually exported", he said proudly. In the course of the conversation he told me his main challenge now is lack of time, preventing him to play his favorite sport. "It's not soccer, I play paintball", he said, correcting my silent assumption that Brazilian men play soccer. Daniel reflected critically about São Paulo residents: "Paulistanos are so Americanized. I don't want to go abroad, there is so much more I want to learn about my own country". He deeply admires traditional Northeastern culture and people. The musical movement he admires most, however, is Mangue Beat, which mixes folk Northeastern rhythms with electronic music.

Most of my interviewees, however, do not share this isolationist view. They are open to external sources of information and there seems to be no value difference in domestic or foreign sources. I actually met with a certain indifference towards what is foreign and domestic that surprised me. Look how another Diego, who in his early 20s took a few philosophy courses and is now enrolled in a digital media program, responded to my question about how he uses the Internet to communicate with the external world: "With Google Street View you can be in the middle of Times Square in New York. I don't see boundaries inside the Internet. I access a site in Russia as easily as one here in Brazil." Flickr, as I said, is a very popular website among graphic designers and photographers with whom I talked. I asked if they used it to show their work to people abroad. Some said they had never thought about their images being seen by people beyond their own circle of friends and potential employers – they use Flickr as a portfolio platform. Others, however, reported the same indifference to location. The first Diego, the graphic design student, said "Flickr is a professional site. I don't need to know people. I make comments on the photographs, the texture, the angle." I felt as if I were introducing artificial categories to our conversation: domestic and foreign, here and there. Beyond these attitudes, another one, a more classical one towards foreigners was found in a few students who mention actual cultural differences that have to be overcome in their contacts with foreigners. These are people who have a strong desire to live abroad and who have actual international experience. Caroline, for instance, was concerned about how others would see her when she traveled to Europe, but was happy to realize there was no hierarchy among peoples. They had the opportunity to witness first-hand that the global society might not be as homogenous as GoogleEarth and Flickr might lead as to think. At the same time I do not want at all to dismiss the perspective of those young people who see the world as flat, to use the expression of a New York Times columnist.

### **3.5 Language, culture and exchange programs: talking to the other**

The young people interviewed for this research were included in the digital world, in part by research design. At Vergueiro, even young people of modest means were carrying their laptops and cell phones and if they weren't fully using the Internet, it was mainly due to a conscious decision to learn more about the medium before jumping on it. What did they need, then, for a more active role in a global communicative sphere? Let us note that although they were comfortable with the medium, they were not actively proposing new forms of interaction and

expressing themselves to a wide audience. Isaac, the dancer who uses the Internet to keep updated with dance trends, mentioned the site Wikipedia as an interesting source of information. When I asked if he had entered information on the site, his answer was: "Can I edit Wikipedia? I didn't know that." A very interesting exception was Ribeiro, the law student, who showed me a site he had built himself for his college class. Teachers could enter their material in designated places, but there were forums where they were denied access. It works as a learning platform such as Blackboard or Moodle, but upside down, where the teachers of various courses were the guests and the students where the hosts. For him, the introduction of the site, besides being practical, brought more interactivity to the class and made possible for them to give shape to their demands without the fear of retaliation, for they are made in name of the students as a whole. As I said, this was an exception. Most interviewees used the resources made possible through the Internet, but did not propose new ways of using them.

The overwhelming majority of young people said they did want to have a more active role in the global community, and I asked what could help them achieve this. The answers surprised me a bit for their simplicity and obviousness. They need language courses, for instance. Ana Maria told me, half-jokingly, that in public schools English classes do not go beyond the verb "to be". She was adamant that one had to pay a private course to actually learn the language that is so present in our cultural and professional work. With her and her friend Luciene I learned about LiveMocha, a website that connects learners and teachers of foreign languages in a collaborative way. Many young people mentioned exchange programs. They would like help in finding reliable exchange programs, with actual cultural or academic content, and in financing them. Many would like to have direct contact with people and experience different cultures, by going abroad or by receiving visitors in their environment. Cultural exchange programs such as those organized by France to promote its culture were mentioned. "We would also like to show what we have here in São Paulo in cultural and urban terms", I heard in more than one interview.

It was easy to see from the interviews that the main path through which young people relate to a global culture was not the media per se – the Internet – or a curiosity about the world abroad that moved them to learn different languages and cultures – something that moved me, for instance, when I was their age. They were interested in actual subjects. Walter, a musician in his mid-20s I interviewed on my way out of Vergueiro, who was accompanying a friend doing some graffiti in a soon to be demolished wall, said that he is in contact by email with Argentines and other foreigners whom he met in the São Paulo nightlife. He was once invited by an Italian to DJ abroad – "In the night, all things can happen", he told me. He is interested in jazz records and told me he introduced jazz DJ in São Paulo. His contact with the world outside Brazil is through jazz and through the particular sociability of the nightlife. Other young people reported a similar path: music makes them aware of other cultures and interest in other people and places. In these cases, they looked for specialized music schools where they could develop their skills and learn more about the art.

Technical schools, which form a group of a few selective secondary public schools with clear professional goals, were also a path through which these young people could imagine a world beyond national frontiers. The case of State Technical School Carlos de Campos, where some of the design students came from, was an example; its students were proud of being part of it: "Panamericana [a private design school] envies us." Dance, music, philosophy, literature, science and visual arts were some of the ways through which the young Paulistanos I talked to related to

the world. That might explain the indifference to boundaries I noted before: arts and sciences are essentially transnational endeavors. Note that the paths through which this access to the world appear are all outside of the standard basic public education, which form the vast majority of the young population in the city and in Brazil. A private high school student was I believe the only one who reported that his interest in the sciences was stimulated by a teacher, who recommended that he read the magazine *Scientific American Brasil*, a magazine that was not available to the previous generation.

### **3.6 Inclusion or resistance?**

So far I described different groups of young people. Those who are eager to explore different cultures and places as an end in itself form a minority. Those who are enjoying the opportunities the new media make available for them with a certain indifference to national boundaries form the majority. I met a third small group who espouse an isolationist discourse, for lack of a better world, but are still culturally immersed in a global world. Many, belonging to all groups, are cautiously entering in the virtual world. But there is a small group of young people who showed a different – and much more contradictory – way of looking at the outside world. Coming from prestigious universities, you would expect them to be more active in establishing their presence in a global society. They do have better foreign language skills, and they are more professional in the academic use of the internet, searching for academic papers in international databases, for instance. But they are not the most excited people about the possibilities opened up by new media. They would like to share with others who did not have the same opportunities they did the benefits of a better education, but fail to imagine how the very media they use can be a vehicle for this.

Four of my interviews inspired the description above. I ask the reader to keep in mind here that I am presenting in the next paragraphs an idea that should be explored in future research specifically designed to understand the relationship between university cultures and global participation. Nevertheless, I believe it is important to touch on this very interesting issue in this paper. The engineering student, who was about to transfer to a computer science course in one of the public state universities, was an enthusiast of the Internet, but missed an environment where deep thoughts and real debate could happen. "I am not thinking that ahead", he said when I asked if he had plans to build such an environment. He planned to give classes as a volunteer at a preparatory course for the college admission exam maintained by the Núcleo de Consciência Negra. His goal was to show his students that computers were made of math, which is very interesting. But he could not go one step ahead and picture himself giving a contribution to the Web as a whole.

I also talked to two students who were preparing for the extremely competitive course to enter in the Brazilian Foreign Affairs Office. They had language skills and were knowledgeable about foreign affairs and related disciplines, but did not consider participating in a public debate about foreign policy happening through blogs and magazines. They gave vague answers when I asked about how they could be more active in the global society. "I would be a diplomat. How much more international can my career be?" When they are advanced in their careers, they told me, they might be able to have some autonomy, but I did not get a sense of purpose in their professional commitment.

At SESC, I had the opportunity to ask two journalism students from a prestigious public university about their views on the dramatic changes taking place in their profession. "You mean, the end of the required degree for journalists?", one of them answered, referring to a recent Supreme Court decision. They seemed nonchalant about the Internet and the global changes taking place in the profession. Some of their teachers still used typewriters, they told me, but the college environment was stimulating enough. One of them used the Internet to read foreign newspapers and magazines and pass interesting articles along through Twitter.

My final example comes from a student whose interest in biology was aroused by nature programs broadcasted by public television. He ended up in an environment college program, and there he learned that in Brazil the real problems are social and not environmental. I asked if he had plans to contribute to a Brazilian form of environmentalism, that incorporated the social. But he seemed more interested in learning proficiently the foreign environmental discourses and question them. These interviews hint at a complex interplay between class, education, media and global participation. Better technological and academic conditions are not necessarily translated into more active global participation or a more defined sense of purpose. The critical discourse of selective public universities might be actually working as an obstacle for these young people to enjoy all the opportunities opened up by new communicative technologies and to imagine ways to open up opportunities for their fellow citizens.

Other students were excited about the opportunity to be part of a cultural world that goes beyond national boundaries. Caroline, for instance, said she wants to study International Relations and make a difference for Brazil. Tiago, who is friends with Raíssa and Urânia, enjoyed exchanging stickers with European artists who post his stickers in the streets of their cities while he posts theirs. Isaac thinks of applying for jobs in dance companies abroad. The students in the prestigious public universities with whom I talked did not translate this enthusiasm into practical action, imagining the new Twitter or fostering international dialogue on foreign affairs or proposing a new ecology or reflecting on the changes in the media in the developing world. They were actually thinking in a quite passive manner, in spite of their obvious academic skills.

#### **4 Towards global participation**

Use of new media is expanding rapidly in Brazil, in spite of the country's social inequality, of deficiencies in public education and of high import tariffs. Brazilians are well know for always "finding a way out" of problems, and the spread of Lan Houses and Internet Cafés that cheapen the use of the internet is a good example of this national trait. For certain groups in Brazil the new media are integrated into daily life, allowing us to say, paradoxically, that the media are less important than they were in the past. The young Paulistanos I talked to spend their days accessing various form of media, and, while in the Internet, accessing different sites and sources. Their attention and their discourses tend to focus on concrete cultural forms less than in the media that conveys them. Both for public policy and for sociological research this is an important result to have in mind. Global participation should be thought as participation in particular cultural forms, which demands concrete knowledge, and the establishment of contacts with people such as themselves, which demands language skills. In spite of the barriers they encounter, I saw in these young Paulistanos a drive towards occupying new spaces in the global society. Further research could explore how different academic cultures might provide them or not with the necessary environment to build something out of this drive. Networks of culture, commerce and science are actively built by citizens such as the ones I interviewed, and I hope I gave the reader a glimpse of the challenges they face in this important web-building work.

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## ABSTRACT URBAN GEOGRAPHIES AS MEMORY WORK

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Memory is enfolded in the various elements which constitute the urban landscape and as such, the elements which together create it, like roadways, buildings, parks and greenways, transportation systems, public and private spaces etc are territorializing and constitutive of a cartography of memory. Thus the experience of landscape can thus be expressed as the imagistic record of the discursive unfolding of the narrative of memorial revelation. In this paper we are concerned with two methods: on the one hand, collective and collaborative narrative discourses and on the other, the activation of invisible spaces through locative media in order to foreground the processual transformation of territory to reveal the political, social and technological implications resulting from changes to urban texture. The discursive unfolding of these divergent narrative types provide the premise for the mapping of urban, artistic, cultural and social territories not in terms of pictorial images but in terms of relational intensities and densities as spatial distribution.

The present article outlines the relation between the constitution of memory and the construction of experiential territories as imagistic process through a discussion of the implications unfolded in the 2012 installation *airCity: Art#ocupaSM* in Santa Maria, Brazil. And to better deal with the relational, machinic aspect of territorialization, we are giving a different spin to various concepts such as territory, landscape, image and memory. It is part of the function of this paper to elucidate this conceptual re-alignment in order to conceptualize an archeology of memory not as cumulative sedimentation but as experientially integrative yet capable of temporal articulation in terms of projections of past, present and future.

Vila Belga is a neighbourhood of the city of Santa Maria, in the southernmost province of Brazil, Rio Grande do Sul. The city itself currently has 270,000 inhabitants and its economy is based on services, light industry, government services, education and agriculture. The Vila Belga neighbourhood was built between 1901 and 1903 along European architectural lines as a railroad community to house and accommodate the Belgian immigrants destined to work in the offices and workshops of the Belgian "Compagnie Auxiliaire de Chemins de Fer au Brésil". The railway placed the city of Santa Maria on the map, so to speak, by connecting it with the rest of the Brazilian Empire through the Sao Paulo—Uruguiana rail line. In creating Vila Belga, the concern of all parties involved was not one of simply creating housing for the workers but of genuinely creating a community.

Through the railway cooperative and the railway workers' union, the Vila Belga rail community took care of its own. The railway cooperative saw to the general needs of the community, such as food, clothing, furniture etc. And together with the company, they set up technical schools for men and schools for women, built a hospital to serve the community, created a recreational social club, etc so that a sustainable ecology with a beneficent quality of life was in place. The railroad and the trains set the pace to the lives of the residents, determined the rhythm of the community's activities in accordance to the timetable of the trains' constant steam whistles, and kept active the productive energies of the community as an extension of the workings of the railway as an engine itself. And here we posit the existence of a collective machinic assemblage between the community enmeshed with the railway, between the human society and the machinery of rail, as a coherent, functional entity. However, after the privatization of the railroad in 1997, Santa Maria was sidelined and as a result the station and workshops lost their *raison d'être*, and were thus progressively abandoned. Since then, with the demise of rail in Brazil and its replacement by truck transport, the latest generation of the Belgian residents have dispersed and the neighborhood lost all sense of meaning and collective memory.

Thus, in May 2012, various buildings of the now defunct Vila Belga railroad station were occupied by artists, academics and multi-disciplinary researchers taking part in the *arte#ocupaSM* (<http://arteocupasm.wordpress.com>) research/creation event for 5 days of intense artistic coexistence to better understand the process of urban decay as memorial disintegration. As part of the occupation, an interactive immersive installation was created *AirCity: # ocupaSM* which occupied the now abandoned main administration building of the Vila Belga Railway. The drive of the project was to activate the "invisible space" as intangible heritage or in other words to awaken the virtual aspect of physical location as memorial reconstruction, by combining social, political and artistic research/creation methods with digital devices. And to this effect, a group of artists and interdisciplinary researchers, namely, Renato Hermes Hildebrand, Andreia Machado Oliveira, and Daniel Paz from Brazil and Efraín Foglia and Jordi Sala from Spain, proposed new possibilities of deriving meaning from the analysis and interpretation of relationships arising between narratives, spatiality, temporality, and urban territorialities by exploring the possibilities of narratives created by technological interventions in virtual and physical space.

The planning and pre-production of the project was entirely web-based as the various participants hailed from two continents, and those from South America separated by its vastness. From the invitation to hold an "occupation" in Vila Belga, the Brazilian on-location team began pre-production by collecting and assembling bits of data expressive of the disposition of traces of being in the urban landscape. Researchers carried out on-site video and audio sampling, recording ambient sounds and collecting images to compose and composite with video interviews of former railway employees and residents of the neighbourhood. In the interviews, intergenerational subjects would relate their experiences as residents, workers and citizens and reflect on the changes to their life and lifestyles brought on by changes to the urban texture.

The second phase of the artwork project consisted in the gathering and pulling together of data on site which could be made to work with technologies and techniques developed in other *AirCity* projects in Sao Paolo and Barcelona involving the use of mobile devices, wireless networking, mapping and sound—all articulated through *PureData*. In the Santa Maria *AirCity* project, mobile phones would be used to activate audio files which recount a location's intangible reality as the affective disposition of the character of location. More information on the *AirCity* projects can be had at [mobilitylab.net/aircity/](http://mobilitylab.net/aircity/).

In looking back at the occupation and the airCity: Art#ocupaSM installation as a creative event, one cannot say that it unfolded seamlessly as originally conceived. We cannot say that the artwork as product which sums up the event was a triumph; the achievement of a research/creation project cannot be solely gauged by its objectile outcome: the lasting value generated by a creative gathering such as airCity:Art#ocupaSM lies elsewhere. Usually one looks at the artwork, the outcome, as the end all and be all of the process of creation but within the research/creation process of this event, what also bears looking into is the process itself as outcome and the conceptual conclusions which can be drawn from the experience. And here we're not trying to turn a sow's ear into a silk purse. It is of course easy to say that the project had not been completely thought out, that the planning was not completely carried through or that the artists and researchers did not have their act together. But the approach was different: given the Vila Belga location and the AirCity techniques and technologies as enabling constraints, the creative process was left indeterminate to see what would unfold from the association of artists, academics and multi-disciplinary researchers as an immanent process of creation. Had everything been thought out and predetermined, the role of the participants would have been different. As such, the open-ended process allowed for the emergence of the happening of creation as happening as opposed to the execution of a pre-established protocollary assemblage. In this respect, the event exceeded expectations: a creative ecology of sundry participants worked together to generate on the spot a working multidisciplinary research/creation methodology as a foundation for future collaboration.

As mentioned earlier, the goal of the project was to better understand the process of urban decay as memorial disintegration. While the AirCity group worked with the technical problem of activating the space and programming the software, the Santa Maria group was working on coming to terms with the past. The on-location video recordings of the interviews were parsed to expose fragments of modalities of being as the activation of bodies by and within that urban territory, not as subjugated human bodies simply responding to prescribed rules of conduct or simple predetermined actualizations of virtualities but rather as bodies producing their own horizons of regulation as expressions of a technicity (Combes 2012: 98) of association with Vila Belga as an associated milieu with the railway. These bodies expressive of territorializations, of relational enmeshment with the railworks, would perform gestures as expression of rules of conduct evocative of the perpetuation of the mode of being of the community as a machinic assemblage. The values implied in the technical realities of the assemblage constitute an ethics, not in terms of a normative prescription for being but as an account of the mode of relation between humans and the associated milieu of the railway and its community.

As it turned out, despite the fact that the two groups were working on processes of memorial occupation in order to identify and foreground ecologies of being, the two were on divergent paths. The researchers carrying out the field-work in Santa Maria were figuring out how Vila Belga as a territorializing machinic assemblage had worked as an associated milieu and the second group was working out ways to activate the space with locative media to call attention experientially to the presence of process and its operational unfolding as memory. Although the drive of both groups was to find ways of revitalizing the community by understanding the dynamics which yielded the current situation as the resultant of processual advance, both approaches consider memory as integrative. On the one hand, we have the expression of memory as a reconstructive impulse for times gone by and, on the other hand, the exercise is to become aware of that which is being shared, concretized in actuality and being integrated as experience.

We emphasize the point that what is at stake in both approaches is the consideration of the integration of experience into the general unfolding of actuality as memorial process. To think of memory in terms of integration is an odd premise in that nowadays memory is almost exclusively thought of in terms of the stockpiling of information as images and not in terms of how experience as information comes together into a coherent whole. To consider memory as an integrative process, as expressive of the consolidation of experience, (re)contextualizes the discourse on memory and (re)members it to the historical tradition from which speculative thought emerges. Up to the 17th century, memory was methodologically integrative where words associated with memory such as recollection, recall and remembering allude to this integrative process in that they bring forth the idea of reattachment or gathering together—as in the act of gathering one's thoughts in attempting to organize one's ideas so as to give them order and structure. Memory guides the (re)constitution of the relational as the eventual coming together which (re)constitutes the event through its (re)petitioned becoming by not only (re)calling itself into being, (re)collecting the elements and (re)membering them as the unfolding of the actuality as event. The information of the event as memorial is durational through its gradual coming into definition as a body through the iterative (re)cognition of its self-expression as an individuation as it is (re)petitioned to participate in its assembling, in its (re)collection of its constituent elements as a machinic assemblage within the memory circuit in which it is operative. And here we need to add that when memory is actualized, it is not as mere pictorial imagistic representation of the past, but as an integrative process where the memory-image as a becoming is actualized as it is (re) produced and (re)cognized in its *réalisation*, as it is (re)called into being through the (re)collection of its constituent elements and (re)membering them as part a coherent, machinic, operational flux. We use the French verb, *réalisation* here instead of realization because it conveys the performative *énonciation* of the making it "real" and the subjective directionality of the becoming actual.

Thus, the on-location group sought to activate and reify Gilbert Simondon's concept of the associated milieu as the expression of memorial process in order to analyze the co-arising relations that take place between the participants and the conditioning territorialities as an environment where the milieu allows for a non-static, dynamic coming-to-being as an event of taking-form as experience. In this way, we understand the associated milieu as the setting and environment of concretion where participants condition each other and simultaneously, reciprocally, inform their mutual becoming as a subjectifying dynamic. The associative milieu allows the bringing together of the various participants in the event where memory is expressive of the aligned directionality of the causal efficacy informing and guiding the becoming.

With the on-site video and audio sampling and interviews, the researchers were (re)calling into being and identifying the habituated conditioned movements and gestures created by occupation and (re)member these relational conditionings to the experiencing of the location as territorializations, as event taking form. This could be explicated through the (re)calling and (re) collection of all the constituent relations conditioned by the environmental participants as an ecology, we end up with an operational solidarity as a navigational familiarity constitutive of a cartography of memory as a recurrent, reciprocal causal dynamic. In the words of Brian Massumi, that which we eventually end up with is "not the result of a simple step-by-step accumulation, or of a piecemeal adding together of elements. It is non-decomposable. It is holistic. It's not a structure... It does not add elements together to form a structural unity. Rather, it is a holism effect that adds a whole new dimension of existence to the elements' diversity" (Massumi, 2009: 11).

As such, occupation has become the event as the consummation of the relational possibilities proffered by the agencement of the conditionings in place as memorial integration—here agencement is understood simultaneously as agency and information immanently arising from the relational conditioning as causal determinant resulting from the disposition of the participants as an assemblage. The agencement as a fielding of conditioned relationality as subjective arises from the immanent concretization of territories as landscape which takes place as a plane of experiential consistency, as operational coherence where activity informs the becoming as the eventual (re)calling into being of the individuation as memory. The group was moving collectively towards understanding their occupation as a memorial reconstitution of occupation not as a spatial, volumetric construction but as the location that houses the repeatable expression of the conditionings of relation in terms of gestural performance as process, i.e. occupation as the location of memory. The locus of occupation as activity taking place where it is taking up space is easy to conceive as the body of the event as activity and its shape as the manifestation of the event itself at the location where it takes place in its unfolding.

Thus, the body of the event as occupation integrates space and time as the expression of memory. Composed of an infinite recursivity of extremely complex junctions of inter-penetrated territorialities, these enfoldings of relations and potentials are integrated into vast expanses of relational operational coherence which in turn are capable of enmeshing associatively as part and parcel of other individuations. Within the dynamic at play and with the use of locative media—in their convergence and their hybridization—concepts which characterize relation take on a different hue: interactivity, ubiquity, the liquidity of spaces of representation and the reconfiguration of deterritorializations of real and virtual urban spaces are aligned within a different ontological discourse. As used in *AirCity: # ocupaSM*, locative media draws attention to the presence of process and its operational unfolding—if we see information as the “very operation of taking on form” (Combes, 2012: 9), the artwork informs participants as territorializing experience, activates an abstract cartography of intensities while rendering them more aware of their information as participants in becoming as they perambulate through the landscape. The *airCity* technology sought to imagistically identify, foreground and demonstrate the affectual elusiveness of relational process while revealing the indiscernible ‘hidden’ to the stratified plateaus understanding experience by heightening our awareness of occupation as integrated spatial goings-on.

The combination of the two approaches, the associative milieu as the setting and environment of concretion and the locative media as revelatory of the affectual foundation of experience as process, is what allows us to speak in terms of machinic assemblages of memory. If we define a machine as an assemblage of moving parts that work in unison towards a common objective, we can then ask, what represents the common objective of the combination of the two approaches? It is the positing of memory as the converting power, as the intermediary process, between the virtual of pure potential and the actuality of experience. Memory is then an invisible agency which integrates the multitude of participating constituents by (re)calling, (re)collecting and (re)membering them as a body, as an ecological economy of functional becoming. Thus, the performative integrative (re)constitution of the relational as occupational is not only applicable in terms of reconstituting the image of the past it is the constitutive dynamic of the coming together of actuality as memorial process.

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## Other Urbans: 3 SEAs

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## URBAN PRAXIS ATHENS 2012. AN ANALYSIS AND EXPLORATION OF LOCATIVE-MEDIA PROJECTS MADE IN ATHENS, BASED ON LEFEBVRE'S LIVED EXPERIENCE ANALYSIS AND RHYTHMOLOGY METHOD

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### **Abstract**

People's organisations are creating a context for social action and urban praxis in Athens. Due to the lack of any state or government initiatives, new rhythms are emerging from the streets. Mediated, supported and maintained by social media platforms and location based services such as Facebook, blogs and smartphone applications, these organisations utilise these as tools to bring people together, under a common context: to share and exchange things, ideas and actions. This paper argues that psychogeographical maps, smartphone applications, Facebook groups and event pages, which mediate actions and ideas inscribed in these projects, depict new rhythms emerging in the city of Athens.

### **1 Introduction**

Today, the merger of physical space with the digital world of information creates a new city that is techno-synthetically composed. As the rhythms of the city change and are intertwined with instantaneous communication technologies, Lefebvre's method of observing social space - via the study of rhythms founded within urban space - becomes even more prominent. The effectual level of the body, as expressed by Lefebvre, is the last domain in which political consciousness escapes the monumentality of the urban environment. Locative media's spatial qualities of augmented and hybrid spaces offer new ways to navigate space by annotative maps and contextualising location.

Projects discussed in this paper utilise social media and location-based technologies to reveal an alternative lived experience of Athens away from news media representations and assumed passivity of the Greek citizen. As will be shown, non-profit alternative organisations that cater for a community of people offer real and virtual spaces for mutual participation and congruent interaction. This paper explores three representative examples of social action in Athens, using Lefebvre's theory of rhythmology.

Athens's spatial configurations of power, class and race need to be documented; its rhythms must be studied. Projects such as the ones discussed in the paper offer the grounds in which all of these dynamics can be investigated and documented in order to reveal a new Athens freed from the associations brought forth by the cacophony of mass media misinformation, the propagation of party ideology and right wing politics, racism and social discrimination.

## 2 Spatial Theory

During the '00s, and in literature of locative media and location-based games, Lefebvre's theory of the production of space appears as a relevant theme in the discussion of spatial perception through the use of locative and wireless technologies (Foth et. al. 2009; Flanagan 2008; Tuters 2004; Sotamaa 2002). Equally, Lefebvre's theory of rhythmology; observing social space via the study of rhythms offers the method in which to observe the rhythms of the city as these change and are intertwined with network and communication technologies. Lefebvre situates rhythm inside the lived experience; "rhythm enters into the lived" (1992). With the increased use of smart devices in everyday life it can be said that technical mediations such as electronic maps, smartphone applications, social and Instantaneous Communication Technologies (ICTs) in general, form part of the lived experience in the urban environment and the rhythms of everyday life.

### 2.1 What is Rhythmology

For Lefebvre the rhythmologist must at once remove herself from routine, brought about by division of time, and at the same time include the linearity of time in the study of rhythm. The rhythmologist must study rhythmic cells and their effects (1974). The rhythmologist "thinks with his body, not in abstract, but in lived temporality" (Lefebvre 1992), therefore the rhythmologist must "modify his perception and conception of the world, of time and of the environment" (1992). For Lefebvre there is a differentiation between what is represented in space and what becomes 'lived experience'. He uses two terms to describe this process: presence has a locational character and present a temporal one: "present the this" (1992) "presence is here" (1992), or as Shields puts it, presence as here and present as now (Shields 1999). Lefebvre proposes that the totality of the present must be dissected and analysed in order to arrive at the research and study of rhythm, and therefore presence in which rhythm is situated as a spatiotemporal whole. The rhythmologist's aim is to spot and contextualise presence by removing the qualities of present (representation, commodity fetish, and division of time) from the presence. Presence is rhythm; it is Lefebvre's way of articulating the process of spatiotemporal becoming. Present is a product of commerce and presence situates itself in the poetic. Present can be thought of as appearances and representation and presence as the rhythm and moments encountered in everyday life.

### 2.2 The Body

The body plays a significant role in Lefebvre's thinking. Shields attempts to define presence as the philosophical subjectivity of the body (Shields 1999), therefore for Shields Lefebvre is a humanist. The humanist in Lefebvre situates the body as the incarnation of the possibility of existing both inside space as a concrete abstraction and also of the possibility to rise above it. Lefebvre wants to bestow on the individual's body an autonomous moment of sensation, realisation and knowledge; an all-consuming experience beget by the senses, the mind, forces of representation and history. Lefebvre sees the body as "the site of resistance within the discourse of power in space" (Elden 2004).

## 2.3 The Lived

The term 'lived' for Lefebvre is a code word that carries in it, firstly, an opposition to narratives of power and control and, secondly, it allows for a susceptibility to feelings, experiences and senses to be mixed with the dynamic forces of knowledge, ideology and power. In the question if the lived experience has positive or negative effects, Lefebvre positions it on both sides. On one hand social space is "the locus of prohibition" (1974) but is also the space of the body and, therefore, "the affirmation of life" (1974). Lefebvre wants to bestow on the individual's body an autonomous moment of sensation, realisation and knowledge; an all-consuming experience beget by the senses, the mind, forces of representation and history.

## 3 Locative Media Discourse

Within locative media discourse, it can be said that experimenting with location-based technologies creates a possibility inside the urban environment of the city, and within the context of the everyday life and rhythm, to surpass given notions of space. This, therefore, creates an opposition inside the assumed passivity of (homogeneous) urban space. In the 00s, locative media projects such as psychogeographical and annotative maps, location-based games and urban screens showed how the combination of location-based technologies can mediate to create participatory environments for local and situated participatory interaction – creating localities of congruent interaction (see Drakopoulou 2010; Wright 2007; Hemment 2006; Tuters 2004, 2012).

The projects discussed in this paper, in different ways, document the lived experience and the changing rhythms of the city of Athens. They use the city of Athens as a blank canvas in which to enact social activity mediated by networks, digital technologies and locative media applications. Athens needs these kinds of projects that are based on documentation, mapping and sharing of ideas, and creating places for social interaction in order to formulate and trace its rhythms and cultural identity. These projects document the lived experience by employing technical mediations to create virtual and actual gatherings of people and offer new readings of Athens as a dynamic urban space full of oppositions, rhythms and old and new spatial configurations. These projects utilise social media to provide a necessary platform for social action, facilitating a dialogue between Athenians.

## 4 Three Examples

As will be shown, the psychogeographical map of Mapping the Commons, the rhythm of production in the multiple activities of Babyfeat and the interventions of Atenistas to the rhythms of everyday life in Athens' urban environment - reveal a new Athens, full of oppositions, contradictions and social upheaval. They reveal different, alternative and new rhythms being enacted on the Athenian urban landscape. Looking at these activities as alternative lived experiences in the city of Athens, can be seen as models for an urban praxis facilitated and mediated by social and location-based media.

### 4.1 Atenistas

The Atenistas group started in 2010 (atenistas.gr), their actions and events include street cleaning, graffiti removal, street parties, revival of recreational areas such as playgrounds, small parks and pedestrian areas in Athens and charity events. Atenistas are seen as a blue print for social movements in Greece (Malkoutzis 2013). Atenistas have a clear and distinct graphic identity and mainly use Facebook to advertise their actions, events and gatherings. The website provides

information about the group and includes an annotative map for citizens to spot infrastructural problems on the streets of Athens. The interest here is on the fact that Atenistas adapted Facebook as their main communication tool as it became established in Greek culture. The lack of any municipality action has sprung up an almost grassroots organisation by an awakening middle-class of Athenian suburbia. There's a strong element of 'reclaim the streets' in the Atenistas group – but their activism is lightweight as they do not engage with any political ideas.

#### **4.2 Babyfeat**

Babyfeat (babyfeat.gr 2011) is a non-profit organisation and exemplary of social entrepreneurship, their motto is "solidarity, sharing and creativity". On the website members can give, buy, sell and exchange baby accessories and clothes, with the smart phone application members can locate others nearby, reserve and exchange items. They frequently organise swap parties, bazaars and educational events for parents and children. In many cases, they work with charity organisations and municipalities initiatives. They are supported by donations from small businesses and their members. They have 10.000 active members and also help large families all around Greece. Babyfeat is a DIY organisation with endless support of volunteers. The interest here is that Babyfeat employ different kinds of platforms to support and maintain their community: the swap website, smartphone application, swap parties bazaars and events. This combination of platforms allows Babyfeat to function as an organisation and as a community.

#### **4.3 Mapping The Commons**

Mapping The Commons (2010) is a series of conferences, events, workshops and projects, one of which is a psychogeographical map of Athens that documents central parts of Athens with the use of short video clips (see [meipi.org/mappingthecommons](http://meipi.org/mappingthecommons)). For example one clip titled: "Migrant practices" by Haunt of Albanian Migrants (a blog of the Albanian community in Athens) uses text and images to address the negative coverage in the news of second generation Albanian youth, who took part in the Athens riots of 2008. Even though Albanians have settled in Greece since the early 90s, Greek culture is still discriminatory towards them (Roubanis 2008). The video acts as a platform to expose and therefore discuss these issues, which, more often than not, are ignored in mainstream media. Another clip titled: "Mapping the Posters, Athens" by **Μαρία Μαλαπέτσα** is almost a video art piece. It depicts colourful collages of wallpapered tapestry on abandoned buildings facades, doors, walls and columns made by the constant layering old and new posters, sales and letting signs. It asserts an aesthetic value in the dressing of these walls and facades. The layering of posters advertising from street rallies, to concerts, to products, can be seen as a rhythmic collage of everyday life in Athens - depicting the rhythm of the city of Athens.

All those videos reveal a multicultural Athens, full of vibrancy and difference. A very different view to the one shown on mainstream Greek media outlets. These kinds of representations are important because they depict alternative rhythms of everyday life in Athens.

#### **4.4 Depicting Rhythms of Everyday Life**

Although Lefebvre asserts that "No camera, no image or series of images can show these rhythms. It requires equally attentive eyes and ears, a head and a memory and a heart" (Lefebvre 1974), the street-level quality of these depictions offer a street-level viewpoint that Lefebvre would encourage as voices coming from the observational level of rhythm analysis. For Lefebvre it is rhythm that can bring change by breaking-up and dissolving the linear and cyclical repetitions of everyday life. He

examines the level of human and bodily everyday experience and the rhythms of everyday life in order to articulate what constitutes a lived experience. Applying the method of rhythmanalysis, it can be said that the lived experience is documented in content, circulated in smart devices and uploaded on electronic maps and social media. The two clips mentioned above, offer a street-level viewpoint of Lefebvre's rhythmanalysis and an opportunity to re-contextualise urban space, as did the psychogeographical maps of the Situationists and locative media of the 00s. These short video clips are used as observational tools for the rhythmanalysisist.

Observing these projects as tools for the rhythmanalysisist, it can be said that they depict rhythms of everyday life, they produce rhythms, they open dialogues for the creation of rhythms. Babyfeat's call for solidarity, Atenistas' street interventions, Mapping the Commons' psychogeographical map, are all examples of a positive present in Athens. These rhythms are depicted and mediated by location-based technologies and social media networks. Athenians congregate in Atenistas and Babyfeat events, upload short video clips in a participatory mode of interaction and also create alternative currencies and impromptu neighbourhood economies. A new Athens is revealed through these projects.

## 5 Rising Culture

Currently, there are numerous swap and timesharing websites in Greece. Between 2006 and 2010 there was a 53 percent increase in Internet access in Greece (Hellenic Statistical Authority 2010). Due to the lack of objectivity in the national media, there's a rise in blogs and social media use, Greeks are turning to the Internet as an alternative news source (Standard Eurobarometer 76 2011). The international press has noted on the current flourishing of the arts in Athens (Cloughton 2012). There are many other projects, relating to spatial theory and exploration of Athens' character. Hidden Athens (2011) is an art exhibition with the theme of Athens' ever changing urban landscape; Athens Plaython (2011) is a series of workshops with games played on the city streets; Locunet (2008) is a collection of projects, papers and events centered on locative media theoretical framework (see Charitos et al. 2009); Athens Wireless Metropolitan Network (2002-2010) is a group experimenting and building free wireless networks; Open Street Map is a wiki-based map made by peoples' contributions; Reconstruction Community is a website with text by a group of academics and includes an audio soundscape map of Athens (by D. Kotopoulos. See <http://www.reconstruction.gr/soundmap/General.html>). Lastly, an electronic map locates bars and cafes with cheap drinks (see <http://www.ftinapota.gr/>). From the commercial, artistic and academic sectors, all these projects indicate a flourishing of locative media projects and approaches currently being developed in Athens. Electronic maps of Athens (psychogeographical and user annotated) act as alternative representations of space, contextualising particular locations in Athens.

Text messaging, email and social media are tools that mediate and facilitate the gathering and communication between groups of people and social network in public spaces. Smart mobs and flash mobs are organised through social media, email and message forwarding (Rheingold 2002; De Souza and Firth 2010). A recent study on the Arab Spring and the Indignados movement notes that: "Social media contribute in the construction of a sense of political locality" (Gerbaudo 2012). Facebook's event function, smart phone applications and text messaging are tools for symbolic and technical mediations; "of people's physical assembling in public space" (p. 40). The movement of

gathering in public squares such as in Athens “have acquired an extraordinary symbolic importance in contemporary movements, as spaces for the gathering of a constituency that does not feel represented by existing organisations and institutions” (Gerbaudo 2012). On a pessimistic approach, the rise of self-management approaches in Greece and Athens in particular, can be seen not as a triumph, but rather as a last resort and a symptom of survival in the current crisis (O’Lory 2013).

### **5.1 Urban Praxis**

In this paper, the conceptual framework that combines these highly divergent examples is to look at these projects and organisations under the lens of urban praxis. Electronic maps (psychogeographical, annotative), blogs and Facebook groups facilitate and depict the urban praxis that is enacted by these projects and organisations. Social media mediate and facilitate the gathering of peoples and community creation and maintenance. Locative media maps reveal a new Athens and new rhythms of lived experiences. All these can be seen as tools that mediate social action and facilitate an urban praxis. Urban praxis here is defined in the sense of an intervention to the urban environment by impromptu bazaars, exchange markets, street interventions and platforms in which minorities can express their views. Urban praxis in the sense of appropriation and re-appropriation of the urban environment of Athens.

The congregation of bodies for an alternative impromptu market in Babyfeat and the coming together of people for the production of a DIY ephemeral playground in the Atenistas are testaments of creative resistance. Coming from all strata, these projects reveal citizens taking action. The rhythm analyst looks at the signification of rhythmic assemblages of scenes from everyday life, of interactions of rhythms of everyday life. Social media facilitate the quick dissemination of the messages inscribed in these projects mentioned in this paper, which are reaching out to the community with an aim for regeneration and mapping of current practices in the Athenian landscape.

### **6 Conclusion**

Looking at these projects from a rhythm analytical perspective, the social entrepreneurship of Babyfeat, the street-level interventions of Atenistas or the psychogeographical maps of locative arts in Athens depict a new lived experience. As per Lefebvre’s term, they create a presence in the Athenian landscape as opposed to a present that is fully populated by fear, uncertainty and instability - presence is manifested by the congregation of people who aim to regenerate, come together, create alternative currencies and therefore change the cyclical rhythms of Athens. The rhythms of Athens are changing: all these projects create a presence inside urban space and momentarily interrupt the cyclical and linear repetitions of everyday life. They are interventions to the urban environment and hereby create presence that is facilitated and mediated by social media and location-based technologies and applications.

All of the projects mentioned in the paper are not supported by government-related organisations. They are made and maintained by individuals who invest their personal time, skills and effort to actualise these projects. These projects reveal a different Athens, the Athens that is experienced in everyday life. Away from the sensationalist approach of the Greek media, these projects are a promise and living testament to people power. They do not pretend to present solutions, they rather invite individuals to take action. They utilise social media and blogs as tools to gather people in real actual space. They create new rhythms of urban praxis mediated and facilitated by social and location based media.

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## ABOUT/BY/IN OUT THE WINDOW: DE CERTEAUIAN PRACTICE ON LOS ANGELES METRO BUSES

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### **Abstract**

In recent years, the cultural economy and information and communication technology (ICT) literatures have proliferated, manifesting keen but distinct influences on how we shape our cities. In 2011, the John D. and Catherine T. MacArthur Foundation funded Out the Window (OTW) the first-ever video art intervention by, with, and for Los Angeles youth, artists, and Metro bus riders. The socially engaged art (SEA)-informed participatory learning experience illuminates a growing awareness of three critical trends in urban studies: (1) the continuing reality of underserved (and often politically voiceless) urban minority communities, (2) art's potential role in enhancing these groups' civic participation through innovative uses of urban public space, and (3) the promise of ICTs as a counterweight in the public realm for discourse and community development as other aspects of public media suffer an overall decline.

Realized in collaboration with four Los Angeles community-based media arts organizations and the cooperation of the bus system's television franchisee, OTW engaged youth and community-based artists in producing relevant and meaningful videos about their neighborhoods and lives for the L.A. Metro bus system riders. The videos were shown on the buses one week in June, and again through October and November 2011. Following each video, a question prompted bus riders to reflect and, if they liked, respond via text, thus engaging in SMS-enabled discourse. These videos were shown in a public space used by the region's poorest and most transit-dependent population. Of Metro's estimated seven million weekly riders, roughly 40% live in households making under \$25,000 a year, and 70% of these households comprise three or more people.

From January 2010 through November 2011, the paper's author acted as participant observer of the Out the Window team's proceedings. In that time, she acted as primary research administrator, attending all team meetings, assisting with the 460 L.A. Metro passenger surveys, and helping to coordinate on-bus interviews with riders. In the end, among the most practical research takeaways included a strong exhortation not to abandon old media in the enthusiastic push for new ones, lest we even more marginalize already vulnerable communities. In addition, the project proved itself to be an embodiment of de Certeauian philosophy. Only just as it upholds his productive power of consumption, at the same time OTW demonstrates the usefulness of merging strategy with tactic.

## Introduction

French philosopher Michel de Certeau said, “to plan a city is both to think the very plurality of the real and to make that way of thinking the plural effective; it is to know how to articulate and be able to do it” (1984, 94). In 2011, *Out the Window (OTW)*, the first-ever in-bus video arts intervention and mobile communications-enabled participatory learning experience on Los Angeles Metro buses (or anywhere) realized de Certeau’s articulation of the plurality of the real and of its effectuation. In doing so, it illuminates a growing awareness of all the following critical trends in urban planning: (1) the continuing voicelessness of too many residents of underserved urban minority communities within digital discourses, (2) art’s potentially positive role in improving these groups’ participation through innovative uses of urban public space and the infiltration of private spaces, and (3) and the promise of information and communication technologies (ICTs) as a counterweight in the public realm for discourse and community development as other aspects of public media suffer an overall decline.



Accomplished as a collaboration of four Los Angeles community-based media arts organizations, the project taught 75 students from East Los Angeles, Echo Park, and Historic Filipinotown how to write and produce short, two- to six-minute videos exploring various dimensions of their city (Figure 1). In cooperation with the privately held bus television franchisee, those and other videos were shown on over 4,000 L.A. Metro bus television screens five minutes a day one week in June, and again for two minutes a day in October and November 2011, this time joined by 60 Angeleno artists. The 135 community video portraits veer sharply from the regularly scheduled Transit TV programming and into stories about most anything—the filmmakers’ lives in food deserts and the attending negative health outcomes, the treasures of their neighborhoods, their experiences as immigrants or as children of immigrants, alternative visions for transit and social mobility, and the real and imagined City of Los Angeles. Following every video, a question prompted bus riders to reflect and, if they liked, respond via text, thus engaging in SMS-enabled discourse.

*Figure 1. East Los Angeles student filmmakers explore and document their community.*

OTW provides practical evidence that an ephemeral video art intervention can help inform at least the second and third trends listed above, the articulation of both socially-engaged art (Helguera 2011) and information and communication technology (Apostol et al. 2013) for public participation (Figure 2). Such evidence emerged from a three-tier, mixed methods research design, implemented from January 2010 to November 2011, comprising bilingual surveys of 460 L.A. Metro bus riders before the *Out the Window* installation, bilingual interviews with Metro bus passengers and analyses of their SMS-texts received during the videos’ broadcast for “real time” responses to the new content, and participant observation by the author at all OTW meetings

and related events. In the end, practical takeaways included the encouraging substantiation of the OTW team's ambitions that agents can "infiltrate" private infrastructure (like the bus franchisee's programming) to return it to its purpose as a public domain, as well as the strong exhortation not to abandon old media in the enthusiastic push for new ones, lest we even more marginalize already vulnerable communities.

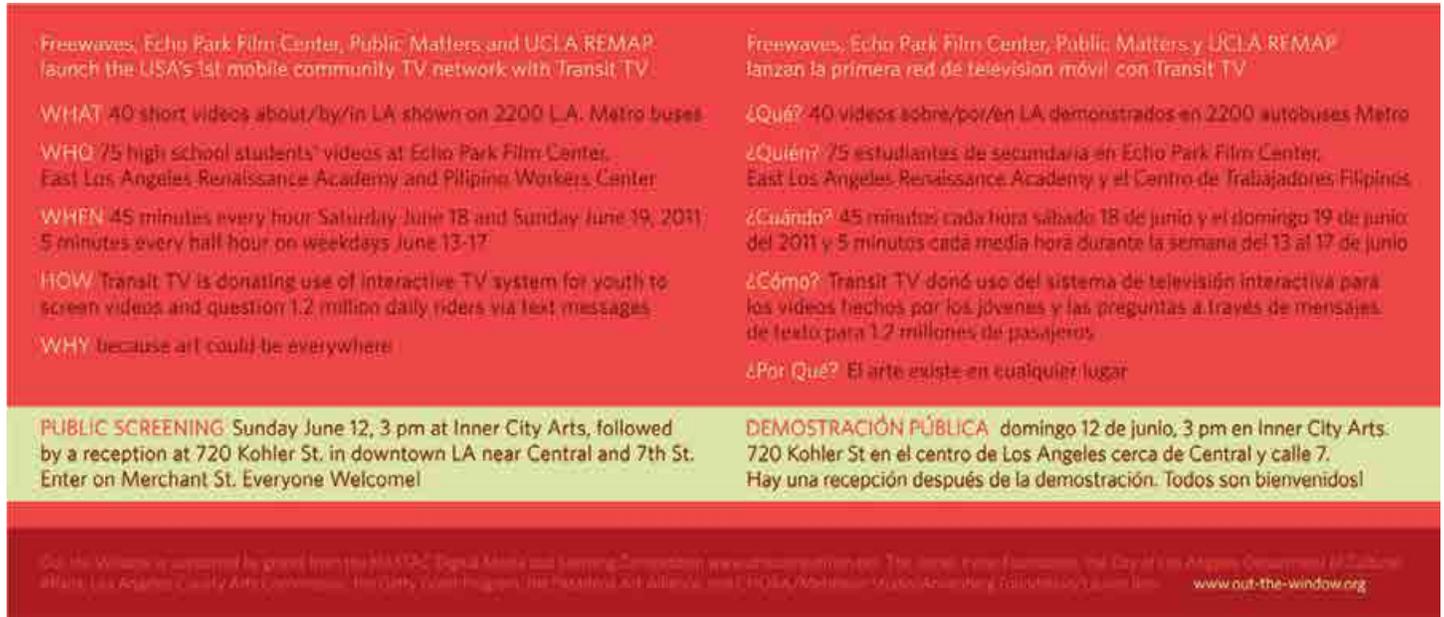


Figure 2. The postcard announcing the June bus presentation, in Spanish and English, as well as an invitation to a public screening.

### The L.A. Metro Ridership and Out the Window

Everybody drives in LA, or so story goes. Even planners resist considering Los Angeles as transit city. But it is one with a particularly disenfranchised ridership. In a Metro-published study, the estimated weekday ridership in October 2011 totaled 1119,721 passengers (directly operated buses only). Estimated calendar month boardings were 25,514,141, up from 23,728,320 just the month before, and up nearly two million since the prior October (Metro n.d.). A 2010 study of passenger activities found that of the million-plus weekly riders, roughly 40% live in households making \$25,000 or less per year, with 70% of those households comprising three or more people (Scarborough 2010). The poorest and most transit-dependent populations are the system's heaviest users, spending on average over an hour and a half on the bus daily, generally split in two 45-minute commutes (Williams 2006). As part of the OTW evaluation, we interviewed bus riders. Among our 460 surveyed riders, 59% self-identified as Hispanic/Latino. According to the United States Census Los Angeles Quickfacts (U.S. Census 2013), only 48.1% of the County's population was of Hispanic or Latino origin in 2011. Therefore, we observe a marked overrepresentation of Hispanics/Latinos among the L.A. Metro ridership. In addition, virtually all the Spanish speakers self-identified as Hispanic/Latino, which hints at stark asymmetries from everything from bus ridership to ICT usage between Spanish and English-speaking riders.

The most critical divide observed is the digital one. Within the OTW population, 82% responded as having and using cellular phones. While no relationship exists for between gender or ethnicity and cellular phone ownership or usage, there exist relationships between language, age, and cellular phone ownership and usage of all kinds (i.e. texting, photography, Internet access, videography, and game playing). Age is a meaningful factor. Cell phone ownership in younger age groups in both languages was more or less the same for the 18-30 and 31-50 year-olds. However, ownership dropped sharply for Spanish speakers 50 years and older; while 71% of English speakers over 50 said they had a phone, only 46% of Spanish speakers did. Likewise, the Internet usage findings were unequivocal: 62% of Spanish-speaking respondents said they never use the Internet. By contrast, only 17% of English speakers responded the same. Here again, age matters. English speakers in the 50 and older range accessed the Internet with much less frequency than their younger counterparts, but no Spanish-speaking respondents of that age reported using the Internet with any regularity. And while the younger, 18-30 year-old, Spanish speakers did say they had access to the Net, the figure was a meager 15%, compared with 67% of English speakers in the same age cohort.

By contrast, art appreciation was nearly universal. 93% said they do like art, but just half said they saw it on the bus prior to the Out the Window video installation. Understanding the aforementioned disparities, the OTW team still held SMS technology as a promising mode of discourse with younger riders, and conducted in-person interviews on the bus in hopes of capturing older rider responses. The texting and interviewed riders' responses were as varied as the videos themselves. Their impressions of, about, and in reaction to the videos were contemplative, revealing gravitas and hope, as well as the individuals' keenly felt connections to their home city, be it Los Angeles, another faraway place, or a combination of the two. In two of the straightforward, "literal" text responses (which I transcribe in original SMS form), we perceive Los Angeles' now-typical transnationalism. To the question, "What is your escape from L.A.?" one rider wrote, "my escape from l.a. is el salvador," and another wrote, "Im home PROUD TO BE AN ISLANDER GUAM USA." Here we comprehend L.A.'s status as adoptive home, and the strong sense of place-identity people carry with them, no matter how far the geographical distance. In some texts we see also the passengers' recognition of Los Angeles as an urban paradox, and finding a sort of sublime joy in it. In response to, "What's poetic about L.A.?" (Figure 3), one rider answered, "Whats poetic about la is the paradox of being the most beautiful disgusting place ive seen <3."



Figure 3. Juan Fish Testimonial, by Arturo Romo-Santillano, preceded the text prompt, "What's poetic about L.A.?" Full video available at [vimeo.com/31232659](https://vimeo.com/31232659).

### **De Certeau and Out the Window**

Recalling de Certeau, we must recognize the pluralities—the hopeful and the cautionary—and act on them advisedly. Here, I wish to apply the previous section’s findings toward a conceptual exegesis of *Out the Window* as a case study of de Certeauian practice. In his masterwork, *The Practice of Everyday Life* (1984), de Certeau proposes a number of things, two central hypotheses of which are: first, an overall repudiation of the antiquated producer/consumer binary, and second, a codification of strategies and tactics as political acts, and attendant preference for the latter. In this paper, I maintain *Out the Window*’s presentation supports—even celebrates—de Certeau’s productive power of consumption, and at the same time demonstrates the necessity for the yoking of strategy with tactic.

### **Productive Consumption**

De Certeau rejects the mutual exclusivity of the active producer and passive consumer. He asserts that the “rationalized, expansionist, centralized, spectacular and clamorous production” (ibid, 31) epitomized by our network television advertising and urban landscape-pockmarking billboards, “is confronted by an entirely different kind of production, called ‘consumption’” (ibid). In his view, we define consumers not by what magazines they read, clothes they wear, or modes of transit they use, but how they use them. Their accumulated acts of use and re-use constitute a culture; the uses of which de Certeau contends social scientists and planners ignore to society’s peril. He enjoins us to analyze how these “[u]nrecognized producers, poets of their own affairs, trailblazers in the jungles of functionalist rationality” (ibid, 34), operate in and maneuver through the city. For de Certeau, ordinary practices such as “reading, talking, walking, dwelling, cooking, etc.” (ibid, xvii)—and certainly ICT, the basis of legion new ordinary practices—suggest distinct political meanings and capacities, and so merit our attention.

Mobility is an especially significant ordinary practice, discussed as “walking” by de Certeau, and potentially encompassing various modes of on-ground movement. Anticipating James Scott (1998), de Certeau decries city planners for their totalizing, orthogonal constructions, along with their foolish belief that the city is at all comprehensible from the Corbusian bird’s eye view. In truth, “down below” is where “visibility begins” (ibid, 93). People move through the city and often off the formal roadways, fashioning their own uniquely personal pathways. Their acts thus create the “migrational, metaphorical” (ibid) city from the planned one. The city dweller’s circulation bears two meanings: the physical movement through the city and the communicative dissemination of opinions, preferences, ambitions, and memories. Combined, they yield a pedestrian act with three qualities that distinguish it from the Cartesian spatial system. First, it is present; a person’s journey through the city recalls a Lefebvrian (2003) centrality—any place can be the place at any given moment. This immediacy manifests the second quality, discreteness. Finally, mobility is phatic, communicative but not necessarily informational.

“Immediate,” “discrete,” and “phatic” describe both the *Out the Window* artist and passenger actions. As ordinary practitioners, the videographers literally “walked” the city, consuming cultures, cultural landscapes, images, sounds, and smells, which they then translated into the video works of art. Evoking de Certeau, these artists created reflexive projections to convey their passions for their idiosyncratic place or places, but stopped short at didacticism. Rather than transmit information, they simply submitted their stories, and the *Out the Window* team extended the conversation by inquiring about the passengers’ lives, observations, and opinions through the post-video prompts. Question marks punctuated the video narratives.

For the riders' part, their commutes comprise multiple ordinary practices. Like the artists, riders select their routes. Within the constraints of the transportation planner's predetermined routes and ICT's technological parameters, riders could compose personal journeys and messages of their choosing. Likewise, the Out the Window videos and post-video queries served as agency-affirming invitations to create their own art, which many readily accepted. Asked to conceive of videos of their own on the spot, in-bus interviewees offered quotidian narratives ranging from absurdist, to aspirational, to the ardently socially just (Figure 4). On the cheekier side, one passenger proclaimed, "I would make a video about monsters. I am an artist." Several of the video proposals, however, resonated with emotion. Sometimes hopeful and sometimes striking on larger structural concerns, they invariably feature our social interdependencies. The optimistic, "I would make a video about what can happen and change when you smile to a stranger on the street" joins with the recession-weary, "I would make a movie about opening stores so that people could have jobs because people need jobs," as if to say, per another rider, "I would make a video about daily life struggles, about things that relate to people who take the bus."

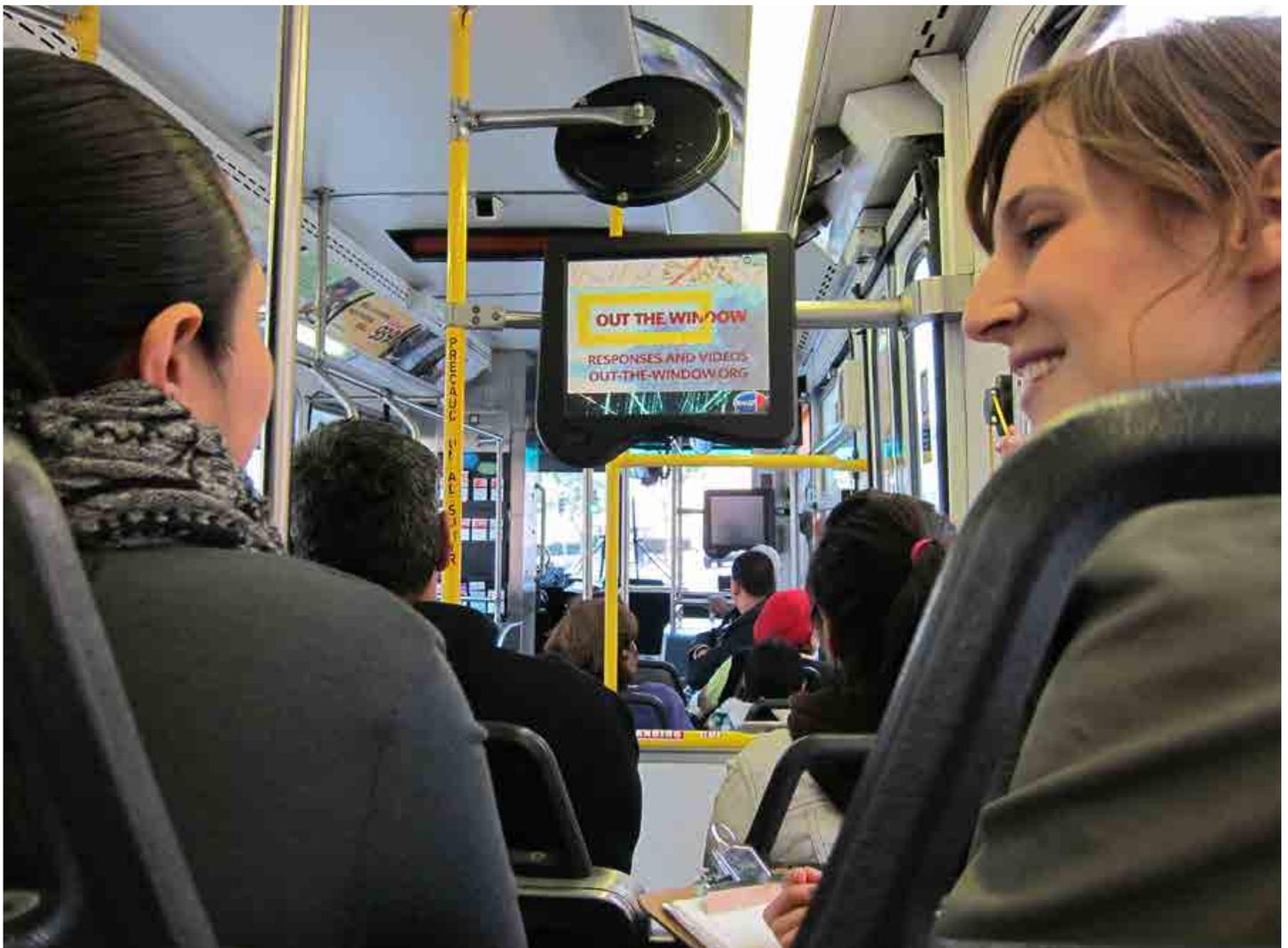


Figure 4. A Metro passenger and research team interviewer prepare to watch an Out the Window video together.

## Tactical Strategy

De Certeau's preoccupation with ordinary practices lies squarely with his belief that these "ways of operating" can, at their best, signify "victories of the 'weak' over the strong" (xix). Remember, the kernel is not the object of use, but the use itself, which de Certeau hopes to draw as a "trajectory" of practices. Here he emphasizes the interrelation between time and space, however he acknowledges the representative limitations. Our days and the element ordinary practices are processional, sequential movements through space, yet we chart them after the fact, into unidimensional, Cartesian maps. Also of concern and manifestly correlated with modernity's determination to, per Scott, "make society legible" (1998, 2), whatever the trajectories' final tracings, we struggle to capture the sorts of practices enacted. The trajectory concept fits almost too well, of course, with the bus system. Nearly one million people embark and disembark daily over the hundreds of miles of L.A. Metro bus routes, yet our best data visualization method for this diverse and dynamic population's movements remains a convoluted and compressed map. Places are points and their connective neighborhoods, lines. To remedy and fill in the colors and shapes of Los Angeles neighborhoods, the Out the Window team conceived of the project's videos and texts as media—and ICT—based interlocutors, respectively.

Having recognized the trajectory category's planar limitations, de Certeau pushed, devising the strategy/tactic spatiotemporal schema. A strategic act implies a space that can be isolated and protected from outer threats. Characterizing strategies as Cartesian, rationalistic, even militaristic in attitude, reifying the "triumph of place over time" (1984, 36), wherein the quartering of space upholds the measurement, control, and prediction, and assumes "a certain power is the precondition of... [the power of] knowledge" (ibid). Where the strategy has a spatial and sometime institutional locus, the tactic does not. Instead, the tactic is a "calculated action determined by the absence of a proper locus.... The space of a tactic is the space of the other" (ibid, 37). Conducted in enemy territory, occupation is impossible. "In short, a tactic is an art of the weak" (ibid). It privileges time as a tool for resistance, whereas strategy venerates space. Again, de Certeau overwhelmingly prefers the tactic.

But looking at Out the Window, I wonder whether it is practically useful to view them as diametric opposites. In Out the Window, the team did not distinguish between strategy and tactic, but opted for both. On the one hand, it is an art project that uses personal ICT and plays with place and time equally, rather than prioritizing one over the other. Videos months old were made new again with each fresh viewing, interpreted and added to slightly with every text. But on the other, as much as OTW assumes the appearance of a tactical practice by exploiting the buses' mobility and "the cracks that particular conjunctions open in the surveillance of the proprietary powers" (ibid), those bus televisions are explicitly and permanently media realty, private equipment ensconced in a public transit institution. The Out the Window team has no alternative but to negotiate with the television franchisee for airtime. In addition, we must remember the ICT tools of the tactic remain beyond the reach for many of these underserved riders, as well as appreciate that finding a de Certeauian strategic position is challenge enough for them. To what extent can we expect these people, particularly the undocumented among them, safely to engage politically in de Certeau's "space of the other"?

Nonetheless, I hold this clash in no way diminishes either de Certeau's or the project's relevance. If anything, belaboring the in-project distinctions asserts the heuristic, not hermetic, benefits we find in de Certeau's conventions of praxis. Socially engaged and civically minded practitioners as we ought to connect with these underserved communities over time to create new, hybrid, neither wholly strategic nor tactical spaces, for participation. For the information age and its compatriot the informational mode of development, occurring after de Certeau's writing, have so altered the relationship of space and time that we can and should privilege both. As we live in a world where genuine, material, and place-specific public space suffers the same devastation as the glaciers in simultaneity with the accumulation of Castells' (1996) space of flows, we are wise to attend to both.

### **Conclusion**

Out the Window underscores the communicative power of the ordinary, as well as questions de Certeau's belief that, "Casual time is what is narrated in the actual discourse of the city: an indeterminable fate, better articulated on the metaphorical practices and stratified places than on the empire of the evident in functionalist technocracy" (1984, 203). If the "empire of the evident in [the] functionalist technocracy" happens to be televisions on Metro buses, why not imbue them with de Certeau's "metaphorical practices"?

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## MALLEABLE ARCHITECTURE AND THE PURSUIT OF SPATIAL JUSTICE IN THE BRONX

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### **Abstract**

A design team in the Hunts Point neighborhood of the South Bronx uses methodologies of participation, performance and play to deal with the effects that the recently closed Spofford Juvenile Detention Center had on the community. The project results in the creation of a generative story-telling tool, a mobile media application that uses story-telling maps to facilitate public, location-based cinema walks, facilitating conversation on the evolving nature of urban spatial justice in New York City.

### **1 Introduction**

The recently shuttered Spofford Juvenile Detention Center, an imposing former youth incarceration facility that was the subject of many sobering detainee accounts, constitutes a physical, architectural and psychological point of contention in the Hunts Point neighborhood of the South Bronx where residents seek change. Haunted by stories of neglect and abuse throughout its fifty four year history, the Center has remained in limbo since March 2011, while the municipal government considers how to structure a request for development proposals. The public has not been allowed access to the site during this period, indefinitely delaying the process of community transformation and the fight for urban spatial justice in the area.

Through a project entitled Memories of the Future, the artist Melanie Crean, along with the activist and Hunts Point resident Majora Carter, will facilitate a series of participatory activities to discuss the past and potential future of the site, resulting in a series of performances and public projections to visualize those plans. The process will culminate with the design of a location based media application to that will serve as a topographical map of stories from the area, locating events in three dimensions according to where and when they occurred. The interface will evolve as new stories are submitted, serving as an alternative monument to the neighborhood, which will continue to develop as the physical Spofford building is in the process of being deconstructed.

This paper outlines and contextualizes a series of strategies derived from performance, gaming and urban intervention that were utilized in the project as tools to facilitate the process of reimagining potential urban futures.

### **2 Background**

Hunts Point is a neighborhood located on a peninsula in the South Bronx area of New York City, bounded by the Bruckner Expressway, Bronx River and East River. As of the 2000 census, it was home to approximately 47,000 residents, more than half of whom live below the poverty line. Only 40% of the total available working population is reported to be employed. The average household income is \$16,000 per year, compared to the United States average of \$42,000 per year. The combination of low income with the high cost of living in the city results in particularly severe poverty (NYC Dept. of City Planning, 2013). The area's precinct also reports high levels of violent crime, prostitution and illegal drug sales (Kerry Willis, 2012). Area residents, who feel a strong sense of pride in the changes they have brought to their community over the last two decades, none the less describe feeling frustrated by the endemic crime and lack of security in their neighborhood.

The Spofford Juvenile Center operated for 50 years in Hunts Point, developing a reputation for poor conditions that did little to positively affect the lives of its population. Kathleen Feely, former Deputy Commissioner of NYC Department of Juvenile Justice, the city agency responsible for operating the facility, was reported as saying in 2003, "I was so horrified ... it was not a place I thought children should be (Malikah Kelly, 2004)." Counter to the popular assumption that youth incarceration rehabilitates youth, or frightens them into changing their behavior, many formerly incarcerated people report that the violent culture and prevalence of gangs in youth detention facilities only "trained them to be a better criminal," and "prepared me for Rikers Island (Interview, Vergeli, 2013)." Detained children fall behind academically, and it is difficult for them to find employment after their release. The rate of recidivism is high (47% of youth released from DJJ custody return to detention within a year, and 76% of youth released from OCFS facilities return within 3 years (Juvenile Justice Project, 2003)), trapping the community in a cycle of poverty and violence.

The population and conditions at Spofford reflect the social imbalances of New York City. Ninety five percent of incarcerated youth are of African American or Latino origin, coming from the city's poorest neighborhoods (NYC Dept. of Juvenile Justice, 2003) As of 2003, the city spent \$9,800 on educating a child in its public schools, compared to spending \$131,000 to detain a child in its jails. Because of a significant drop in the youth detention population, Spofford was closed in March 2011, saving the city \$14 million dollars per year (Juvenile Justice Project, 2003).

### **3 Design Objectives**

The goal of the Memories project was to bring together a core group who would design a creative, generative, participatory platform for the Hunts Point community to tell the story of its history and potential future. The stories compiled in this platform, would function as a new form of monument, a foil to the dominating presence of the former detention facility. The project goals could be broken down into three main objectives: the construction of a core community of practice, an action group whose existing ties would be strengthened by the collective design of the project itself; the design of a participatory framework, to broaden the discussion of issues in the South Bronx into a conversation about urban spatial justice in New York City as a whole; and the creation of a generative portrait of the community that would continue to evolve.

New practices of socially engaged art play with social relations as form, reframing the previous roles of author, collaborator and audience into something that is relational and systems based, rather than unidirectional and fixed (Pablo Helguera, 2011). Community is a word that is widely used in social, creative and activist contexts. While it is assumed to have a singular connotation, it is often used to refer to a variety of constructions (Miwon Kwon, 2002). Here, I refer to the concept as three layers of an evolving system, roughly corresponding to the three levels of audience described by Krzysztof Wodiczko (Wodiczko interview, 2010). The first level of community can be defined in relation to practice, the core design group who is also the project's primary audience. The second is defined in relation to proximity, the residents of Hunts Point whose lives have been physically dominated by the Spofford structure, who will help to model future scenarios for the Spofford site in the interactive performances, as well as contribute their stories to the narrative maps. The third layer is the larger public, particularly New York City residents, who can best address issues of urban spatial justice by working collectively.

#### 4 Design Strategies

Though the work takes the Spofford building complex as its physical focal point, site in this case is considered to be something that is systems based: a nexus of socio-political, economic and physical variables that together determined the function of the detention facility. In recognition of this systems-based approach to site specificity, I have worked with the Bronx based activist Majora Carter, and a group of ten local community activists to employ a number of systems based, participatory approaches to reframe the Spofford, site based on the aesthetics of participation, performance and play.

Communities, as described above, are not static, they continually evolve, and like all structures, they must continually build, un-build and reconstruct themselves in response to change to remain structurally sound. Transitioning from a group of community activists with roughly aligned interests to a community of practice who collaboratively create an art work was itself an inherently social process at the heart of the work. The goal was to collectively develop a set of aesthetic and political goals that reinforced each other, that could promote a reflective criticality about the nature of the power structures inherent both in the Spofford system of detention, and in the art work that would be created in response.

To become a community of practice, the group would need to become what Jacques Ranciere described as a "community of narrators and translators (Jacques Ranciere, 2009)," where participants act as experts, proposing a framework for modeling responses to their immediate community, as well as interlocutors, to translate and facilitate dialog about the issues with a larger public. The fact that none of the ten participants had ever made art initially seemed daunting. The group's ad-hoc solution to this problem: have dinner and play games.

The psychiatrist Dr. Stuart Brown wrote that "play is nature's greatest tool for creating new neural networks and for reconciling cognitive difficulties. The abilities to make new patterns, find the unusual among the common, and spark curiosity and alert observation are all fostered by being in a state of play (Brown and Vaughan, 2009)." Game designers Katie Salen and Eric Zimmerman describe the expanded notion of play to be "wobble room" for things to move and change within a larger, more restrictive structure (Salen and Zimmerman, 2004)

Play was employed in this project to engage both of these spaces of possibility. The group began with a series of image theater games adapted from those designed by Augusto Boal (Boal, 1992). The games themselves often do not involve words, using body poses and interactions that connote systems and processes of collaboration, decision making, and power. Though technically simple, the games are both visually evocative and fun, leading to immediate outcomes. The first would be what the theater artist Bertoldt Brecht described as the distancing effect, or "making strange," the process of making common issues appear uncommon as a prerequisite for understanding that they can be changed (Andrew Boyd, 2012). Using a form of "interactive relabeling (Djajadiningrat, Gaver, Frens, 2000)" the mechanics of the games are mapped onto every day actions to de-familiarize and interrogate the systems of power that inform those actions. The objective is to expose the concept of what is "normal" or "natural" to be an assumption that is learned, which can therefore be unlearned, rendering the process of change, however slow or difficult, to be possible.

The games were used to strengthen the bonds of the group, and to generate a series of texts that could be used to engage community dialog through two different kinds of performance. As this paper is being written, the first series of vignettes is being used to create a Forum Theater play, another interrogative form of theater pioneered by Augusto Boal, which poses questions, and invites the use of participation and play to solve problems. Forum Theater plays are short skits about a problem that the main character cannot solve, written collectively through a process of negotiation by its actors, based on a combination of their real life stories.

After the short play is performed, the project's facilitator, called The Joker, asks if the audience can identify any problems in the story. If they can imagine a point where they might take an alternative course of action, they are invited onstage to improvise the revised situation. Results and potential ramifications are discussed with the audience, who are reframed as "spect-actors," modeling potential solutions to social problems. The play which is currently being written for the Memories of the Future project is an amalgam of problems the participants have attempted to solve in their community, and the Forum will be used to model potential solutions and futures for the community and Spofford site.

New forms of participatory work foreground performance as a site of group coordination in space over time (Jackson, 2011). In this project, in order to create a new social space, previous architectures that impacted social relations must first be addressed. The real-life story vignettes that inspired the Forum Theater play will also be used to create a projection performance, to re-project voices of the community onto the seemingly fixed architecture of the Spofford Detention Center. Combining spoken word performance with live text projection will endow the structure with a voice that has been transformed. It will begin to acknowledge the power that the physical presence of the building had over the neighborhood, whose white tower could always be seen, overshadowing the stature of the individual body.

The skin of the building will be reformatted as a virtual surface where a new text can be written, its symbolic influence reframed, its structure recast as a form of malleable architecture. Several participants said in initial interviews that the structure seemed to define the limits of the community's potential, that one day, either themselves or someone close to them would inevitably be incarcerated there (Carter interview, 2013). The projection performance would be an effort to rework this process of identification, so that in identifying with the structure, the community would leverage its power to see their social body looking forward, rather than trapping them in the past.

Krzysztof Wodiczko, when writing about designs that could facilitate dialog in new urban contexts, described the benefits of creating a "thing in between," a neutral zone or object that would help facilitate dialog amongst "strangers" from different social groups, possessing different amounts of political power (Wodiczko, 1999). The projection and interactive theater forms described above use mechanics of performance and play frame this third space as a site of dialog and future casting.

Projects that seek to create the space of possibility for change are most effective if they increase the agency of the group trying to affect that change, realizing that empowerment is an ongoing process that unfolds over time, rather than a single aesthetic gesture. For this reason, when working with a community to create an aesthetic work that attempts to describe it, it is particularly beneficial to collaboratively create a tool, mechanism or frame that allows the community to

continually describe itself, a form of generative documentary, which will function beyond the scope of the initial project.

The Memories project seeks to use the story fragments described by its core group of participants, as well as texts submitted by the public, to create what the cartographer Dennis Wood would describe as a narrative atlas (Wood, 2010), using maps to tell the story of a localized area. In this case, stories about Hunts Point will be presented in a location aware mobile application, located on a map-based interface in two dimensions according to the point where they occurred in the neighborhood, and stacked in three dimensions according to when they occurred. The application's interface will be rendered in 3D to create a portrait of the neighborhood in topographical, sculptural relief, representing layers from past to present.

Artists such as Rafael Lozano-Hemmer have used the term anti-monument to describe a work created from within a community to acknowledge its own accomplishments and foster pride, instead of more imposing structures which were traditionally imposed from without to foster fear and fidelity, such as the traditional conquering hero on horseback (Lozano-Hemmer, 2002). In the Memories interface, the shape of the landscape will continue to evolve as the public continues to submit text based testimonials, creating a narrative landscape or generative topology. This will continue to grow in power as a collectively constructed monument, as the Spofford site is regenerated through the process of redevelopment.

Media clips including stories narrated in earlier workshops, reenacted scenes, spoken word poetry and publicly submitted texts will be edited in space and virtually "tagged" to different sections of Hunts point via GPS. The spatial narrative can later be viewed individually via freely downloadable smart phone application, or through public Invisible Cinema walks. These guided tours of the neighborhood, lead by members of the core design group, would utilize the mobile cinema application as a platform for discussion of issues related to the community as they continue to evolve.

Experiencing the participants' stories and performances, embodied and contextualized via walking through the neighborhood that inspired them, will allow a new way of experiencing how meaning can be made through the project's content, context and structure. The mechanics involved in the interactive theater, projection performances, narrative topology application, and public invisible cinema walks are all meant to question the passive reception of imagery in our increasingly privatized public spaces, re-framing the city as a read/write platform, and empowering its inhabitants to critically engage with what is written there.

## **8 Conclusions**

When a community deals with complex issues of empowerment and change it is often necessary to resist the urge to oversimplify issues as mechanical problems to be unilaterally solved, which often results in reductive, linear thinking that does not appreciate the systemic nature of some issues. To change a system, it can be advantageous to reframe it, to find the leverage points to access power, where a small shift in one variable can lead to a big shift in the entire structure [22]. To facilitate agency in places where it was previously lacking, and to help minimize large discrepancies of power that allowed the issue to exist in the first place, it is beneficial to co-design a neutral third space for dialog between affected communities. Participation, performance and play are effective methods to help strengthen communities and negotiate contested spaces, while the design of generative tools allows the interface between spaces to evolve and adapt over time.

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## New Practices

Moderated by Omar Khan, University at Buffalo

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## RAPID PROBING: SETTING OUT METHODS AND A FRAMEWORK FOR URBAN INTERACTION DESIGN

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### **Abstract**

Urban environments are alive with embedded, pervasive, mobile and invisible technologies that inspire new opportunities for interactivity. Conventional interaction design processes that were developed for digital product and service design fail to capture and address the complexity and rich potential of urban scale interaction. This research presents first steps towards defining a framework for urban interaction design, in which these opportunities can be harnessed. Secondly, we include a new method for exploring interactive urban spaces called rapid probing. Rapid probing is a combination of rapid prototyping and technology probes. Rapid probes are simple, flexible and adaptable rapid implementations of interactive use cases that aim to understand the needs and desires of users in a real-world setting and inspiring users and researchers to think about new forms of interactivity in urban space.

### **1 Introduction**

Interactive spaces are becoming a common part of our cities. Increasingly, our buildings are responsive, advertising is personalized, and a wide variety of spaces hold dynamic information previously unavailable for interaction. As the potential for designing interactive experiences in the city continues to grow, the necessity for better design frameworks that address specific scales of interaction in the city comes to the fore.

At the individual human scale, the practice of interaction design benefits from a well-established methodology that takes into account the nuances and affordances of human behavior in relation to dynamic, interactive products and services. The design process, its steps, tools and means for evaluation form a clear series of strategies a designer may undertake to achieve successfully designed interactions (Preece, Sharp, and Rogers 2011).

In the urban domain where larger scale interactions occur socially, physically and in the public realm, solid foundations for interaction design are lacking. The established interaction design process of insight, ideation, and implementation (Preece, Sharp, and Rogers 2011) faces challenges of scale, permanence and budget when applied to an urban space rather than a product or service. While there are numerous practices that explore interaction design at the human bodily scale, such as interactive brand experiences, interactive exhibition design, interactive architecture, and

interactive art, a process that defines strategies and tools for designing interactions that are urban and spatial, in addition to being human, still needs development and testing.

In product or service interaction design, user needs can be identified through discrete personas, or characters, that represent average users. However, when designing for interactions in urban space, the spatial context becomes highly relevant and produces challenges outside of the scope of the current design methods. Instead of designing a commodity, designers 'stage' interactive spatial experiences (Dalsgaard and Kortbek 2009). They are not creating a product that can be sold on the market but instigating an experience that is bound to a space and can change how one perceives or interacts with the urban environment. This raises the questions: How do current interaction design methods need to be adjusted for the use in urban space? Which methods can be directly transferred, which need adaptation and what new methods need to be developed?

The research presented in this paper addresses these challenges at two levels. Firstly, we investigate the conditions, scope, requirements and behaviors that distinguish urban interaction design from product-scale interaction design. We organize these elements into a framework that will shape the future research as it develops, and allow us to test, expand and innovate the application of interaction design methods to the urban context. Secondly, we investigate one specific phase of designing as an initial step to articulating the framework. Here we focus on how exploratory design of human interaction can be achieved in the urban scale by addressing the 'insight' stage of the interaction design process (where the designer identifies the user needs and requirements of a project).

## 2 Background

Interaction Design has its background in product design where the merging of digital responsiveness with classical product design poses the question of how to create new digital products and new user experiences. Bill Moggridge (2006) established the term Interaction Design, a discipline that benefits from a clear design process that involves understanding the detailed behaviors of human-technology interaction as a means to better design (Cooper et al., 2007). Its focus on human behavior, in equal quotient to the technical response, produced the notion of 'human-centered design'. Its primary areas of application are software design and digitally enhanced products that typically involve a single user or digitally networked users.

As the scale of interaction design branched out into the spatial domain, the merging of interactive technologies with the staging of full-scale environments challenged spatial designers the same way product designers were challenged with designing interactive products. Interactive brand experiences (Smilansky 2009), interactive exhibition design (Hornecker & Stifter 2006), interactive architecture (Fox & Kemp 2009), and interactive art (Giannetti 2005) are disciplines that embrace digital interactivity in spatial, and sometimes urban, contexts. However, this larger scale of interactivity lacks a clearly defined process for incorporating interaction design principles, especially in regards to human behaviors and a human-centered approach. This was identified in 2003 by Luigina Ciolfi who argued that "current design methodologies and techniques do not explicitly consider the importance of gaining a full understanding of the human experience of space when designing technologies that will pervade and become an integral part of our physical environment" (Ciolfi 2003 p.1). Our motivation for this research is to address this gap.

### 3 Preliminary framework for Urban Interaction Design

In this research, we use the term urban interaction design (UID) to identify design of interactivity in an urban context that specifically integrates a human experiential approach suitable to this larger, more complex scale. In order to develop and test the elements of this approach, a framework is needed to organize the concepts that are critical to its definition (Figure 1). We define five points that form the starting point for our future work in establishing urban interaction design practices:

i. The scope and conditions of the urban context impacts diverse scales of design. UID operates at a bodily and spatial scale, including full body interactions with buildings, vehicles, billboards, in addition to people, objects, devices and the internet. Spaces are not fixed, but might move with the person. Open urban space, flanked by numerous stakeholder buildings, is large and complex.

ii. The scope and conditions of the urban interaction context is affected by complexity. Social interactions can occur between strangers. There is unpredictability of the number of users and their behavior, and the design must deal with diverse demographics - age, occupation, language, culture. UID operates in with an inability to fix the goals and norms of activity in the given urban space. Ebbs and flows of people in space change over the day, with weather, and with special event scenarios.

iii. As a result of the first two points, the requirements and behaviors of urban interaction design are unique from product or service interaction design. UID requires a technical fluidity and interoperability of information between buildings, devices and cognitive-social behaviors of people, via interactive touchpoints. Situated in the complex flow of the city and daily life, the interaction design aims to be experiential, and not an isolated product or service. Despite the scale, UID defines a need to remain relevant at the human level, responding to needs, wants and curiosity to the same detail of small-scale interaction design. UID must be situated and context-relevant, specific to each urban space, but at the same time have the capacity where required to interconnect between urban spaces, and even between cities.

iv. Strategies for urban interaction design, that are additional to those of product or service interaction design, arise through these needs. Foremost, UID needs to develop an intuitive process of design in which phases of exploration, definition and refinement are embedded in the environment and involves ongoing co-design with users. To achieve this, the design process should be generative, that is, generate unexpected design ideas through engagement. In this way, urban interaction experiences are 'staged', that is, they are designed to be immersive and contextual in relation to a range of possible behaviors. As a result the design aims to be performative, to generate new behaviors in an environment.

v. The tools and methods of UID must accordingly allow the designer to achieve this more fluid and responsive mode of designing within a context of complex interactions. Rapid probing, as described in the following, is a tool to quickly generate possibilities for interactivity, without needing to implement a technology. Design might involve collective ideation with groups of users, and in an iterative manner, within the context. UID necessarily implies large-scale prototyping, either in size or across wide urban zones and tools for large-scale, feasible prototyping are needed. Finally, UID prototypes cannot be observed and tested with a conventional objective approach that isolates factors and measures precise interactions. Instead UID requires new approaches to evaluation that don't inhibit the urban experience and deter the evolving possibilities of interaction.

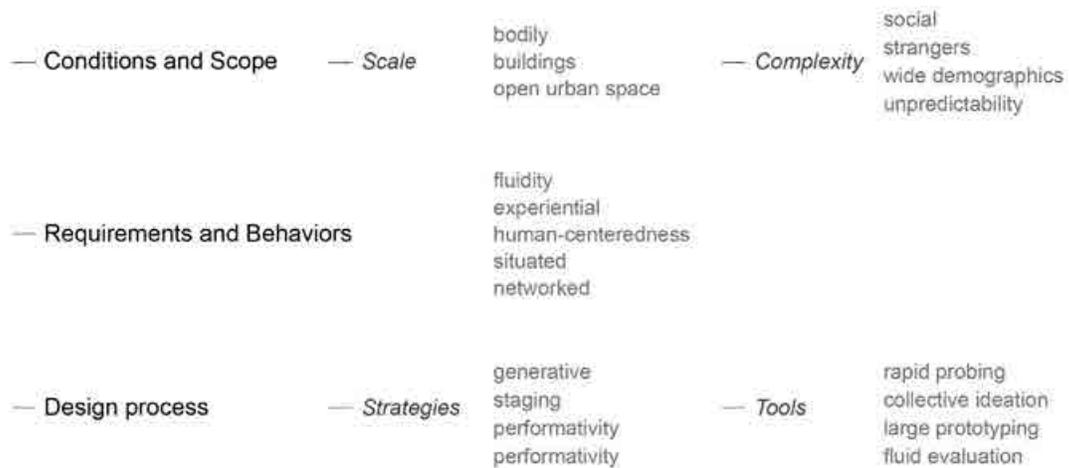


Figure 1. The preliminary framework to define the conditions, scope, requirements, behaviors, and design strategies and tools for Urban Interaction Design.

#### 4 Rapid Probing

Throughout the authors' practice over ten years it has become evident that the standards accepted in product interaction design have not penetrated urban interaction design practices. Projects designed at a spatial and urban scale do not employ a rigor to prototyping and testing as typical when designing the human interaction component in product design. In some cases, this becomes even more critical when stakeholders from architecture, advertising or media production perceive the design task from a defined disciplinary perspective, and lose focus of the human interaction as a rigorously designed element.

A key problem we identify with applying conventional interaction design to an urban scale arises in the 'insight' phase, where the designer gathers unstructured information about the context and potentials of the project. Insight methods such as interviewing and observation can only capture the current situation, for example, what people say or do, but not what they desire, know or feel. Because they refer to experiences in the past or present, observational methods cannot intuitively explore latent actions and emergent design opportunities, or allow the end-user or consumer to help the designer uncover new possibilities. To capture these intrinsic needs, generative methods are needed that openly and fluidly expand interaction possibilities through objects or stimuli that generate new insights (Visser 2005).

One generative method is technology probes (Hutchinson et al. 2003) which is based on the method of cultural probing where participants are asked to self-document their everyday life using kits containing cameras and diaries (Gaver, Dunne, and Pacenti 1999). Compared to cultural probing, technology probing uses a technology to provoke people's behavior towards a technology in their everyday life. Technology probes are implementations of a fully functional technology in a real-world setting.

The technology probing method could be particularly useful in urban space since it reduces the complexity of the urban space by focusing the users' behavior with the probe. Based on

Hutchinson et al.'s (2003) observations, probes can "help reveal practical needs and playful desires" and offer in-situ use scenarios with technologies that could not previously be observed or conceived. New avenues for bringing technologies into an environment can be explored as a step towards defining a design brief.

However one limitation of technology probing is that it deploys a fully functional technology as a probe. In an urban space this is more costly and logistically difficult to achieve compared to a controlled product or service-based scenario. While probing is an exciting method for our research agenda, it could be even better adopted for the urban scale by introducing the approach of rapid prototyping.

Rapid prototyping has a long history in product design and is more recently applied to service and interaction design as a means to quickly explore design options. Rapid prototyping allows the mocking up of user experiences with materials that allow for a rapid implementation of a simple prototype of an idea for a product or service (Avrahami and Hudson 2002). These simple prototypes can vary in fidelity, which can range from lo-fi (low fidelity) to hi-fi (high fidelity) (Rettig 1994). Lo-fi prototypes are not electronic and use materials such as paper to simulate a user experience (Sefelin, Tscheligi, and Giller 2003). Hi-fi prototypes are electronic but avoid expensive and time-consuming programming costs and mock up user experiences with WYSIWYG (what you see is what you get) tools (Walker 2002). Our research introduces the method of rapid prototyping to Hutchinson et al.'s technology probes, developing a hybrid method that captures the generative quality of probing and the instant quality of rapid prototyping.

#### 4.1 Example of rapid probing

The first author's previous project, the Neighbourhood Scoreboards (Moere et al. 2011) inspired the formation of the method 'rapid probing' described in this paper. Faced with the impracticality and expense of creating full-scale digital 'scoreboards' on the facades of domestic residences, Moere et al. opted for analogue boards, in which a digital use case was replicated using chalk (Figure 2). The project aimed to explore the impact of visualization on behavior change, where a series of boards attached to the facades of houses along a street visualized energy consumption on a daily basis, aiming to create positive competition between neighbors to stimulate behavioral change in energy consumption. The cheap and easily modifiable 'probe' offered a generative mode for gaining insight into the behaviors and attitudes of urban residents that would not have been possible through interviews about energy consumption directly.



Figure 2. The Neighbourhood Scoreboards project

The following describes the strategies and criteria for developing and utilizing a rapid probe in urban interaction design. This draws from the work by Hutchinson et al. (2003) to expand to an urban scale and context.

#### 4.2 Defining Rapid Probing

Rapid probing involves installing a rough interactive concept into an urban space, observing how it is used over a period of time and what new behaviors it provokes, and then reflecting on its use to gather information and inspire ideas for new interactive use cases. Rapid probes are simple, flexible and adaptable with three interdisciplinary goals. A well-designed rapid probe should balance these different disciplinary influences:

- Understanding the needs and desires of users
- Field testing interactive use cases
- Inspiring users and researchers to think about new interactive use cases.

Rapid probes are based on the idea of staging possible interactive urban-scale scenarios to provide users with ideas about potential applications and uses. The users' responses and feedback to the probes is captured to inform new ideas and concepts. As described by Hutchinson, "a probe is an instrument that is deployed to find out about the unknown to hopefully return with useful or interesting data. There is an element of risk in deploying probes; they might fail or bring unexpected results." (Hutchinson et al. 2003)

In terms of functionality, a rapid probe differs from a prototype, which is typically an early implementation of a design idea. Instead, a rapid probe is a tool to help inspire which forms of urban interactivity could be interesting to pursue. Instead of implementing a functional technology, rapid probes deploy lo-fi, mi-fi (mid-fidelity) or hi-fi versions of an interactive concept. The user is confronted with a rapid probe of a possible future use case in his or her every day life. The probe is not intended to be tested for refinement but to provoke a reaction and behavior from the user. In this way, rapid probes are open-ended and co-adaptive (Mackay 1990): the users should adapt to the rapid probe, however they should also adapt it towards their own needs.

Furthermore, probes are distinctly different from prototypes not only because they are used in the early stage of the design process, but also in the way they are designed and how they are analyzed (Figure 3). Probes aim to explore a single function or behavior, rather than prototypes which synthesize many; probes are not designed to lead towards a refined final product, but aim to open up opportunities; and most importantly, rapid probes are intended to be distinctively different from existing interactive solutions in order to provoke both users and designers to consider new behaviors.

	Probes	Prototypes
Functionality	Simple, a single main function and two or three easily accessible functions	Layers of functionality, address a range of needs
Usability	Not primarily about usability, not changed based on user feedback, possible deliberate lack of functionality to provoke users	usability is primary concern, design is expected to change based on user feedback
Logging	Collect data to generate ideas for new technology	Collect data to refine usability
Flexibility	Designed to be open-ended	Focused as to purpose and expected manner of use
Design Phase	Early in the design process	Later in the design process

Figure 3. The differences between probes and prototypes (Hutchinson et al. 2003)

#### 4.4 Steps and Evaluation

Rapid probing starts with a general hunch for an interactive opportunity in a space, e.g. “we want to make the public library more interactive,” or with a more specific idea what one wants to facilitate, e.g. “we want library visitors to interact more between each other and exchange knowledge.” It does explicitly not start with a technology e.g. “we want to use RFID technology to make the library better.”

Based on this hunch or idea, rapid probes of appropriate fidelity are created, deployed and evaluated. By iterating several probes the designer moves closer towards an actual prototype and can identify more specific designs and technologies that can be used for a final design (Figure 4). After determining a design and a technology an iterative design process will refine the prototype into a final design. A probe should not take more than one week to produce and one month to test in the field, so it can be rejected easily if it should fail.

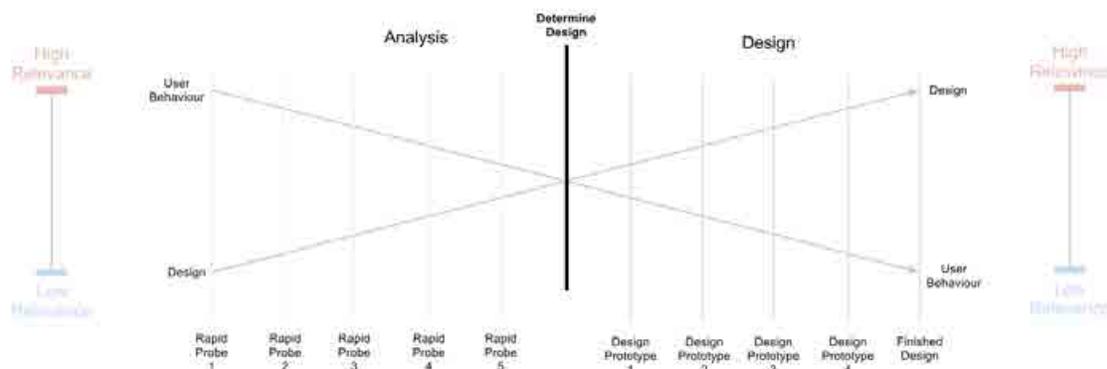


Figure 4. Diagram visualizing the rapid probing process. Initially capturing the user behavior is of high relevance and the design of the probe has low relevance. After several probing steps the user needs become clear and the design can be determined, at this stage the prototype can be developed and the design of it is prioritized.

Rapid probing should not be limited to lo-fi probes; it should be decided on a case-by-case basis which fidelity is feasible ranging from lo-fi to hi-fi. It is important that the probing can be carried out rapidly to allow for a higher frequency of probing and minimize the implications of negative resulting probes. As in technology probes, the main criteria is that they are performative enough to provoke users to consider how they do or don't fit into their lives; 'performative' refers to the way in which a space offers or inspires a range of potential behaviors to its users, directly or indirectly through media, shape, or the modification of everyday objects (Kiib 2010).

In addition to deploying a rapid probe, analysis and evaluation needs to be carried out during and after deployment, both by users and researchers to determine its success and implications. The analysis uses three steps:

- Pre- and Post-probing interviews
- Log dates, times, and actions to analyze usage patterns.
- Post-probing participatory design workshops (Schuler & Namioka 1993) to inspire new ideas.

## 5 Implications and Future Work

We have presented a preliminary framework to establish the scope and conditions for interaction design in an urban context, leading to an outline of the strategies and tools required to transfer the human-centered design approach of product interaction design into the physical, social, and public behaviors of urban interaction design. In outlining this framework, we have identified a pertinent need in the early design phase of 'insight' gathering to work with exploratory design tools that are rough, technology-independent and cheap, as well as able to generate new behaviors and ideas from user and designer alike. We call these rapid probes.

Rapid probes are spatial experiments that test how interactivity which is abstracted from a specific technology can change the performativity of an urban space. Unlike many technology-based prototypes, rapid probes are not a tool to collect 'unbiased' ethnographic data (Hutchinson et al. 2003). Instead, they provoke behavior of users that tests the performative quality of the designed interaction in-situ. By operating predominantly with the human interaction through a mock-up of an interactive use case, the designer can observe and tweak the capacity of the urban space to inspire and stimulate unique behaviors in the urban environment. While examples of performative environments in urban space are investigated by Kiib (2010) and by others, such as Institute for Spatial Experiments in Berlin, the introduction of interaction design principles through rapid probing is novel and offers a specific design method that might lead to new avenues for using interaction design in urban space.

Rapid Probing introduces a new ethnographic tool that provokes reactions towards specific paradigms of interaction. This method helps designers to analyze people's behavior before making design decisions and allows finding new ideas for interactive use cases and concepts. Possible applications of rapid probing include use by urban designers to find possible new spatial interaction design opportunities in commercial projects, exploration by researchers to find new urban needs and use cases that could be addressed with urban interaction design, and by companies who want to find new business opportunities in urban space.

We believe that rapid probing can help overcome the challenges, which occur when designers create interactive urban spaces. Rapid probing is not just a new design method but also a new starting point that questions the role of technology in urban space from the outset. The Neighbourhood Scoreboards example demonstrates lo-fi techniques in combination with probing methods to enable an understanding of interactive potential in an urban space without the need to deploy expensive technology. Rapid probes are not simply rapid prototypes; a key differentiator is their open-endedness. They are not designed with a specific idea in mind but rather to inspire new ideas.

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## DETOURING, DERIVES AND DESTINATION: THE PERFORMANCE PRACTICES OF SEO HYUN-SUK

JULIA MARSH

### **Abstract**

In this paper I will address three site-specific performances created by Hyun-suk Seo between the fall of 2010 and the spring of 2012 in the South Korean capital of Seoul. I will lay out a theoretical and conceptual basis from which Seo's work can be analyzed as reflecting critical examinations of the urban spaces we both occupy and ignore, as well as the effect his work has on audiences. My analysis is from the basis of art criticism but is also couched in art history, visual studies, Marxism, and those theories responding to modernism. By using text such as Foucault's essay "Heterotopia" I aim to interrogate how historical events loop back on themselves as ideals and decay; and Guy Debord's "Theory of the Dérive" I will look at how Seo's choreographed works present not only perceptual, but geographical challenges to audiences. I will also describe Seo's work as both artistic effort and urban investigation, by placing his work within the history of performance and site-specific art practices, as well as contextualize to some degree his sited works as influenced by events since the end of the Chosun dynasty. However, I will look primarily at how Seo's work being set in the present, is designed to bring people into places they would otherwise never go, and how it makes participants like the ghosts Seo himself evokes. I will show too that by using these spaces that are no long relevant, financially or culturally, to the growing population of young professionals in Seoul, who as good capitalists need to forget Seo increases not only the awareness of these places in the audience, but also their value as markers of cultural memory in their renewal as memories for the audience.

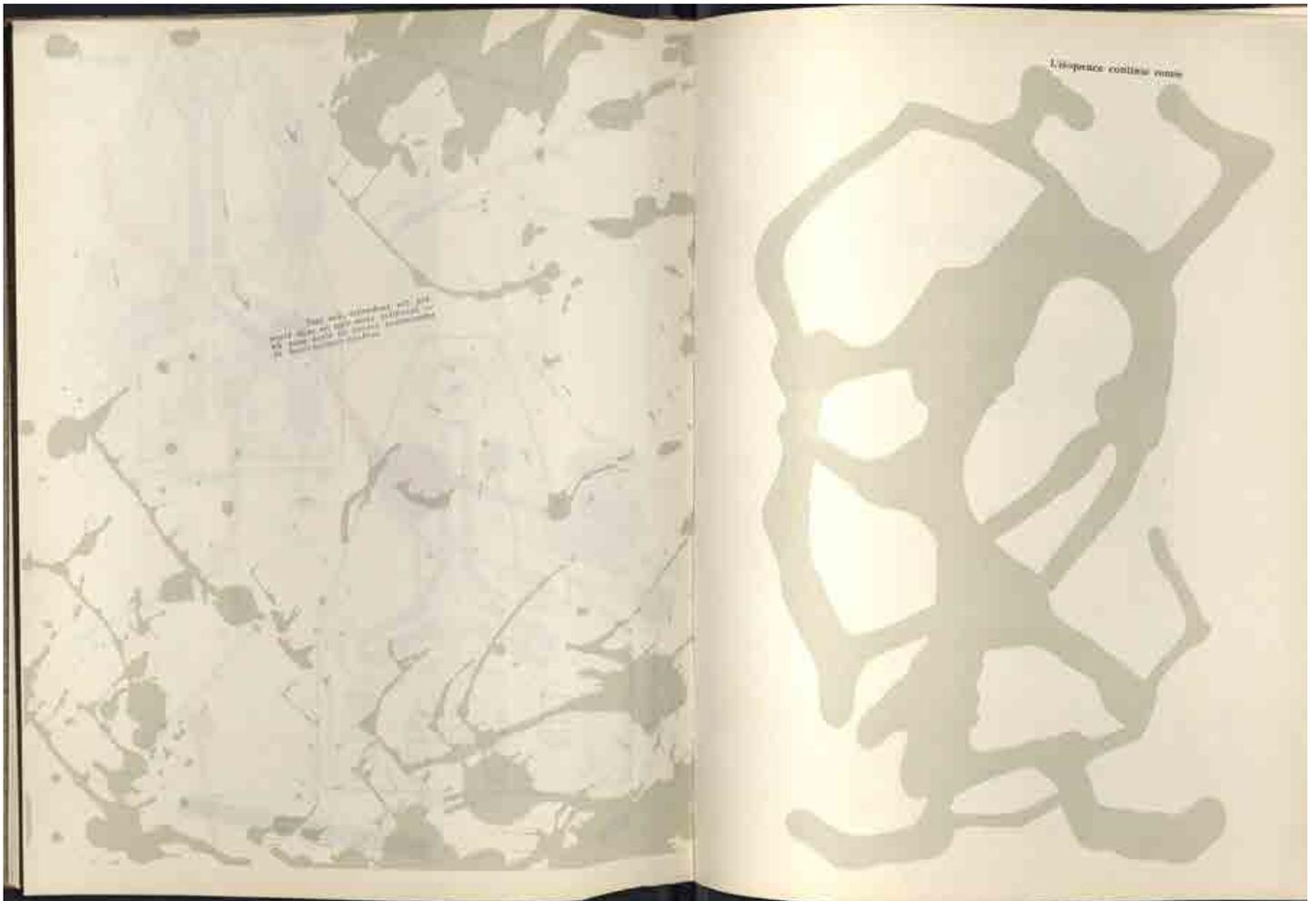


*(Figure 1) Seoul, 2009 (Marsh)*

### **Practice**

Between 2011 and 2012 Hyun-suk Seo took the city of Seoul, South Korea (Figure 1) as his stage for three performances. Seo's interactive site-specific performances are choreographed and unlike many staged works, Seo is not a physical presence, nor an actor in the work, but rather the director of extras, actors as well as the audience. He cues remotely with phone calls, recordings, business cards and guides, much like the wizard behind the curtain. Seo's framework for critical interventions, both sited and performative, stand in direct relation to both the urban plan and the happenstance, the juxtapositions of new and old, self-conscious and unconscious uses of space, and the distances and imminences

between people and such places. His works do not merely show the disconnection between the blind values, often embedded in modern progress and urban planning, but rather the alienating life of the streets shadowed behind such improvements. Seo's site-specific, participatory performances stretch out across the subjective experience of the collective participants in city life. In situ, he annexes our voyeurism, making us complicit in the conditions of each context of his work. Moreover, because in some sense his works are happenings participants in the end become the performers. Although brief, none lasting longer than an hour, Seo's carefully constructed journeys through the winding alleys of Seoul are profound encounters with the layers and structures of this city. By using these congested and sometimes grubby, always narrow, alleyways Seo questions urban renewal and the fallibility of city planners, but most importantly our relationship to what is there, unseen, in the city, by leading participants through places that will in the near future no longer exist, to places that were once intended, but failed to be a part of a brighter future.



(Figure 2) Spread from Debord, Guy. *Mémoires: structures portantes d'Asger Jorn*. Paris: L'Internationale situationniste, 1959. (Marsh)

## Concurrence

In the mid-1950s Guy Debord (Figure 2) theorized that by veering off our tracks we might, for a period, experience something that we rarely see of our environment: that which rests behind or within all the burdens of an administered society (Debord: 1958). In arguing for an alternate experience of urban spaces Debord urged users of the *dérive* formula to breach the confines of their minds in order to achieve the psychogeographic effect, and thus expose themselves to something unexpected, grander and perhaps disturbing. But more than that Debord's call asked for an examination of boundaries. The context into which Debord made his invitation coincided with the ruin of the Korean peninsula, the aftermath of the Korean War, or 6.25 as it is locally known, leaving the country reshaped by both autocratic, and imperialist tendencies. By the middle of 1953 the Korean War had left the peninsula's mostly antiquated infrastructure shattered from bombings by American and Chinese forces. Obviously, since then, South Korea has become what some have called an economic miracle, by becoming the 13th largest economy in the world in fewer than 60 years (BBC: 2012). (Figure 3) In the process, South Korea's capital Seoul has undergone its own dramatic transformations, shifting from the capitol of a 500 year old monarchy (1393-1919) (Figure 4)

(Figure 6) of the peninsula, and now as the capital of the southern half of that peninsula (Cummings: 1997). Because, after the war, the need for usable space was paramount, in contrast to the period of the agrarian Chosun dynasty when *pung su* (풍수), like concepts of feng shui, determined where to place buildings in relation to wind and water, (Figure 6) the re-established capital of this war-torn nation accommodated change without question, and so the city was built, seemingly without obvious planning or idea. Thus modern Seoul developed: buildings going up, then torn down and replaced, used for this and then that purpose, with little regard for style, design or proximity.



(Figure 3) Seoul today (Marsh)



(Figure 4) Chosun Era Korea (Public domain], via Wikimedia Commons)



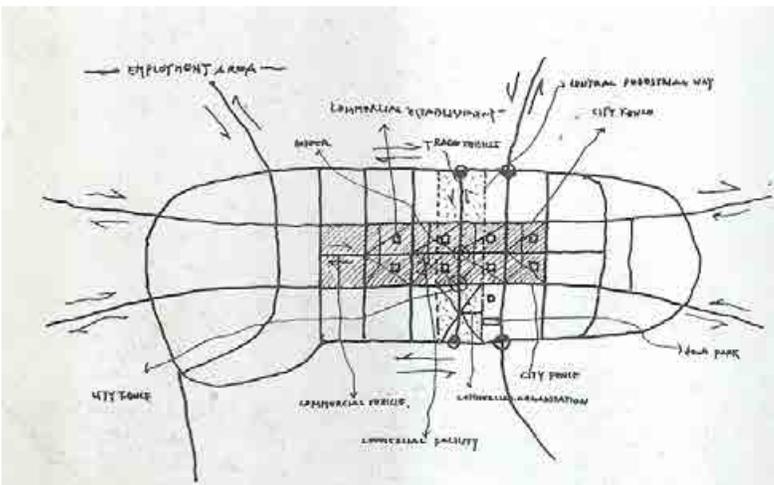
(Figure 5) Looking Out the West Gate, Seoul, Korea by Underwood ca. 1904 (LOC)



(Figure 6) Segeomjeong, 1891 (unknown) Example of pung su: Korean building facing water away from the mountains.

### Reprisal

Only in the last decade has a concerted, if unpopular, urban plan has been implemented in Seoul. Perhaps the one exception to this otherwise ad hoc practice in the last five decades was the ambitious plan of Kim Su-geun (1931-1986) made for Seoul's Seun Market in 1967. (Figure 7)



(Figure 7) Kim Su-geun's Sketch (courtesy of Seo Hyun-suk)

This project reflects Foucault's idea that "formed in the very founding of [a] society ... are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found within the culture, are simultaneously represented, contested, and inverted (Foucault: 1967)." The Seun plan conceived by Kim was for a mix use building of commercial and residential property, (Figure 8) and like the *dérive*, it

would over time become the stuff of legend, both to some degree relegated to the heap of failed attempts at creating something liberating and useful, even enlightening, for urban dwellers.



(Figure 8) View of Area (courtesy of Seo Hyun-suk)

In Seo's work *Heterotopia* (2010), which takes its title from Foucault's essay of the same name, these two departure points: Kim's ambitious urban plan, and the test of the psychogeographic effect come together. Still standing to some degree on the north side of Seoul, Seun Market sits in close proximity to other undesirable spaces mostly occupied by

metal working shops. One learns from Seo's work that Suen Market is as Foucault described a place "outside of all places, even though it may be possible to indicate their location in reality (Foucault: 1967)." Designed to be a fresh modern open accessible convenient space—all the things of urbanites' dreams—yet in a matter of years due to the ongoing threat of a North Korea, Suen was practically abandoned by locals who moved in droves to the south side the Han River to Gangnam (Seo: 2010). (Figure 9) Yet there the remaining building stands oblique and visibly unrealized.



(Figure 9) Southern districts (Gangnam, Seocho) of Seoul, South Korea (By Brücke-Osteuropa (Own work) [CC0], via Wikimedia Commons)

## Heterotopia

The piece Heterotopia goes beyond the movement or moving of bodies in urban space, by including the use of media to direct participants. Moreover the work began even as the participants were already moving through the city. They entered the stage when they reached their mark: subway station Euljiro 3-ga, exit 5. (Figure 10)



(Figure 10) Heterotopia: Coffee House (courtesy of Seo Hyun-suk)

There participants made a call on their cell phones for further instructions as to where to go for the beginning of the performance. Participants were instructed to enter an old-style coffee house, places where traditionally men relaxed in the company of hostesses who soothed and charmed, waiting for a cue while sipping coffee. There they learned about Kim's original construction ideals. After receiving a phone call, and a tape recorder, participants then made their way through Cheongghecheon 3-ga and the seven sites of the performance, (Figure 11, 12, & 13) each designed to collapse the differences between space and place. To achieve this, Seo challenged the limits of where the performance began and ended; who were the performers; and the subject. If audience implies a group, Seo's work is stripped of that in the immediate sense of the word. So, as a performance Heterotopia swung back and forth between theater and happening by accepting and alternately rejecting the confrontation of the stage/audience dynamic by placing participants in proximity to actors and action, but then allowing these same participants the sense that they were immersed in a singular event.



(Figure 11) *Heterotopia: Tea Shop* (courtesy of Seo Hyun-suk)



(Figure 12) *Heterotopia: Bicycle* (courtesy of Seo Hyun-suk)



(Figure 13) *Heterotopia: Coach* (courtesy of Seo Hyun-suk)

### Distances

Seo inevitably cut away the distances we expect both in performance and urban space, and like the substance of the *dérive* which has infected and spread into many other kinds of making and performance beyond its intended ecological imperatives its transgressive idea has in effect become a kind of template for all manner of works from the happenings of the 1960s to more the socially engaged works of today. The *dérive* challenged people to cross the line of a city and since the 1960s performance has attempted to break the boundary between the stage and the audience, from Yoko Ono's *Cut Piece* (1964) when she allowed audience members to cut off her clothes, to



a younger generation of performer like Matthew Nicolas whose work *We are Not Funny & We Might Not Fly* (2006) (Figure 14) demanded even forces the audience to follow and move according to his action. Such attempts at breaking through, not just the armor of late capitalism but also on a smaller scale, mano a mano, in the face of audiences, taunting participants into something far scarier and immediate: the catharsis of the moment.

(Figure 14) *Matthew Nicolas, We are Not Funny & We Might Not Fly* (2006) (courtesy of the artist)

The *dérive* brings denizens to sites and in doing so alters each. Performance has shifts perception in sited practices by leaving the stage as a perimeter of action. Although working in the street is not necessarily not a stage, in a culture of formalization and dwindling pedestrian access the street performance can feel awkward and emancipating. So although, Seo's works as performances are theatrical experiences, they are closer to an amusement park dark ride or a haunted house than such performances as Marina Abramović's passive, yet confrontational *The Artist is Present* (2010) often associated with the form. Yet in a similar manner to Abramović, Seo's work fractures the audience into a series of individuals having singular experiences. In this way, Seo's work could easily be mistaken as a form of art tourism, or destination art; these tendencies however superficial are nonetheless meaningful to Seo's larger critique of perception and the consumption of space in how we access or deny places. As forms of play and interplay, delight and even fear Seo rouses his audience out of their torpor by offering an unexpected encounter.

### **Walking, Witnesses and Wizards**

A particular aspect of these events was Seo's absence. His direction resembles the Wizard of Oz, who in contrast had only the power of illusion at the ready. Seo on the other hand, wills "the hideous dropping off of the veil" on that which is unseen and ignored, letting audiences see, recognize and sense the discord present at the edges of urban spaces (Poe: 1962, 37). Much like the friend who comes to visit Roderick Usher, in Poe's classic *The Fall of the House of Usher*, we too saw the madness and chaos unfolding. In Poe's work the destruction of a way of life is due to its corrupt past, while in Seo's work the destruction and crumbling infrastructures, is also due to changes in taste and obsolescence. When interviewed Seo said, "the ill-managed process of actualization in the part of the government agencies and construction companies. ... The failure, in other words, was due to particular circumstances that have little to do with the conceptual demise of the modernist ideal. Perhaps on a symbolic level, however, these constraints did contribute to it (Marsh: 2010)." And while, Seo disagrees with the way in which the local government is going about the changes in topography and focus in parts of Seoul, he does not consider these works protests. "My primary purpose is to question how the history of a "city" is formed, how memories and history function in relation to the banality of everyday, and how individual senses contribute to the construction of the concept of a 'city.' (Marsh:2010)" So although Seo's works are not properly *dérives* because they are choreographed in detail, they are in that the attentive audience member is confronted through his directions with juxtapositions of progress and the moribund, the sadness and the repulsion of the passing of a way of life. By default Seo achieves Debord's imperative to analyze "the absolute or relative character of fissures in the urban network, of the role of microclimates, of distinct neighborhood with no relation to administrative boundaries," except of course where these spaces are now slotted for renewal (Debord: 1958).

### **Heterochrony**

Clearly in *Heterotopia* the audience/participant was pushed towards an odd mix of disorientation and self-consciousness by way of recording devices, which play back but then erased proof of their participation there. A later work, *Heterochrony* (2012) drove this division and urged the participant on an odyssey, focusing directly on subject/viewer—who in the end is the viewed. The manner in which the work begins was similar to *Heterotopia* in that each participant went through a series of passageways in the renovated Seoul Train Station, now called Culture Station Seoul 284. This site, like the one used in *Heterotopia* is marked by its past, a product of the Japanese colonial period, left to rot for decades, now remade as a cultural outpost—still remaining empty despite the

art hanging in place. This site's history is perhaps manifested in the extent to which Seo took hold of the viewer's personal space and level of individual participation, even going so far as to ask for permission and telling each that the performance would end if the viewer said they didn't want to go on. Compared to his other works, this controlling of bodies, in effect created a negative choreography as participants were mostly blindfolded throughout the performance. The audience was more precisely the site of the work and the guide instead of a signpost was a reflection of each participant. In giving yourself over to the work you became something of a spectacle, but in the end you couldn't avoid that you were both stared at and ignored. Seo performances reflected what Michel de Certeau describes as "[t]he paths that correspond in this intertwining, unrecognized poems in which each body is an element signed by many others, elude legibility" in the city (de Certeau: 1984). Thus, each person that endured this work walked away with the same direction embedded in their psyche, and although unable to say what exactly they experienced, they share its effects. The works certainly cannot be compared to living through colonization or war but in a small way opened us up to a similar sense of domination and control.

In the fall of 2011 Seo once again provided a framework of critical interventions in *The Divine Prostitution of the Soul*, (Figure 20) another interactive performance in another neighborhood in conflict with itself. Even before entering the Rosemary Wedding Hall, the arc of this performance began to reveal itself in this starting point: a typical Korean wedding hall. On the threshold, participants were escorted one by one into a bride's receiving room on the side of Rose Hall, one of the several "chapels" inside the Rosemary Wedding Hall. While waiting in the lobby, other guests who had already entered could be seen exiting the Rose Hall's front entrance, walking hand in hand out onto the street, with unsmiling, willowy figures dressed in black. These somber pairs gave off the feeling of a funeral rather than a wedding, and prepared participants for the despair, and unceremonious narrative that were to follow. After taking a seat inside, one of the black clad escorts soon came to sit next to me and softly told me a story. We didn't make eye contact, and although I could hear what she said, I already had the feeling of being dissociated from her. All the while a piano tuner loudly played the same key over and over, monotonously drumming out the fey messenger at my side. The distance created by her anonymity was later replaced and reinforced by earplugs, which deafened both her voice and the sounds of the street. Regardless of how close she came, from the start she talked, but never really to me, her voice projected out onto an empty space. Later as the sun was setting, moving through the winding network of alleyways and paths, I felt I was in a dream, following, then chasing, this figure who, like a ghost or a butterfly, led and directed, but also changed and then disappeared. Through the three stations of the performance the butterfly-ghosts, however ethereal, dragged the participants, isolated by earplugs, then earphones, across a grubby surface away from the comforts of that most glossy and scripted of Korean event sites into a world predicated on luck and hard choices; cheap spaces and ugly encounters. There desires that will not and cannot be realized are replaced by necessity and sorrow. Her voice and your fate become a dreamed *voix acousmatique*—the disembodied or invisible voice, a term coined in Michel Chion (Chion 1984). One that cannot be captured, for even as it was recorded, it was erased and replaced by another's, just as her story was repeated and erased over and over, again. Like the bachelors of Duchamp's *Large Glass* the participants never reach her, even when we could hear her, we remained ignorant of her; her words, never directed at us, fell away. The distance experienced, and collapsed, and reclaimed in *The Divine Prostitution of the Soul* are in a word cathartic.

Seo's interventions both sited and performative, in relation to urban planning old and new do not merely show the disconnection between the blind values often-embedded in modern progress and urban planning they also hold up close the alienating life of the streets shadowed behind such improvements especially in Seoul by violating such boundaries in his performances. Seo questions urban renewal and the fallibility of city planners, but more importantly in works like *Heterotopia* and *The Divine Prostitution of the Soul* he reveal our own perception of these places and their tenants as suspect and lacking. In this sense Seo's work has a relation to the epic theater espoused by Bertolt Brecht as written about by Walter Benjamin, in that it "is not so much the development of actions as the representation of conditions." By simply pulling back the curtain and revealing what has been there all along Seo brings audiences into proximity with "agents" of these spaces, especially in *The Prostitution of the Soul*. "[T]he truly important thing" Benjamin goes on to say "is to discover the conditions of life. (One might say just as well: to alienate [verfremden] them.) (Benjamin: 1968)." Seo's work, however engaging, shows just how estranged we are from the indelible facts he exposes in the contest of progress that insists on dividing now from then, and how in the hiding, removing or destroying that which is unseemly, regardless of its value we lose something. Likewise, Seo shows the contradictions in those conditions by leading participants through places that will in the near future no longer exist in places that were once intended to be a part of a brighter future.

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## CHROMATOGRAPHIC BALLADS

**URSULA DAMM**

Bauhaus-Universität Weimar

The installation chromatographic ballads investigates how human perception reacts to the multifaceted visual impressions of public space via an artistic setting. The installation creates videostreams out of video footage from a public space. In an adjacent location a single person (visitor) directs a videopresentation on a large screen by using the so called neural chromatographic orchestra. This setting consists in an EEG-Device (Emotiv neuroheadset) which enables visitors to interact with a custom made selforganizing neural network ("Neurovision"). With this device, a visitor can select and explore real-time views of three cameras — installed on the public place - with different perspectives on the people (birds-eye view and close-ups). The device allows to navigate through various levels of abstraction by altering the filters of the neural network.

The installation is based on the software used in the installation "transits". Other than "transits" chromatographic ballads uses multichannel real-time videoinput and enables a visitor to interact directly via biofeedback with the different filters of the software. In this way the visitor becomes director of the video installation.

*Keywords: public space, video projection, perception, motion, color, optical flow, neuro-feedback, neural prosthetics, EEG, SOM (selforganizing map)*

## MECHANICS OF PLACE: TEXTURES OF TOPHANE

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### **Abstract**

Place is encountered as a mix of shifting spatial and temporal experience. At the human level, these transitions include the embodied memory of past places we have just been and future places we are moving toward. One way to convey the experience of these transitions is through technological experiences made possible by innovations within mobile devices. Augmented Reality through the smartphone constitutes a dual experience where participants can either submit or retrieve site-specific information. These projects can foreground the social, cultural, historical and geographic qualities of the physical location where they are embedded. As such, they suggest a desire to engage the “placeness” of place—the investment of personal associations with past history as a means of layering situated meaning that is designed to enrich, amplify or contradict the experience of the location (Iverson and O’Flynn, 2013). Using an array of categories as a conceptual structure, Mechanics of Place engages the specific relational dynamics of a particular neighborhood, bringing to the fore the contradictions and conflicts inherent in the mixing of the cultural conditions that are present in a given urban location. Within this relational and multicultural space, situated augmented reality art works provide a new way to enact a hybrid relation to place.

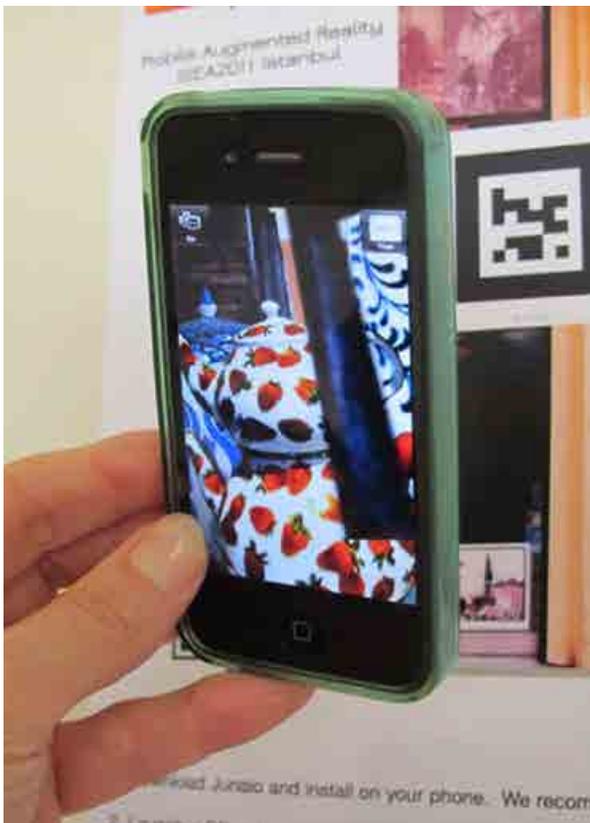
Mechanics of Place is a curated mobile Augmented Reality framework designed by Hana Iverson and Sarah Drury, where artists are invited to create situated works for the smartphone. The media produced by the participants is experienced on designated streets in cities where the project is installed. Viewers/users who experience the project on the street follow multiple paths through an archive of digital data that is made up of audio, text, and/or collaged pictorial forms.

Augmented reality functions by geolocating or tagging divergent narratives or media to place. “By privileging of the experience of “here,” it becomes a potent and authentic embodiment of [visual and aural experience] that suggests a unique presence akin to what Walter Benjamin theorized as the notion of the aura of the original work of art (Benjamin, *Illuminations: Essays and Reflections*, 1968). The “aura” in situated locative media, is the authentic place of a geolocated experience of history or histories” (Iverson, O’Flynn, 2013). Building and sharing placeworlds via supporting technological platforms is not only a means of reviving former times, but of revising them.

In framing the artistic parameters of Mechanics of Place, we ask artist-participants to engage the boundary where the imaginary meets local reality, exploring the array of cultural projections onto place. Participants in the project are guided to interrogate the issues of community, tourism, urban development and erasure uncovering ideological differences and personal imaginaries. Once created, the mobile technologies provide the opportunity for MoP authors and community dwellers to engage with each other via the embedded narratives of the project. In this paper we will examine how this project functioned when presented in Istanbul.

### Full Text

Place is encountered as a mix of shifting spatial and temporal experience. At the human level, these transitions include the embodied memory of past places we have just been and future places we are moving toward. One way to convey the experience of these transitions is through technological experiences made possible by innovations within mobile devices. Augmented Reality through the smartphone constitutes a dual experience where participants can either submit or retrieve site-specific information. These projects can foreground the social, cultural, historical and geographic qualities of the physical location where they are embedded. As such, they suggest a desire to engage the “placeness” of place—the investment of personal associations with past history as a means of layering situated meaning that is designed to enrich, amplify or contradict the experience of the location (Iverson and O’Flynn, 2013). Using an array of categories as a conceptual structure, Mechanics of Place engages the specific relational dynamics of a particular neighborhood, bringing to the fore the contradictions and conflicts inherent in the mixing of the cultural conditions that are present in a given urban location. Within this relational and multicultural space, situated augmented reality art works provide a new way to enact a hybrid relation to place.



Mechanics of Place is a curated mobile Augmented Reality framework designed by Hana Iverson and Sarah Drury with technologist Craig Kapp, where artists are invited to create situated works for the smartphone. The media produced by the participants is experienced on designated streets in cities where the project is installed. Viewers/users who experience the project on the street follow multiple paths through an archive of digital data that is made up of audio, text, and/or collaged pictorial forms.

Mobile Augmented Reality functions by geolocating or tagging media to place (Figure 1).

*Fig. 1. Mechanics of Place, Photo: Hana Iverson 2011*

"By privileging of the experience of "here," it becomes a potent and authentic embodiment of [visual and aural experience] that suggests a unique presence akin to what Walter Benjamin theorized as the notion of the aura of the original work of art (Benjamin, 1968). The "aura" in situated locative media, is the authentic place of a geolocated experience of history or histories" (Iverson and O'Flynn, 2013). Building and sharing placeworlds via supporting technological platforms is not only a means of reviving former times, but of revising them. As Jussi Parikka argues:

The idea of media as a contraction and folding of time and space underlines the insight that time and space are not just solid and stable backgrounds for action or communication. They are themselves in continuous movement and mutation and are attached to the relations in which they are formed. Nature and media are subsequently to be understood not as distinct ontological regimes but both are to be seen in terms of processuality and becoming in the manner that the recent Deleuzian wave of theory has suggested (Parikka, 2011).

In framing the artistic parameters of Mechanics of Place, we ask artist-participants to engage the boundary where the imaginary meets local reality, exploring the array of cultural projections onto place. Participants in the project are guided to interrogate the issues of community, tourism, urban development and erasure uncovering ideological differences and personal imaginaries. Once created, the mobile technologies provide the opportunity for Mechanics of Place authors and community dwellers to engage with each other via the embedded narratives of the project. The potency of this engagement lies in the ability for the project to support and reflect disagreement across polarized views, which is and has historically been a defining factor in the evolution of community narratives and shared and diverging histories. The ability of these technological platforms and tools to rewrite, subvert and reroute official borders and boundaries by countering official and at times constraining narratives creates an opportunity for social activism in micro-uses that express or speak to individual experiences (Iverson and O'Flynn, 2013).



For Mechanics of Place: Istanbul, we focused specifically on a single street in the historic center of the city, Bogazkesen (Figure 2), as a site where traditional culture and more recent gentrifying dynamics converge. Relying in advance upon Turkish friends in the United States for their knowledge and lived experience, we chose Bogazkesen as a site rich in both traditional culture and disjunctive new gentrification.

*Figure 2. Bogazkesen Street, Photo: Hana Iverson 2011*

Istanbul's population explosion has caused a cultural debate, or identity crisis, concerning the word "Istanbul" itself, as people argue about the true identity of the city and of its inhabitants. We wondered if Bogazkesen Street would allow us entry into a micro-immersive experience of Istanbul culture. Bogazkesen Street is in the district of Beyoglu, on the European side of Istanbul. Beyoglu is the historic heart of Istanbul, located just across the Golden Horn from the major mosques and churches of the Old City, encompassing a number of different neighborhoods that include the art, entertainment and nightlife center of the city. Beyoglu at the same time is a densely populated residential area, including a range of economic levels and cultural strata, from traditional culture to youth/student culture, to gentrifying classes. The street is long, narrow and winding (Figure 3), stretching from the museum district on the waterfront up a steep hillside to Galatasaray and the hilltop thoroughfare of Istiklal Street. Boğazkesen has also been in the media spotlight due to a violent attack on galleries during an opening in September 2010. These tensions were not evident during the duration of the project, but the number of political demonstrations on Istiklal Street pointed to the dissent and disturbance that is never far from the surface of everyday life. Bogazkesen Street provided a "situated context where the history, culture and physical geography of the location provided the constraints that affected the choice of actions and interactions" of experiencing the project (Davenport, 2011).



Figure 3. Bogazkesen Street. Photo: Hana Iverson 2011

Although the site of conflicts stemming from the dynamics of gentrification, Bogazkesen also offered a surprisingly welcoming person-to-person experience, creating identifiable feedback that helped refine the conceptual and technological design of the project. During the week the project was installed, we met some of the local inhabitants of Bogazkesen's small historic houses and apartment buildings. They included more traditional Muslim families with women in "chador", small business owners living above and behind their stores, foreign-born and local artists and filmmakers, gallery owners, and others.

Our workshop participants were local artists and students who brought their own practices to the project. In some cases, these included critical positions that grew specifically from the contradictions and conflicts of life in Istanbul. One artist, Petek

Kizilelma, created an AR graffiti work, addressing the Turkish government's censorship of the internet, including the banning of 138 words considered obscene or suggestive of pornographic content. These words in translation include "skirt", "sister-in-law", "gay" and "animal". Petek's project for Mechanics of Place countered the act of censorship by placing the banned language, via the AR platform, on the walls of the city, as painted/stenciled graffiti. The hybrid arena of wireless technology provided the opportunity to circumvent the censorship of web or physically materialized ideas and language.

Kerem Özcan, an industrial designer and academic from Istanbul, constructed fictional characters (Figure 4), "born in a parallel universe" during the timeline of "a series of population exchanges and pogroms in Istanbul against the non-muslim communities in the first decades of the newly founded Turkish republic" (Özcan, 2012).

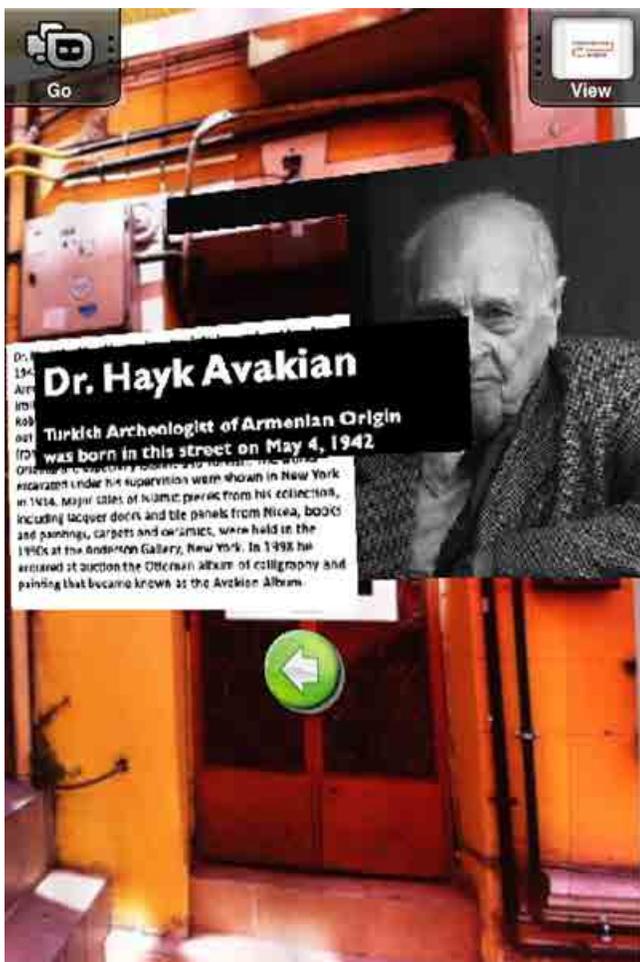


Figure 4. Kerem Özcan for Mechanics of Place.  
Photo: Hana Iverson 2011

These pogroms were most acute during the 1920s and 1950s. According to Kerem, "Due to the post-WWI population exchanges in the early 1920s and pogroms in the 50s, minorities in Turkey were forcefully removed from their residencies in Turkey. Many intellectuals, craftsmen and artists who were once part of the colorful scene of Istanbul were expelled from their homes, which has led to a serious irreversible cultural impoverishment for Turkey. The Tophane neighborhood in Istanbul, one of the locations where "Mechanics of Place" takes place, was one of those districts [with a large minority population]. This set of works asks "What if the minorities were never forced out. The suggested answer is a set of fictional biographies of people who could have been born in Istanbul... and had their footsteps on earth enrich [Istanbul culture] by their multicultural background."

Kerem created a fictitious Armenian archaeologist, Dr. Hayk Avakian, and constructed images and biographical information as well as documentation of Dr. Avakian's contributions to the field of Turkish archaeology. This pseudo-historical data appears

through the Mechanics of Place interface, tagged to locations on Bogazkesen Street. Kerem's vision was to "position the buildings as the places [where his fictional characters] were born and raised. Kerem's works were intended to reflect on the waves of reactionary violence that have punctuated Istanbul's long history as a site of geographic, political and cultural conflicts, and to mourn the city's lost opportunities for ethnic diversity and intercultural dwelling.



Figure 5. Teoman Madra for Mechanics of Place. Photo: Hana Iverson 2011



Figure 6. Cynthia Beth Rubin for Mechanics of Place. Photos: Sarah Drury and Hana Iverson 2011

Another Mechanics of Place participant, Teoman Madra, a conceptual artist with an extensive background in digital imagery and algorithmic effects, pursued his practice of spontaneous assemblage as a counterstatement to the commodity valuation of the art world. His work (Figure 5), dense clusters of multiple images, became more potent when situated near or on the galleries located on the street, a few blocks away from the Istanbul Modern museum.

Since the Modern was hosting the Istanbul Biennial, any Augmented Reality work could be read as a critical statement directed toward the international art market. Rather than addressing cultural contradictions internal to Turkish society, Madra's practice resists characterization as traditionally or non-traditionally Turkish, which in itself is a reflection of the way in which globalization informs and shapes art and media art practices.

American media artist Cynthia Beth Rubin, another workshop participant, has a long history in the development of various digital tools. Cynthia used the architecture of Bogazkesen to engage with layers of history, media and cultural associations (Figure 6). Her work began with a photograph of the one remaining wooden house on the street.



Virtually all Ottoman-era houses built in Istanbul were made of wood; until the 20th century Constantinople was still predominantly a "wooden city". The wooden house on Bogazkesen Street was not one of the grander Ottoman era structures. It was a simple structure, in contrast to the other houses in the neighborhood that reflected a European character. These architectures were so various and shared the contrasting cultures of the life we experienced in the neighborhood.

Cynthia's work, by engaging site-specifically with the locale, created a visceral shift of perception. In Cynthia's work, the technologies did not feel like they sat on top of the experience of the street, but in fact, blended with the architecture (Figure 7), augmenting the place with an imaginary reality, like but not like, the real.

Figure 7. Cynthia Beth Rubin for Mechanics of Place. Photo: Hana Iverson 2011

In Cynthia's work, the meaning of place itself becomes re-inscribed through the spatial interventions of the technology, where place is amplified, experienced in its duality and fictionalized in its interpretation. This mini-fiction, retained its relationship to the real through the deconstruction and reconstruction of identifying elements. The spatial component of this multi-layered continuum of experience attempted to convey "a sense of being there." In Cynthia's case, it was a means to create a sense of 'being here' as she was as new to the environment as we were. Cynthia's project is an example of what could be referred to as "embedded cinema." This "collect and reflect approach" is part of what we envisioned "in the evolving collection of media sequences that could be created by a diverse set of makers over time, resulting in a truly layered window into place" (Davenport, 2005). This vision supported the idea of a situated context, where the cities involved in the project would also reveal their unique character and become part of a dialog between places.

Siegfried Zielinski, in his essay "Backwards to the Future," speculates that "the cinema of the future will be a time machine in a much more radical and comprehensive sense than all these medial levels: a machine namely that not only enables us to travel through time using our imagination but also using our bodies" (Zielinski, 2003). If cinema in any sense is a media of illusion, these small screen works combine with place to create time shifts, space shifts and meaning shifts by gathering small bits of information that can have an evocative sensory quality. Yet, in a project like *Mechanics of Place*, there are multiple narrative and visual concepts at play, bumping into each other and overlapping. At a given marker, what is revealed is the media that is connected with the conceptual structure of the system – the database of associative terms – that the participants choose as tags when entering the development platform of the project. The shaping of an internal semantic framework to structure the media creates collisions and disjunctions, interruptions and intrusions. For the conceptual structure of some of these projects to be fully read and understood, they may function better as individual projects. As a collection of works within one framework, they form a secondary experience, an inverted mechanics, creating a sense of no-place. In trying to organize a thematic structure, we created an overlaying system of "flows" akin to those referred to by Deleuze and Guattari. "They articulate a space of electric flows that function in an amorphous continuum, where the 'flow enters into a relationship with another flow, such that the first defines a content and the second, an expression. The deterritorialized flows of content and expression are in a state of conjunction or reciprocal precondition that constitutes figures as the ultimate units of both content and expression" (Deleuze and Guattari, 1983). In the environment of mobile augmented reality, these flows enable the recombining of language within what Bill Seaman refers to, in his essay, "Interactive Text and Recombinant Poetics," as a "mutable context of neighboring media elements, media-processes, physical environments and operative code functionalities" (Seaman, 2004). Yet, despite all the potential poetics within the technological system, the cultural experience of place – its social and political histories and context - is what informs our perception and experience of the media or cinematic space.

As the *Mechanics of Place* project grows and the collection of media becomes fuller and richer, created in multiple cities, the project can convey events and experience that are tied to location and at the same time reference faraway locations simultaneously. These experiences will divide into intervals, and divide cultural representations into micro-elements that can be mixed with real place. Locative technologies are part of the "new quality of time machines" that are building a future of "expanded reality" (Zielinski, 2003).

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## Media Geographies: Object / Matter

Moderated by Mark Shepard, University at Buffalo

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## DIGITAL MATERIALITY AND THE NEW GEOGRAPHIES OF MEDIA CITIES

**LAURA FORLANO**

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### **Abstract**

Media cities are being transformed through the use of digital technology at a range of scales from urban space to material object and physical body. At the urban level, large screens and interfaces, city drones and networked infrastructures such as cellular and Wi-Fi networks are reshaping the built environment by extending and expanding the architectural boundaries of the city. At the object level, so-called “smart” artifacts such as adaptive traffic signals, home energy monitoring devices and demand-responsive parking meters are disciplining the urban populations in the name of efficiency and productivity. Finally, at the body level, mobile phones and tablet computers as well as wearable technologies such as Google’s Project Glass, FitBit and Nike Plus are enabling people to interact with material objects and urban spaces in unprecedented ways, allowing for the emergence of new geographies in media cities. By analyzing media cities at these three levels, it is possible to better understand the kinds of transformations that are occurring through the use of digital technology.

Like other examples of the social implications of the use of digital technology, media cities are at the nexus of a number of important debates related to these emergent and hybrid geographies. While reified dichotomies that separate physical from digital, global from local and private from public continue to persist in academic scholarship, media cities are important sites for the erosion of these boundaries. This paper relies on theories from communications, science and technology studies and design as well as the field of urban informatics in order to understand specific empirical examples. By drawing on art and design projects along with social science studies of the users of digital technologies in cities, it is possible to outline practices that overturn earlier theories about materiality, place and the nature of the public sphere. Specifically, media cities are embedded with plentiful examples of more hybrid notions of the digitally material, the globally local and the private public that are currently being advanced by scholars, designers and artists. How might these hybrid concepts help us to understand the kinds of transformations that we are currently participating in through the use of digital technologies in media cities?

However, while the creation of new terminologies that attempt to integrate these dichotomies may be useful in terms of generating a more nuanced language with which to describe media cities, it does not suggest the seamless layering and smooth integration of the digital into the physical as many scholars have continued to reinforce in recent years. Rather, the current transformations that media cities are facing are fraught with tension, seams and friction that expose the difference in values held by various stakeholders such as the business community, policymakers, non-profit leaders and citizens at large. While the work of social scientists is primarily to describe and expose the conflicts between rhetoric and reality, designers are challenged with acknowledging and considering the lived reality in media cities. By adopting a kind of “design friction,” designers can intervene along the cracks, crevices and seams of these emergent and hybrid geographies.

## 1 Introduction

How are the aesthetics and lived experience of urban life being transformed by the use of digital technologies? How might digital technologies expand our sociability and connection with our communities or, alternatively, further alienate citizens from one another? In what ways are citizens participating in the co-production of media cities through the use of digital technologies? Whose values are reflected in the decisions that are being made to shape the use of digital technologies in media cities? By examining the use of digital technologies in media cities at the level of the city, the object and the body, it is possible to better understand these transformations. This paper relies on theories from communications, science and technology studies and design as well as the field of urban informatics in order to understand specific empirical examples.

Media cities are currently the site of emergent and hybrid geographies, which integrate the physical with the digital, the global with the local and the private with the public, despite decades of scholarship that views these factors as distinct dichotomies. Scholars, designers and artists are attempting to bridge these dichotomies by creating new terminology in order to describe the transformation of urban life that has been enabled by the use of digital technologies. However, the integration of these concepts is not without tension but, rather, working at the seams, cracks and crevices of media cities. Designers can intervene along these seams by taking a critical approach and adopting a kind of "design friction" that acknowledges the gap between rhetoric and reality.

## 2 Literature Review

This paper draws on theories from communications (Carey 1988; Innis 1951), design (Sanders 2008) and science and technology studies (Bijker, Hughes, & Pinch 1987; Latour 2005; Nissenbaum 2001; Star 1999) as well as from the field of urban informatics. Carey's distinction about the ritual view of communications, which understands media and technology as embodied experience rather than as the transmission of content is useful to understanding media cities. The social construction of technology and actor network theory are also useful in focusing on the actions of users as well as other kinds of actants including "smart" artifacts. Finally, the concept of values in design is necessary for understanding the ways in which digital technologies in media cities reflect the values of key stakeholders and decision-makers as well as users themselves.

Over the past five years, a growing body of academic scholarship has employed new concepts that are relevant to understanding the ways in which digital technologies are enabling emergent forms of organizing (Humphreys 2008), new modes of citizen engagement (Foth 2008; Foth et al 2011) and novel ways of experiencing urban space (Ito 2003). Specifically, these hybrid concepts attempt to bridge the traditional separation between physical and digital, global and local, and private and public. With respect to digital materiality, terms such as net locality (Gordon & Silva 2011), code/space (Kitchin & Dodge 2011), situated technologies (Shepard 2011) and codescapes (Forlano 2009) help to articulate the ways in which digital interfaces, artifacts and networks have been integrated into urban space. Dourish and Mazmanian offer five frameworks around the materiality of digital media and information technology, which cover information goods, information infrastructures, information production, information metaphors and information representations (2011). In particular, Dourish and Mazmanian refer to "the transformative materiality of digital networks," which cover the ways in which digital media and information infrastructures are embedded in objects, processes and places. Similarly, terms such as glocal have attempted to redefine the nature of globalization and local customization. In addition, concepts such as privately public and publicly private (Lange

2007) address the reversal of common perceptions of private and public through the use of digital technologies such as mobile phones and social media. Yet, in a sense, all of these hybrid terms struggle fundamentally with the ways in which the material world intersects with, and is reshaped by, the networked world through our use of digital technologies in media cities.

### 3 Discussion

Media cities can be discussed a variety of levels including 1) the urban level, which is characterized by large screens and interactive interfaces and networked infrastructures; 2) the object level, which is characterized by “smart” artifacts; and, 3) the body level, which is characterized by mobile and wearable technologies. While these distinctions are also reified categories – in fact, following actor-network theory, one could argue that there is no reason to distinguish between the actor and the actant (or object), or the citizen and their environment, these three levels provide a framework for looking at empirical examples from various city scales at which hybrid concepts, which are used to describe our use of digital technologies and emergent socio-technical practices, such as digital materiality, globally local (glocal) or privately public become valuable and relevant.

At the urban scale, Timo Arnall’s design practice uses a technique called lightpainting to bring the geography of Wi-Fi networks to life on a London street. This project is significant in that it allows for the visualization and visibility of electromagnetic spectrum, which is invisible to the naked eye yet which has significant implications for socio-technical practices and emergent forms of organizing. While Weiser’s visions of ubiquitous computing advocated for the disappearance of small, embedded computers into the periphery, Arnall’s project critiques the homogeneous perceptions about the seamless communication and connectivity of wireless technologies such as Wi-Fi and RFID by elegantly and deliberately discovering the size, shape and textures of different wireless technologies (1991). Similarly, in my own research, I have used spectrum analysis in order to understand the spatiality of Wi-Fi networks in public places by conducting a new kind of network ethnography (Howard 2002) of physical spaces. Through this investigation, I learned that wireless technologies do not map directly onto architectural spaces in a one-to-one ratio, and, often, the users of such outdoor, public networks cannot be observed because they may be hidden from view inside a building (for example, outside of the perimeter of a park). Thus, media cities display a kind of digital materiality that is composed of the physically observable qualities of a digital technology such as light and color that can be collected and rendered for the purpose of creating a more complex understanding of these technologies, both aesthetically and functionally.

At the level of the object, Mark Shepard’s Sentient City Survival Kit (<http://survival.sentientcity.net>), which draws on critical and speculative design, resists technologies of control by outfitting an umbrella outfitted infrared LEDs that are only visible to surveillance cameras. This project subverts the notion of surveillance by introducing a mechanism for privacy from the cameras (the umbrella) while interrupting their capture of data. The notion of publicly private is relevant here because while the user is still in a public and monitored place, they can take refuge under the privacy of the umbrella. Similarly, looking at socio-technical practices, my own research has illustrated that the use of digital technologies has allowed for a similar reversal of the use of private and public space. Take this simple example. In the mid-2000s, and still persistent today, is the fact that many people have flocked to cafes with laptops and cell phones in order to find workspaces with free access to the Internet and a stimulating environment for their work side-by-side with other “colleagues” in the absence of or in addition to a traditional office environment. When the cafes become too crowded

and loud, the indoor private or semi-private space becomes more public in that it is difficult to make a private phone call. Thus, mobile workers often go into the entrance vestibule or out onto the street in order to reclaim a private space for their phone calls, which are enabled through the portability of mobile phones.

Another feature of media cities is that they are simultaneously global and local. This is facilitated by networked digital technologies such as Wi-Fi. Innis differentiates between space-biased and time-biased media by which he means media that afford political domination of large geographic areas such as radio versus those that are less mobile and which reinforce local communities such as oral tradition or papyrus. However, my analysis of the use of Wi-Fi technologies in cafes and parks has illustrated that Wi-Fi is both a time-biased and space-biased technology (Forlano, 2008). Specifically, its geographical limitations bring people together in close proximity while at the same time allowing them to make global connections around the world. Similarly, Manuel Castells differentiates between spaces of flows and spaces of place, or those spaces that foster global commerce versus those that reinforce local community (1996). My analysis of mobile workers at coffee shops in New York revealed that Starbucks is simultaneously a space of flows and a space of place because while, on the one hand, 80% of Starbucks business is 'take-out,' underscoring the speed of commercial transactions, on the other hand, many mobile workers rely on the coffee chain as a site of local connection, informal interaction and a kind of co-working community, which reinforces its value as a place-based venue.

How can we understand these empirical examples from art, design and social science research about the future of media cities? In particular, how are the socio-technical practices, new geographies and emergent technologies relevant to non-Western and post-capitalist contexts? While social scientists primarily work to describe the lived reality of media cities at the intersection of people, places and technologies, artists and designers approach these issues from a different perspective by probing and intervening into media cities with new ways of visualizing and critiquing urban technologies and their consequences. Both of these communities are able to expose the cracks and seams that emerge at the intersection of the digital material, the globally local and the privately public through critiquing the dominant rhetoric about "smart cities" and "intelligent infrastructures." While emergent theoretical concepts in urban informatics and related fields have attempted to describe the integration of the digital world with the material world in a nuanced way, they do not successfully expose the seams where urban infrastructures do not work and where they breakdown for a variety of socio-technical reasons. By focusing on understanding and designing for these frictions, an approach that is currently being advanced in both social science, art and design fields, it is possible to contribute to and create relevant models for future media cities. In sum, rather than the exuberant proclamations about the promise of ubiquitous computing and big data for the efficiency and productivity of future urban environments, the new geographies of media cities are composed of frictions. These frictions occur at the nexus of socio-technical practices that illustrate the ways in which dichotomies between the digital and material, global and local and private and public are no longer relevant, yet, at the same time, they are not perfectly merged or intertwined. I propose a "design friction" approach in order to take these nuances into consideration when studying and designing for media cities, in particular, those in non-Western settings and post-capitalist contexts.

#### 4 Conclusion

The use of digital technologies in media cities is enabling the collapse of traditional dichotomies that have separated the digital from the material, the global from the local and private from public. These collisions have allowed for the emergence of a new kind of geography in media cities. However, these boundaries are not being eroded in a smooth and seamless way. Rather there are the site of tensions, cracks and seams (Chalmers, MacColl, & Bell 2003). As empirical examples from art, design and socio-cultural practices at various levels including the urban level, the object level and the body level illustrate, it is necessary to understand the specific ways in which these categories are being redefined in order to design for these emergent contexts and environments. Specifically, designers may find it useful to take on an agonistic, critical and/or speculative approach (DiSalvo, 2012) in order to take these inherent gaps into consideration. By taking such an approach along with a consideration of the kinds of values that are desirable in urban environments, it is possible to design media cities that support a reflective, citizen-engagement through the use of technology rather than merely a more efficient, productive, "innovative" and "intelligent" city.

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## FROM MOVIE SCREENS TO MOVING SCREENS: MAPPING QUALITIES OF NEW URBAN INTERACTIONS

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### **Abstract**

Next generation screens of diverse dimensions such as the Pebble e-paper watch, Google's Project Glass, Microsoft's Kinect and IllumiRoom, and large-scale multi-touch screen surface areas, increasingly saturate and diversify the urban mediascape. This paper seeks to contribute to media architecture and interaction design theory by starting to critically examine how these different screen formats are creating a ubiquitous screen mediascape across the city. We introduce next generation personal, domestic, and public screens. The paper critically challenges conventional dichotomies such as local / global, online / offline, private / public, large / small, mobile / static, that have been created in the past to describe some of the qualities and characteristics of interfaces and their usage. More and more scholars recognise that the black and white nature of these dichotomies does not adequately represent the fluid and agile capabilities of many new screen interfaces. With this paper, we hope to illustrate the more nuanced 'trans-scalar' qualities of these new urban interactions, that is, ways in which they provide a range functionality, without being locked into either end of a scale.

*Keywords: urban screens, public screens, public displays, cultural geography, interaction design, urban media, urban informatics*

### **Introduction**

While the internet increasingly diffuses into everyday life, four generations of screens – (1) the silver screen, (2) TVs, (3) PCs and laptops, and (4) mobile phone screens – are being embedded across the city and used by urban citizens. These screens disperse into everyday urban spaces and provide an interface between the physical and the digital city that allows for a tighter and more fluent integration of ubiquitous, mobile and real-time applications. Although the early beginnings of this ongoing trend have been the subject of several studies internationally (Aurigi & De Cindio, 2008; Eckardt, Geelhaar, & Colini, 2008; Foth, 2009; Foth, Forlano, Satchell, & Gibbs, 2011; Manovich, 2006; McQuire, 2008), research into new and emerging generations of screens is still scarce, and theoretical advancement is challenged trying to keep up with the fast paced development of technological innovations in this area.

This paper seeks to start building the budding theoretical foundations for conducting the first holistic survey, review and appraisal of the next generation of screens and associated interfaces and devices from an interaction design perspective. In order for this survey to set itself apart, it seeks to employ a design research approach that incorporates not only elements of critical theory and cultural studies, but also interaction design, development, and evaluation. This research concept aims to locate screen formats and their interrelationships within the urban environment based on technical, social and discursive scales of investigation. The outcome of the survey will be what we call a 'cartography' of the urban mediascape that examines the new design opportunities and challenges afforded by next generation screens.

The proliferation of screens is increasing exponentially: in our cities, domestic spaces, transport systems, vehicles, and on our bodies. These screens, displays and associated interfaces provide an almost ubiquitous gateway that connects the physical city and the digital city, but to what digital worlds are they connecting us? At a time when technical possibilities are almost limitless, this paper argues for contextualising future designs within a theoretical framework that sees technical capacity tempered by socio-cultural considerations. We aim to critically reflect on the process of the proliferation of screens collapsing the distance between technology, the city and the person.

Screens are more than technical installations and artefacts; they are also culturally constructed environments: reflections of the way in which their presence is conceptualised by those who interact (or not) with them. In this way, cultural studies emphasise the emergence of screens by social practices of users and their contexts alongside the producers rather than applying a constrained analysis of user behaviour only (Hepp, 2004).

Thus, research is required that provides an empirically grounded understanding of the way in which 21st Century screens are understood by their users and non-users alike. What happens when screens become more in tune with human interactions? And in turn, what does it mean for the uses of these systems to become increasingly unhuman – or cyborg. As Biocca (1997) notes, "On our computer monitors we may be just beginning to see a reflective surface that looks increasingly like a mirror. ... Like Narcissus looking into the pond, we are captured by the experience of this reflection of our bodies. But that reflected body looks increasingly like a cyborg."

We will first set the scene by pointing to some previous research studies relevant to urban screens. We then briefly introduce our three categories of next generation screens, followed by a discussion that critically challenges conventional dichotomies such as local / global, online / offline, private / public, large / small, mobile / static, that have been created in the past to describe some of the qualities and characteristics of interfaces and their usage. More and more scholars recognise that the black and white nature of these dichotomies does not adequately represent the fluid and agile capabilities of many new screen interfaces. With this paper, we hope to illustrate the more nuanced 'trans-scalar' qualities of these new urban interactions, that is, ways in which they provide a range functionality, without being locked into either end of a scale.

## Background

The availability of cheap LCD and LED / OLED technology has given rise to a proliferation of new types of screens: Television sets with 3D capabilities; an increasing number of LCD screens in retail outlets and cafés (often used only to display muted, free to air TV); and the screens of mobile devices such as smart phones and tablets. There are over 29 million mobile subscriptions in Australia – a penetration rate of around 130% – including 16.2 million mobile handset subscriptions with internet access capability (Australian Bureau of Statistics, 2012). When the Pebble “e-paper” watch project launched on kickstarter.com, it asked backers for US\$100,000 support. It received more than 100 times the original goal: over US\$10M. This figure illustrates the popularity and excitement that ubiquitous computing technology sparks with users and consumers.

What will be considered the next (or fifth) generation of screens is still debatable. Contestants are emerging across three categories. New form factors of (1) personal screens are entering the market, such as the Pebble wrist watch with a programmable screen even smaller than that of a mobile phone. Google’s Project Glass also features in this arena, offering the controversial ability to digitally augment the user’s view in real-time with contextual and location-based information. In the (2) domestic space, 3D televisions, game consoles with frameless image projection capabilities, and smart bathroom mirrors using OLED technology, are becoming available. Some high-end luxury cars already display digital information on top of the windscreen. Recent product innovations allow older vehicles to be retrofitted with such head-up displays that render location-specific information as the vehicle navigates through the city. Finally, (3) public screens now feature not only standard sized LCD TV screens often found in cafés, retail outlets and public transport, but also large scale projection areas and digital screens at city plazas and civic centres for viewing by large crowds.

Previous scholarship relevant to our argument includes: communication studies into aspects of mobile phone usage (Castells, Fernández-Ardèvol, Qiu, & Sey, 2007; Katz, 2006, 2008; Ling, 2008; Nyiri, 2005); studies into urban screens and media façades (Haeusler, Tomitsch, & Tscherteu, 2013; Struppek, 2006; Willis, Roussos, Chorianopoulos, & Struppek, 2010); mobile interfaces in public spaces (de Souza e Silva, 2012); games studies into engagement and play (Johnson & Gardner, 2010; Przybylski, Rigby, & Ryan, 2010); new media and information aesthetics (Manovich, 2006, 2012); and HCI research into augmented reality (Billinghurst, Langlotz, MacIntyre, & Seichter, 2011; Bimber & Raskar, 2005; Furht, 2011). However, there does not yet exist a substantial body of scholarship that examines how the arrival and uptake of the next generation of screens will be integrated into our city environments to influence, support, and engage urban residents.

McQuire’s (2008, 2012) research explores the potential for linking up large video screens in public spaces in Melbourne and Seoul for live events; and he also studies the interplay between technology, policy, culture and user-led innovation in the context of networked public space. Whilst his work has focussed on large screens in a public space context, our paper is different in two key aspects. First, our study examines the next generation of urban screens not in isolation but across three categories (personal, domestic, and public). Second, our study employs a research approach that combines cultural theory with design practice in order to deliver critically and culturally informed outcomes across both theory and design practice.

### New Design Opportunities of Next Generation Screens

For the purpose of the paper, we introduce three categories of screens. Personal Screens include any type of screen display that is mainly used for personal use, for example, PCs, laptops, mobile phones, portable music players, and tablets. More recently, this category has been extended to include small scale pedometers with mini LCD displays, as well as the Pebble wrist watch being launched at the time of writing, an 'e-paper' watch that connects with and extends one's smart phone display. The form factor of the Pebble watch is of interest to this study, as it represents an intermediate step between digital information display and the physical world that is less obstructive than a mobile phone.

Conceptually, the next step in this development is a more fluent display of digital information overlaid on the physical world view. Although augmented reality applications have been subject to research scrutiny for some time, the majority of applications are restricted to niche usage and still have an experimental character in complex urban environments. They usually require prosthetic help such as the view finder of a camera, or lack mainstream take-up. Google's Project Glass is intended to change this situation by presenting a prototype that heralds the availability of true real-time augmented reality for use within the urban social fabric.



Figure 1: Pebble watch



Figure 2: Google Project Glass

Our category of Domestic Screens includes any type of screen display that is mainly used for private use by family members and groups of friends, for example, TVs, and new generation game consoles such as the Wii U and the Microsoft Xbox 720 with IllumiRoom. Although these devices can be used by a single user, they are designed to accommodate group usage. The trend in this development space is towards greater immersion through 3D glasses, frameless projections that extend beyond the boundaries of the TV set (e.g., IllumiRoom), or multiple screens being used simultaneously (e.g., Wii U). New screen innovations in domestic spaces also include internet enabled fridges, OLED-lit bathroom mirrors, and other smart appliances featuring novel screen technology.



Figure 3: Microsoft Xbox 720 & IllumiRoom

We include the car in this category, since although screen interactions are mainly driver-focused, some extend to passengers. Luxury vehicles are now often equipped with head-up displays (HUD) that show information without requiring the driver to look away from the traffic. Pioneer has launched the CyberNavi in Japan, which allows any car to be retrofitted with a HUD unit.



Figure 4: Pioneer CyberNavi head-up car display

The category of Public Screens refers to any type of situated screen display that is publicly accessible, for example, the LCD screens commonly found in retail outlets, cafés, public transport, and points of interest, as well as large scale media façades and urban screens such as the prominent display at Federation Square in Melbourne. The Urban Informatics Research Lab has installed and maintains a public screen at a local bus stop that is serviced by the #391 shuttle bus connecting the two main campuses of QUT. This screen has been used to trial prototypes of our screen applications 'in the wild' (Chamberlain, Crabtree, Rodden, Jones, & Rogers, 2012; Schroeter, 2012; Schroeter, Foth, & Satchell, 2012; Seeburger & Foth, 2012).

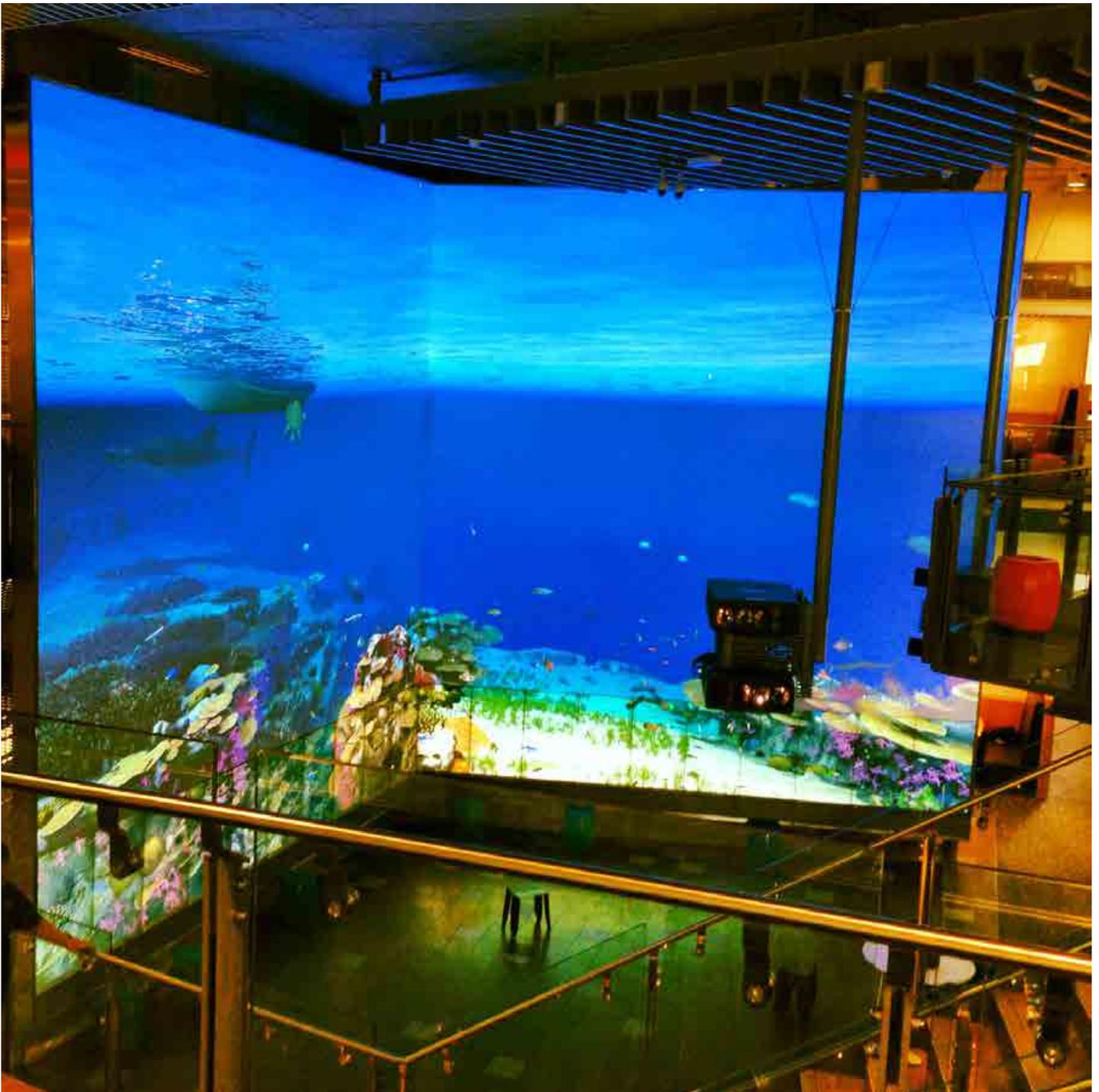


Figure 5: The Cube at QUT

This category of screens also includes cutting edge multi-touch screens of very large dimensions, such as The Cube at QUT (Figure 5) which is made up of over 40 large (55-inch) multi-touch screens, complemented by 14 high-definition projectors, creating large-scale projection surfaces, to form five interactive “walls,” each of which contains up to 12 screens. The surfaces support multi-touch, multi-user interaction, driven by a dedicated network for multi-touch data, synchronisation and content delivery.

### **Towards a Cartography of the Urban Mediascape**

As both technology and technological practice evolve, HCI has expanded its focus from the design and assessment of particular interaction styles, to encompass the role that interactive systems play in connecting people with their world. The focus of HCI is no longer grounded by the notion of the stationary user moored to a fixed PC in an organisational context. Rather, the user is constructed as fluid and mobile, interacting across many contexts.

The development of screen interfaces has similarly broadened. These days, users are not only exposed to a standard TV set at home and a desktop computer at work, but to a plethora of different screen interfaces that blur many of the previously drawn boundaries between home and work, mobile and static, public and private. Despite a richer and more nuanced perspective of use emerging from HCI research, there is a need to extend the focus to encompass the next generation of screen interfaces. We argue for a more holistic and forward-looking assessment of ways in which humans interact with different screen formats in different situations. Considering screen interfaces as ‘social interfaces’ (de Souza e Silva, 2006), an exploration of the way that they intermediate and shape interactions on a technical, social and discursive level requires asking how certain functionalities, components and formats work in the wild – putting the ‘technicity’ (Kitchin & Dodge, 2011) of screen interfaces in the centre of attention. It refers to the extent to which screens can augment, supplement, mediate and regulate our lives. Furthermore, we appraise three categories of screens and associated interfaces and devices and do not isolate one category, or ‘bet’ on any single product’s commercial success. In this way, we aim to develop a ‘screen cartography’ to help analyse the impact of these new types of screens on urban informatics applications and real-time data innovations. This will be achieved twofold: First, the point of departure is our theoretical hypothesis that with the proliferation of screen interface formats being used in many different contexts, we are already witnessing a post-cinematic screen environment in the city that requires theoretical representation and articulation. Conventional cultural norms of cinematic screen formats require the audience to sit down, the lights to go out, and the content to be observed and consumed. Such conventions are irrelevant to many emerging new formats, because they draw an isolated view on one screen interface. We need to explore and link the emerging new practices of screen usage to unpack the interrelationships among different screen formats and build a theory of a ubiquitous urban screen environment.

Second, the catalyst for the theory building will be the study’s critical view on conventional dichotomies. This new urban screen mediascape cannot be easily described in simplistic scales such as local / global, online / offline, private / public, large / small, or mobile / static. It appears that Tripodi’s (2008) term “trans-scalar,” that is, subject to multiple forms of scales, but transcending them in previously unseen ways, is a fitting attribute of this new urban mediascape. This notion appears the more significant when compared with a parallel development in physics. The conventional subjects of physics investigations were larger in size than the atomic scale and much slower than the speed of

light. Only once humanity's scientific inquiry ventured beyond those two parameters did we acquire new theoretical innovations such as Quantum Field Theory. The analogy with physics was also made by Arida (2002) who postulated the "Quantum City" as a new way to conceptualise complex urban systems. Similarly, in interaction design and HCI we are now exposed to screen interfaces that venture outside our traditional grasp both in terms of size (much smaller and much larger form factors) as well as in their immersive abilities to digitally augment, enact and transduce reality.

Seeking to fill a theory gap, we are working towards a cartography of urban screen mediascapes that adequately describes the qualities and characteristics of the next generations of screen interfaces and how they are perceived and experienced by different users with different applications across different contexts. In order to operationalise the theory generation, the study will ask holistic questions, such as:

- What types of scales adequately describe our empirical observations?
- To what extent are our empirical observations more adequately described being on one or the other end of a given scale, or, in fact, showing qualities of transcendence, agility, or elasticity, that is, they move along a given scale?

In addition to questioning previously mentioned, simplistic scales, the study will focus on the following four scales:

1. Divergence vs Convergence: At a time when the average iPhone staggers under the weight of a plethora of apps that do everything from acting as a carpenter's level to a pregnancy predictor, we challenge this software convergence and juxtapose it with a trend towards form factor divergence represented by the advent of new screens that are tailored to different contexts (Howard, Hartnell-Young, Shanks, Murphy, & Carroll, 2004). What impact will increased platform interoperability have on this scale? Innovation in terms of design outcomes is addressed through the process of rethinking the current form factor that has previously seen each new innovation embodied within a mobile artifact. The study seeks to discover what is possible when functionality is freed from the form factor of a specific mobile artefact.

2. Unique vs Ubiquitous: Gordon and de Souza e Silva (2011) argue that place continues to matter in a networked world: "The local still matters, and in fact, it may matter more than ever before because it can have an immediate and powerful global impact." (p. 168). The study will particularly ask, when do situated screens require unique (i.e., local) content and applications, and when is it acceptable to design with a ubiquitous (i.e., global) context in mind? What are the mechanisms to shift between these two ends of the spectrum?

3. Attenuation vs Amplification: The study appropriates the "U-Space" framework (Watson, Berthon, Pitt, & Zinkhan, 2004) which contrasts the ability of some screens and screen applications to display ambient information (attenuating) with their ability to grab viewers' attention (amplifying). Some screens such as the ones installed across the city of Oulu in Finland already take advantage of this scale (Lindén, Heikkinen, Kostakos, Ferreira, & Ojala, 2012). This study will investigate the affordances of next generation screens to flexibly move in between attenuation and amplification.

4. Informational vs Performative: Verhoeff (2012) describes a trend away from screens only representing pure information, towards a performative quality of digitally augmented city spaces. This study will explore how different categories of screens, particularly when combined with other interface devices such as the Kinect, can turn passersby into viewers and viewers into actors. Further, the spectacle created by users-turned-actors can attract further viewers in turn.

## Conclusion

The city has become increasingly saturated with new digital screens, from small programmable wristwatches to large multi-touch display facilities. These next generation screens promise more immersive user experiences. With this paper, we hope to set the scene for a program of research that will explore how personal, domestic and public screens contribute to new media architecture and interaction design theory and deliver innovative future designs.

This paper outlines our early thoughts on the subject, arguably rough and in need of further refinement. Thus, we invite interested others to chime in on the debate and join us on the journey towards a new cartography of the urban mediascape.

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## MANIFESTING FLOW: AN INTERNET OF CARS

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### **Abstract**

"The advent of a mixture of geographical information systems, global positioning and wireless communications means that getting lost will no longer be an option and, equally, that increasingly it will be possible to track all cars, wherever they may be. The result is that both surveying and being surveyed will increasingly become a norm: it is even possible that, through the new informational and communicational conduits that are now being opened up, some of the social cues that have been missing from the experience of driving will be re-inserted (for example, who is driving a particular car), making the whole process more akin to walking again, but with a new informationally boosted hybrid body, a new incarnation." (Thrift 2004)

In his 2004 paper, Nigel Thrift argues for an update of de Certeau's romantic idea that the walker is the primary agent within the city. Thrift identifies digital technologies as offering a more complex substrate for enabling communications to become part of a negotiation with space (Thrift 2004). The car complimented with satellite navigation, air conditioning, musical soundtracks and a figure-hugging seat provides a very personal interface with a city, one that predisposes the driver to allow the car to become an extension of his/her body. Once driving, we find ourselves expressing a series of characteristics that indicate a deep embodiment of the car including: the charged emotional state in which we engage with others, communication techniques using lights and movement, and the 'tactics' that allow us to navigate spaces by reading the 'gestures' and actions of others (Katz 2000).

Thrifts explored the potential for digital systems to extend the social negotiation with a space through the car. Published in 2004, eight years later the wide spread adoption of smart phones means that pedestrians now match and extend the technology that Thrift identified in the car.

This paper introduces work in progress toward an Internet of Cars developed for the Sixth Sense Project, a funded UK Research Council project that aims to capitalise on the connection between car and smart phone and offer an integrated platform that links the transport network with social networking. The paper presents an experimental platform that combines data gathered from Automatic Number Plate Recognition (ANPR) cameras and a smart phone application that allows

participants to use cars as a form of internet. The speculative platform that is being developing for a tourism community in the South of England, is a creative approach to conceiving cars as data packets through the use of their license registration plate and offering a playful platform that allows users to engage with them as though they were part of social media. The paper introduces the concept of the Internet of Things and situates the experimental use of cars as a manifestation of flow across social networks.

## **Introduction**

The vision of an Internet of Cars is located within the emerging technical and cultural phenomenon known as 'The Internet of Things'. The term is attributed to the Auto-ID research group at MIT in 1999 (Ashton) refers to the technical and cultural shift anticipated as society moves towards a ubiquitous form of computing that facilitates the connection of everyday objects and devices to all kinds of networks. The analog bar code that has for so long been a dumb, encrypted reference to a shop's inventory system will be superseded by an open platform in which every object manufactured will be traceable from producer to distributor, and potentially every single person who comes into contact with it following its purchase. Further still, every object that comes close to another object, and is within range of a reader, could also be logged on a database and used to find correlations between owners, environmental conditions and applications.

## **1 The Problem**

However the authors suggest that a technically determinist vision of tags and codes appears to be obscuring an opportunity to fold existing 'things' into an internet for traffic. Cars are the single most visual form of actual moving data that we know and yet they are wholly overlooked as packets of data that interface with humans, businesses and the environment. The vision within this paper introduces the principle that car registration plates can be used as unique identifiers in the same way as barcodes and offer a platform for people to store data on to them, use them as interfaces to social networks, pass messages between people, and connect to environmental data. The authors speculate that the primary barrier is one of habit. The public do not identify the registration plate on a car as a portal to the internet in the same way that QR codes (quick response barcodes) or RFID are beginning to offer. Our objective: Identifying cars as things within an Internet of Things that have the potential to link people, services, artefacts and places. Our barrier: The public identification of cars as packets of data. In Sixth Sense transport (Davies et al 2011) we are looking to provide travellers with many forms of interface to enable them to 'see' the flow of traffic and begin to anticipate new travel opportunities. Part of this work involves developing visualisations of future transport options as well as mobile applications that support sharing. Considering cars as extensions of social media is one way that we are exploring how to alter people's perceptions of automobiles and offer them new models akin to the fluidity of email, social networking and file sharing, systems that are part of the paradigm that Castells describes as the Network Society (1996).

## **2 Internet of Cars — The potential for registration plates to act as information carriers**

Dynamic, fluid and representing individual packets of information within a UK wide network, cars could be critical components within the emerging phenomenon known as the Internet of Things. Each one tagged with a unique identifier that is scannable with smart phones, as well as the highly sophisticated roadside cameras, cars with their number plates have been the equivalent of barcodes on supermarkets products for many years. However they remain woefully overlooked. This vision explores a commercial and social platform for turning cars into networked artefacts

that will provide the missing link in connecting the flow of things to people, artefacts environments and businesses. Visible in the street, cars that are linked through a common web platform offer a fluid interface to the Internet of Things that will make visible the flow of products and services that could change the way we inhabit cities in the 21st Century. Able to 'see' where things have come from and where they are going, cars have the potential to become the next web browser. Cars offer a local and dynamic interpretation of social activity: where people go, what their habits are. Lift sharing, moving things such as shopping, postal items and messages suddenly transforms the

opportunities for an Internet that we can 'see'. In contrast is the static life of things such as barcoded products bought from supermarkets which only appear 'on the grid' when they are scanned at the point of manufacture, in the warehouse, and finally at the point of sale (Sterling 2005), cars are in the public domain and they offer an open platform upon which things in flow can suddenly be made accessible. The ability to tag a vehicle's registration plate with information to allow others to read at various points in the future offers a potentially new way of disseminating not only traffic information (journey times, congestion/incident hotspots), but data on weather/road conditions, special events, and user relevant offers.



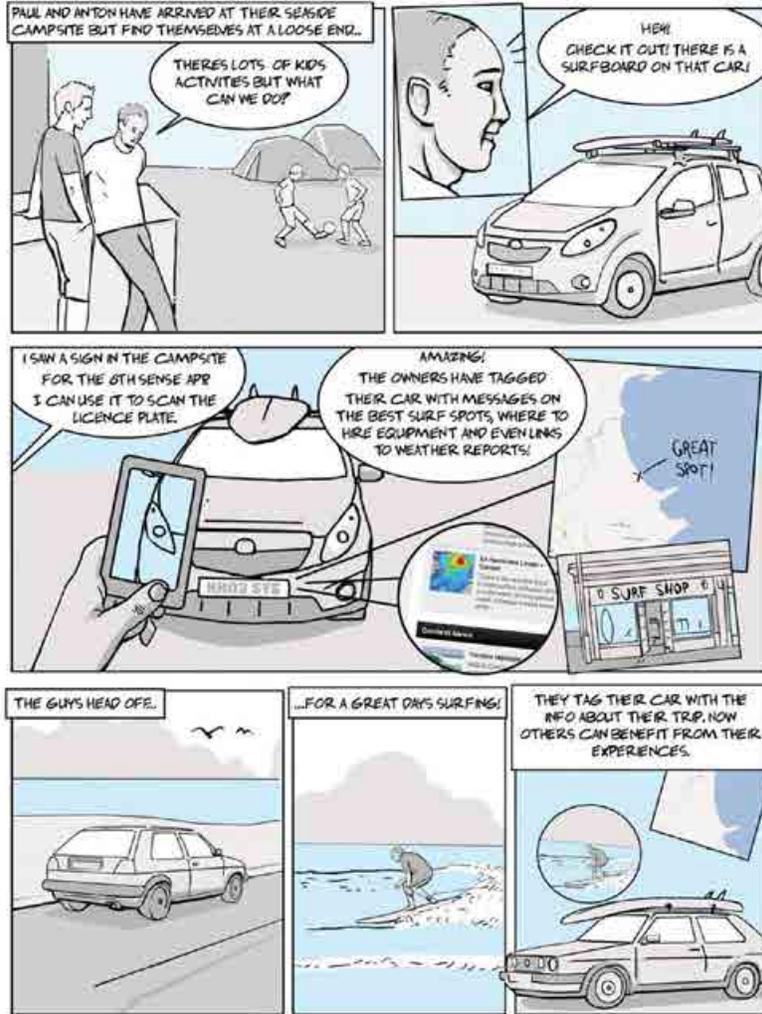
Figure 1. Vehicle registration plates and Quick Response barcodes both operate as individual identifiers.

### 3 Case studies

The primary convergence scenario for the Internet of Cars projects are the thousands of cars that travel around the roads between the English towns and cities of Weymouth, Dorchester and Southampton, in particular during the tourist seasons. The A35 Dorset corridor linking Weymouth to Bournemouth and connects the historic towns to the beaches and coast line of the south of England is no different to any other in its reliance upon the car as a conduit for moving people and things to support personal, social and commercial needs. At present though, there are no connections between people and the things (cars). Through correlating the data accrued by the roadside traffic cameras with social data that is mined at each location and data that is associated with specific cars, the research team are developing a platform that will reveal the car as a point of network inquiry for tourists. In short, cars that move around the area, being scanned by the ANPR system will carry with them up-to-date data about the area that is submitted by fellow car drivers who associate data with their car number plate. Through close collaboration with SCAN, an agency developing digital and interdisciplinary arts in the South of England supported by the Arts Council of England and Bournemouth University, the intention is to develop a public platform that enables car registration data gathered from the traffic cameras to be complemented by crowd sourced data. The promotion of free smart phone apps that allows residents and visitors to scan cars will provide further data that will contribute to an image of the cities social, economic and environmental flows. At present two initiatives are planned to encourage the use of the system: the first uses the car as a place to store photographs and text to share with others through the mobile scanning of the number plate, the second extends the reach of this data by sharing location specific information via APNR cameras. These two ideas are described below through cartoons that explain the context and user experiences for both initiatives:

Case Study 1: The car holds the memory...

Two surfers get help from a car about where the best surf spots are whilst on their camping holiday...



### Case Study 2: The memories are spread through the use of roadside ANPR's

A family that has finished its holiday in Weymouth shares its memories with another family who are heading in the opposite direction and are about to start their holiday...



#### 4 Preliminary Participant Feedback

Preliminary research has explored the topic during in-depth interviews with 15 participants at a campsite in Dorset (see Filimonau et al, 2013, in conference proceedings for more details) who were introduced to the car tagging idea illustrated in case study 1. Participants found the idea interesting but had some initial problems grasping the concept given they largely fail to appreciate the car as a node within a network. For instance, within the campsite environment, people felt they would probably talk directly to other visitors. On the other hand, the car provides an intermediary in the social exchange process which, for some people, overcomes barriers imposed by social interaction. Within a campsite community, visitors have 'weak ties' (Nahapiet and Ghosal 1998). In this setting the car has potential as a portal for exchange of information linked to visual clues about the occupants such as their equipment or children's age. It removes some of the problems associated with social exchange such as reciprocation (Burke et al 2011). For example, some

campsite visitors were very reluctant to ask other visitors directly for help as this embeds them into a reciprocation arrangement that might impose subsequent costs they might be unwilling to provide. In this context, car tagging may extend 'network capital', that is people's access to the coordination systems that facilitate access to services and opportunities (Urry 2012). This, in turn, extends social capital (Larsen et al 2007).

On the other hand, given the highly personal associations with cars, participants expressed some concerns about privacy. People understand that car number plates can be traced directly to owner's details and this introduced some reticence as participants were not sure what type of information might be retrieved. There were also concerns about 'who' might be allowed to tag details onto 'their' number plate and 'what' information might be left for others to read. For instance, someone could leave a rude or highly personal message that other users could retrieve unbeknown to the car owner. This relates to trust, one of the core components of social capital (Burke et al 2011). Participants troubled by this aspect showed a preference for face-to-face interactions which they felt provided an opportunity to appraise the individual and the consequent value of their information.

Participants who grasped the concept were excited by the opportunity and experienced a moment of realization when they visualized the potential; one woman likening the car to her Facebook page and her 'wall' where others can write comments. Potential users were comfortable so long as they maintained control, as in a Facebook page, and had the ability to delete and edit contributions. The surfing scenario in case study 1 developed, in part, from an early interview in which a participant described the potential for linking up with likeminded people who would be able to see he is a windsurfer from paraphernalia on his car.

## 5 Conclusion

*"Society is not the whole 'in which' everything is embedded, but what travels 'through' everything, calibrating connections and offering every entity it reaches some possibility of commensurability. We should now learn to 'hook up' social channels like we do cable for our televisions. Society does not cover the whole any more than the World Wide Web is really worldwide." (Latour 2005)*

With the opportunities that the scale of real-time data derived from the ANPR data is providing, coupled with the reticence of our preliminary users who struggle to connect their social media practices with that of driving their car, the project offers a critical exploratory platform upon which we can begin to ameliorate the disconnection between a transport network and a social network. As the Internet of Things begins to manifest itself in different forms, there is no doubt that as objects become connected to the internet, that they will begin to change the way that we go about transforming age old practices. From scanning second hand good to find out who formally owned them, to scanning cars to find out what the weather is like where we plan to go today, the connectivity of things is going to offer new opportunities for how we relate to the things that are around us.

Despite representing an extraordinary number of nodes within a system, of the 31,035,791 registered cars on UK roads accounted for in 2009, very few remain actually represented in most networks. In direct contrast is the precedent of 50 million users of mobile social networking worldwide. Not only does this build and reinforce social ties distributed over time and space, it also permits real-time data stream aggregates to inform network participants of new recommendations (e.g. new books on

Amazon, 'second guessing' new contacts in the industrial networking tool LinkedIn) and the scope to establish new network nodes. This difference between the rich semantic networking facilitated by social networking technologies and the low-level communications capabilities often associated with vehicle networks represents the primary motive for the Internet of Cars projects.

It is hoped that through the case studies that opportunities for connections that are otherwise invisible to current users (e.g. sharing information about the local area) affords participants the potential to re-think decision making processes about travel and adopt social networking methods. As the reading and writing to objects through tags becomes more and more ubiquitous, 6ST Internet of Cars offers an open platform which will interface with current instances of the Internet of Things and offer a critical socio/technical substrate around which new transport habits may emerge.

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# Media Geographies: Geographies of Difference

Moderated by Frank Eckardt, Bauhaus-Universität Weimar

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## BEYOND THE DIGITAL CITY- REMEDIATING SPACE AT A REGIONAL SCALE

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### **Abstract**

This paper will explore the links between ICT infrastructures and social communities at a regional scale. We argue that there is a need to move beyond the technologically deterministic rhetoric of the 'digital city' and to consider the subtle changes occurring in the ways that people live their lives in everyday spaces as a result of ICT changes. In this context, there is a growing body literature on theoretical issues relating to the changes occurring in urban space, but very little that addresses the regional and rural scales. These settings have been neglected as a site of study, and yet they have the potential to benefit most from the linking and merging of online social networks and physical places (Graham 2002). Human geographers and sociologists such as Crang and Hampton have investigated the nature of ICT use and changes at neighbourhood level, in what Crang et. Al. (2007) characterise as the 'remediation of neighbourhood life', drawing on Bolter and Grusin's original use of the term 'remediation' (1999). This paper will address how such ICT infrastructures, and in particular broadband internet access, become localized within a community; and the broader impacts this may have on social inclusion and sense of place within a neighbourhood setting. We introduce a model for understanding these changes through looking at the links between access to public spaces for ICT use and levels of social inclusion in the context of a neighbourhood setting. We contextualize the study of the interplay between the invisible networks and material world of regional urban and rural life through a case study of internet use a regional town in South-West UK.

### **1 Introduction**

There has been a great deal of research on the effects of digital media and ICT's on the urban condition. Similarly the impacts on social and community based structures and networks of the use of new forms of communication and interaction through technology has been studied from a range of perspectives, but with very little critique of the complex urban nature of such media. Yet ICT's and new modes of remote communication are having, and have had significant effects on communities that are not cutting edge high urban settings but rather at regional and rural scales. These settings have different structures and patterns of inhabitation than those of highly urbanised city centres and therefore corresponding different relationships with social and economical issues.

The diminishing significance of space has been asserted by Castells (1998), who claims that the set of global network relations shaped by ICT flows dominates over the 'space of places'. Putnam (2000) writes of a decline in social capital, describing how interactions with one's social connections are increasingly being enacted behind closed doors within private spaces. Lofland (1998), too, laments the loss of time spent within the public and parochial realms, as modern technologies have allowed for yet more activities to be carried out solo from the comfort of one's own home. Hampton has offered an alternative hypothesis: "new ICTs may not create a 'space of flows' that is separate from the 'space of places'. ICTs may be increasingly embedded into all aspects of everyday life and existing spheres of interaction. In the case of neighborhoods, the integration of ICTs into everyday life could reverse the trend of privatization within the parochial realm" (2007: 715-716).

The focus of this paper will be on how to qualify and evaluate the effects of digital networks and interactions on place-based social structures such as neighbourhoods in regional and rural settings. It will explore the characteristics of place-based communities and the interplay between the invisible networks and material world of regional life. In order to do this we will introduce the use of the term 'remediation' (Bolter and Grusin 1999) to enable an approach to understanding how ICT supported change in community networks at a neighbourhood scale is contextualized. The final section of the paper will discuss some early qualitative findings from a case study in a regional town neighbourhood in South West UK. The empirical work looks at the effects of internet access on local people and how it impacted on both their sense of place and the degree to which they felt socially included in their neighbourhood setting.

## 2 Remediation

Bolter and Grusin discuss the effects of new media by looking at how the idea of a 'networked self' is based upon what they term 'hypermediacy' experiences (1999). They characterize this 'self' as someone who is 'constantly making and breaking connections, declaring allegiances and interests and then renouncing them – participating in a video conference while sorting through email or word processing at the same time' (1999: 232). This approach recognizes the degree to which communications media are anchored in the complexity of a whole range of social connections. Rainie and Wellman draw on Bolter and Grusin's example to reflect on how media are just an extension of way the self is reconfigured in different situations "as people reach out, connect and emphasize different aspects of themselves" (2012: 126). Broadening this out to social networks, ICT's are an extension of the way that communities have always been remediated; from the kind of community once established by the introduction of the telegraph and telephone (de Soja Pool 1977), to the more recent growth in virtual communities and online social networks. Typically many approaches to the changes caused by ICT's have focused on the quality of new and unfamiliar experiences. But Graham points out that Bolter and Grusin (2000) 'have shown that the whole raft of current new media innovations are not being used in ways that are divorced from the use of existing media, means of communication and material practices in places' (2004: 18). In this context, Graham highlights that 'the reality of the internet is more important than the dazzle' (2002: 4–5). Instead Graham claims that new media enable a 'subtle remediation' (ibid) of both traditional media and also face-to-face communication, and the corresponding experience and construction of place. In this way there is a much more differentiated and complex merging and combining of existing practices with existing social and spatial patterns. Aurigi outlines how ICT's redefine 'behaviours in ways we do not fully know' (Aurigi and de Cindio 2008: 8), and argues that there is a need to 're-frame our existing spatial concepts to accommodate this increased

range of possibilities' (ibid). In the context of malleable and highly social organisations such as neighbourhoods, the concept of remediation offers a more realistic approach to understanding the everyday changes occurring to and within them as a result of ICT's.

### 3 Neighbourhoods

It is difficult to find consensus as to what constitutes a neighbourhood. The debates within the social sciences deriving from work by those such as Frankenberg (1969), Bell and Newby (1971) and Crow and Allen (1994) highlight the complexities of not only defining but also studying what constitutes neighbourhoods and untangling this from concepts of community. Theorists of neighbourhood generally agree that they are both spatial and social spaces. Traditionally, one of the key concepts of neighbourhood is proximity in a topographical sense, but a neighbourhood is actually a far more differentiated social framework that does not simply relate to a physical setting. Galster defines them as 'bundles of spatially-based attributes' (2001: 2112) and Massey (1994) has pointed out that neighbourhoods cannot be regarded as containers in which social interactions take place, but rather as trajectories and intertwining social networks.

#### 3.3 Remediation of Neighbourhood Connections

Despite the ubiquity of the dis-embedding and de-territorialisation claims, local identifications and place-based communities and attachment to place have remained salient (Pahl 2005; Savage et al. 2005). Social networks use multiple media linking online and offline worlds of multiple origins, through different technologies at varying scales. And yet the study of new ICT's has maintained the frame of neighbourhood as either online or offline. Online relationships have tended to be recognized and studied as entities in themselves, isolated from existing social networks and existing means of communication. Yet, mediated social networks need not be global and disconnected from local spaces but according to Crang et. al. are instead 'multiply (sic) emplaced; such that they may sustain neighbourhoods rather than oppose them' (2007: 2411). Hampton's study of a wired neighbourhood found that where people used multiple methods of communication: direct in-person contact, telephone, postal mail, and more recently fax, email, chats, and email discussion groups both locally and globally the consequence was that 'wired residents neighbored much more extensively and intensively than their non-wired counterparts' (2002: 228). Therefore presence and use of media in a neighbourhood offer a new type of localised sociality, that occurs at different temporal and spatial scales simultaneously (Hampton 2002). Crang found that 'more marginalised neighbourhoods tend to be characterised by instrumental and episodic ICT usage patterns which are often collectively organised through strong neighbourhood ties... It is those neighbourhood ties that enable on-line access' (2006: 2405). Therefore regional, deprived neighbourhoods that typically have a high level of social capital operate very differently from highly urbanised and economically thriving settings. The conditions that often characterise a marginalised regional communities; lack of social mobility, lack of access to good housing and geographical isolation provide the conditions for internet access to be supported through existing neighbourhood ties. In this way the remediation of the neighbourhood is very much a process embedded within existing social practices and connections. In order to investigate this condition we propose a model of the relationships between mediated social networks and public space in a neighbourhood which looks at the relationship between sense of belonging (place) and social cohesion (see Figure 1.). According to Forrest and Kearns communities that lack social cohesion have 'low levels of social interaction between and within communities and low levels of place attachment' (2001: 2128). Therefore for a socially sustainable neighbourhood to flourish,

understanding the conditions for enabling socially inclusive communities together with one's that can promote a strong sense of place are vital to the future of the neighbourhood.

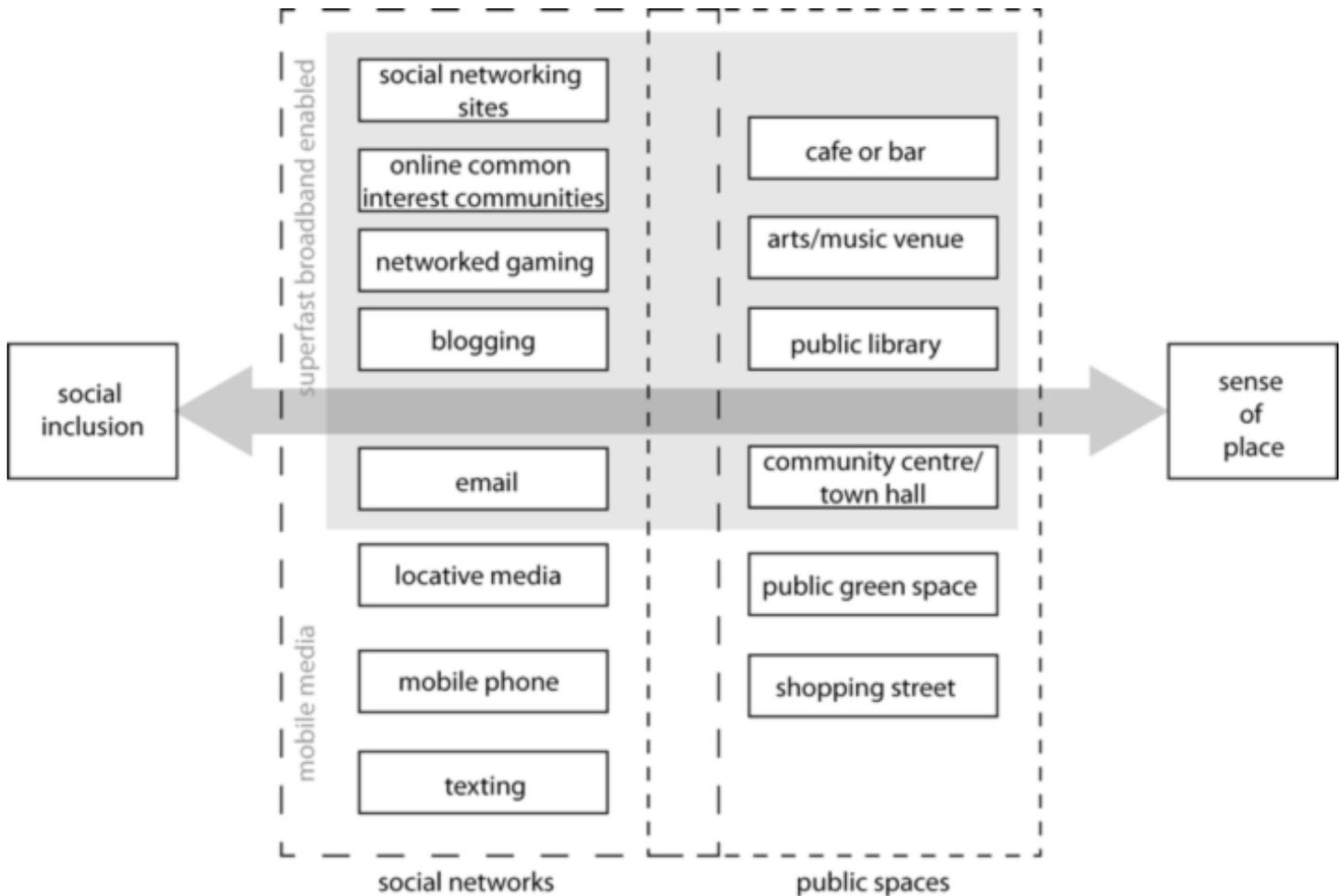


Figure 1. A framework model of the relationship between social inclusion and sense of place.

#### 4 Case Study: Liskeard

Liskeard is in the County of Cornwall, UK, and is part of a large –scale European Union pilot project to rollout superfast broadband, and thus provides a unique opportunity to assess digital neighbourhoods. A key issue in the South West UK, a post-industrial region, is geographic and economical isolation and a corresponding lack of access or availability of services and employment, which is seen as linked in with social exclusion. Neighbourhoods and communities in the region typically have a combination of complex social issues, such as high unemployment and lack of social mobility but contrastingly high levels of social capital or a local 'sense of place'.



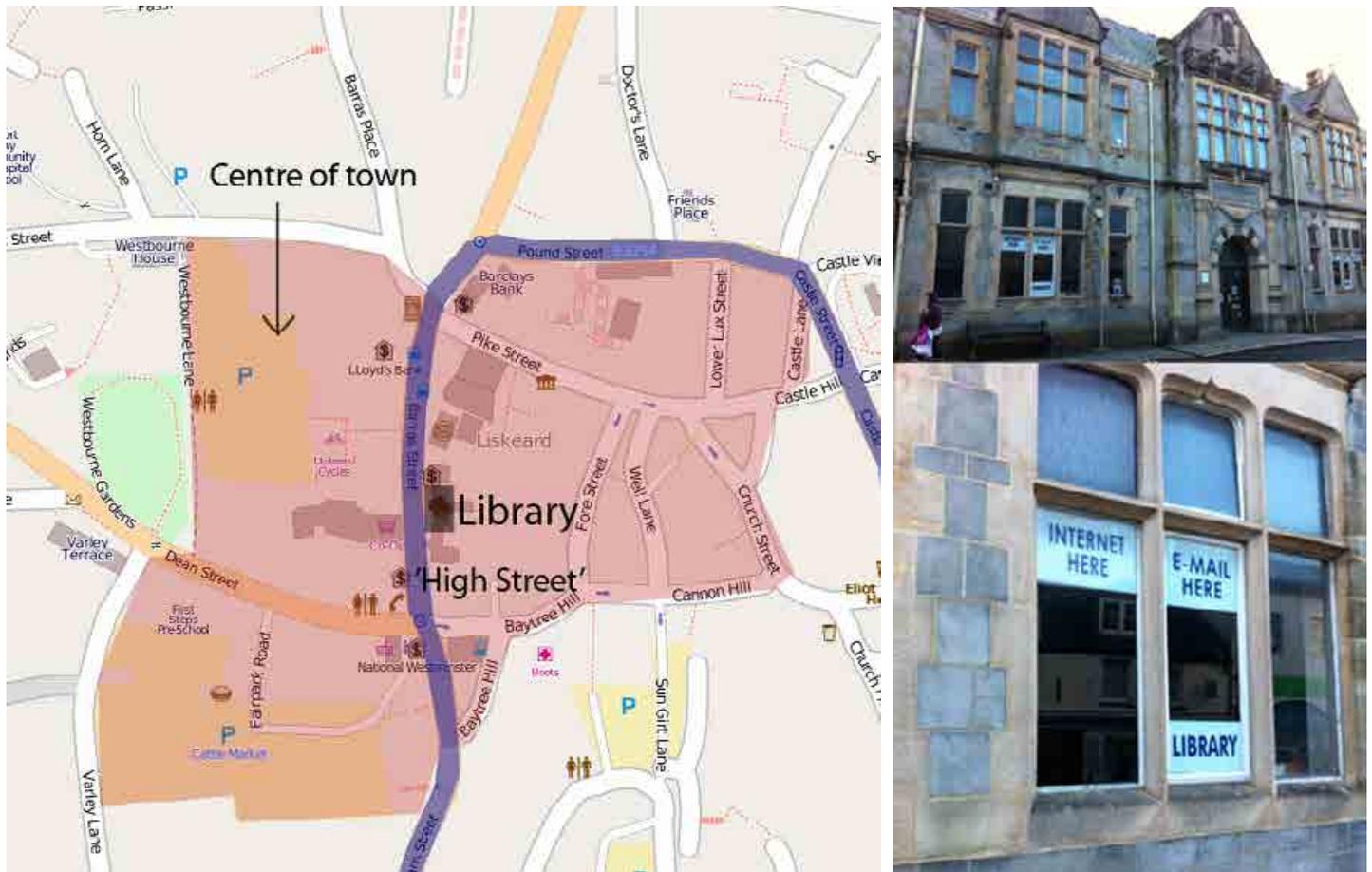
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Figure 2. Map of Liskeard's location in the county of Cornwall, UK

Liskeard is a medium-sized town that acts as a local centre for rural surrounding areas (see Figure 2). Liskeard town has a population of about 9,000 people spread across two town neighbourhood areas, North and South. The town centre neighbourhood has an IMD (Index of Multiple Deprivation) rating of 6230 (out of 32,000), putting it in the bottom twenty per cent of the most deprived areas in UK. There are a number of public and semi-public spaces in the town centre which provide internet access to the public. These include the central public library, a community centre (Liskarett Community Centre) and the church community centre (St Martins). In this regional town, there are no café's or other social spaces that offer WiFi.

#### 4.1 Method

The study partnered with the charity: Citizen's Online that runs training for people going online in order to tackle digital exclusion. This involved eight-week taught courses for small groups of local people enabling them to gain basic computer skills and enable them to access the internet. In Liskeard a series of courses were run in autumn 2012 and spring 2013 at the central Library (see Figure. 3)



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Figure 3. Map of Liskeard showing location of library at the centre of the town (© OpenStreetMap contributors). Inset - streetfront window of Liskeard library with signs advertising internet access and free WiFi. (photo: Katharine Willis)



#### 4.2 Participants

Twenty-eight people were shadowed for the duration of the course and were interviewed for approximately twenty minutes each. Participants were all local people, typically over fifty years old, who had had limited or no previous experience of the internet (Figure 4). Most did not own a computer, and some had never used a computer or the internet before. These participants were either retired or out of work, and thus did not typically travel to work. These people fit within the very bottom end of the 'basic' level of digital engagement (DCMS 2008).

Figure 4. Participants in Wednesday morning class at Liskeard library (photo: Katharine Willis)

## 5 Linking Public Spaces and Social Networks

### 5.1 Social Inclusion

At the introductory session the subject of what they knew was discussed a typical answers was: "I don't even know what Google is" or "I just want to know how to get out of trouble. I'm scared it (the computer) will blow up on me". The main reason for going online was for almost all the participants motivated by the need to simply 'gain general computer skills'. But contributing issues where pressure from family, health issues (resulting in lack of mobility), and the need to keep in contact with family and friends. For example one participant commented: "I'm getting fed up with all the family saying "When are you going to go online?"" But generally most participants reported that they somehow felt 'excluded' or left out by their lack of ability to access the internet. For example one participant explained that her reason for wanting to access the internet was "because I felt I wasn't getting connected with everything that's going on" (Mary) whilst another "you feel connected if you're on the computer. It's the modern times - on the television everything always links to something online so you feel that everyone's online and you're not" (Jean).

There were a number of participants on the course who were literally quite socially isolated. They lived alone and had no close family living locally to help them gain basic internet skills. However there were also some participants who had close family and friends either living with them or close by, but who found it difficult to get the support they needed. A number of participants talked about the problems of always 'relying' on younger members of the family, and even that they wanted to avoid arguments with their partners around computer skills. A typical answer was I just want to be able to "surf the net without bothering junior family members" (Bridget). This suggested that for a person to maintain a sense of connection in their local community they wanted to do this on their own terms, and still be an individual in their own right, without depending on others. Their sense of being included relied on them being valued on their own terms and not as a 'less-able' person. Once they had gained the basic skills they felt more able to participate in a range of social activities.

For other participants they found that the weak ties of local social networks that they associated with became weakened further by the fact that key socialising activities were increasingly conducted through email or social networking. One participant described how she was motivated to go online since the local Badminton Club, of which she had been a member for a number of years, had started to organise activities via email. As a consequence she explained that "I used to have to wait for a phone call, but now I log on every day to not miss anything from the secretary of the club" (Linda). Interestingly it was at this point that the internet access was seen as a remedy to the problem of social isolation. Going online corresponded with many of the participants feeling less socially excluded in their neighbourhood. If a neighbourhood is defined by close social proximity, then, for the most 'digitally excluded' groups, the social contact associated with gaining internet skills resulted in a re-localising of community connections.

## 5.2 Sense of Place

Most of the participants had lived in either the same house in the neighbourhood or the local area for over twenty years, some of them over forty, and could therefore be considered as locals (though they did not necessarily describe themselves in this way). When asked, participants described their perception of their neighbourhood as a fixed and stable place that had geographic qualities (usually centred around their own home), but often characterised by social connections. Many described how, despite them not moving, they were aware of how the neighbourhood had changed. For example, one participant talked about how "we moved here in 1968, and one time we used to know everyone, but the neighbours have changed since we first moved and now we are the old stalwarts" (Tessa) whilst another commented "we've lived here for forty years, but we don't speak to our neighbours very much. It's not that close knit. People come and go all the time, the houses on both sides have changed hands several times" (Thomas). This change in the nature of neighbourliness might be linked to broader societal issues around mobility and society. For instance in UK, 60% of the population in 1950's believed that other people could generally 'be trusted'. In the early 1980s the figure stood at 44%, and in twenty first century this had fallen to 29% (Halpern et al. 2002). Many of the participants in the study had a strong sense of association with the place, but the length of time they had lived there actually made them more aware of the transience of the neighbourhood as a social space, and correspondingly they felt less connected. This was compounded for some by isolating factors, such as serious health issues or life-changing situations such as the death of a partner. The sense of the vulnerability of either the neighbourhood, or their role within the neighbourhood, to social change caused their sense of belonging to come into question.

As a context to this, the actual location of the course in the central library was linked strongly with places that participants trusted and where they went to 'for information'. In fact for many the library was seen as a form of internet; Margaret described how "I know the library. I haven't got a computer at home and if I need to know something it helps. I know all the staff. I asked about getting some information and the staff helped me." According to Wikipedia a library is a 'place that provides a collection of information resources made accessible to a defined community'. In the regional town context of Liskeard it is the main public location where people can freely access information, and consequently it plays a distinctive role in the life of the neighbourhood. They are also the most recognised public space where a local person can access the internet for free. Beyond the more private space of the home, access to public places such as libraries make a contribution 'people's attachment to their locality and opportunities for mixing with others' (Dines and Cattell et al. 2006: ix). Public places provide everyday opportunities for social interaction and social inclusion, and can facilitate the development of community ties. Doering claims that if small-scale activities, 'which lead to a feeling of belonging and an affective connection with place- or non-place-based social groups' (Doering 2008: 8) can be enhanced by digital technologies this can facilitate their uptake and prohibit a deepening of the digital divide. In the context of a study of the link between social inclusion and neighbourhood place in the context of internet access, the library is an example of the type of place that provides the conditions for all these activities to take place. This can have a broader impact on social capital in the neighbourhood. It may be seen as a dying institution but our study has highlighted that a public library can contribute to remediating life at a neighbourhood scale in a regional setting.

## 6 Summary

In this paper we introduced the concept of remediation to describe the effects of ICT's on a community structure such as a neighbourhood. The introduction of a new broadband infrastructure creates subtle remediations of neighbourhood places and connections. We introduced a framework exploring the link between sense of place and social inclusion as a way of trying to understand the changes occurring due to the introduction of broadband internet access in a regional neighbourhood. In our case study of a regional town in South West UK we showed that people's degree of inclusion within the neighbourhood was actually undermined by the increasing use of media within their social network. As aspects of communication became mediated through social media they struggled to maintain their social status and only through going online or gaining digital skills did they reinstate their role in a local group. This shows how media in this case did in fact de-localise community activities by taking them into online networks and that in order to remediate the link between social networks and local places the participants had to gain new media skills. But it also reminds us that not only do we need to recognize that neighbourhoods are transient and shifting settings, but also that we need to de-romanticize ideas of locality and tight knit social spaces as being the reality of neighbourhood life. In the study key public place such as the central library became spaces of remediation in that they allowed for the 'glue' (Martin 2008) to reconnect with some aspects of community life. If, as Wellman claims, 'most people operate in multiple, thinly connected, partial communities as they deal with networks of kin, neighbours, friends, workmates and organisational ties' (Wellman 2001: 227) then the question this study poses is how can we create the conditions for this process of remediation of neighbourhood ties at a regional and rural scale? At a regional level there is a need to understand in much more detail the links between online spaces and offline spaces and how the point at which they overlap becomes a site of remediation.

## 7 Acknowledgements

We would like to thank Jay Chapman at Citizens Online, Peter Finlay at Cornwall Libraries and all the participants in the Get Online computer courses in Liskeard for their assistance in the case study. The research presented in this paper is part-funded by the European Regional Development Fund bringing greater connectivity to Cornwall and the Isles of Scilly (Superfast Cornwall).

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## FEEDING THE MEDIA CITY

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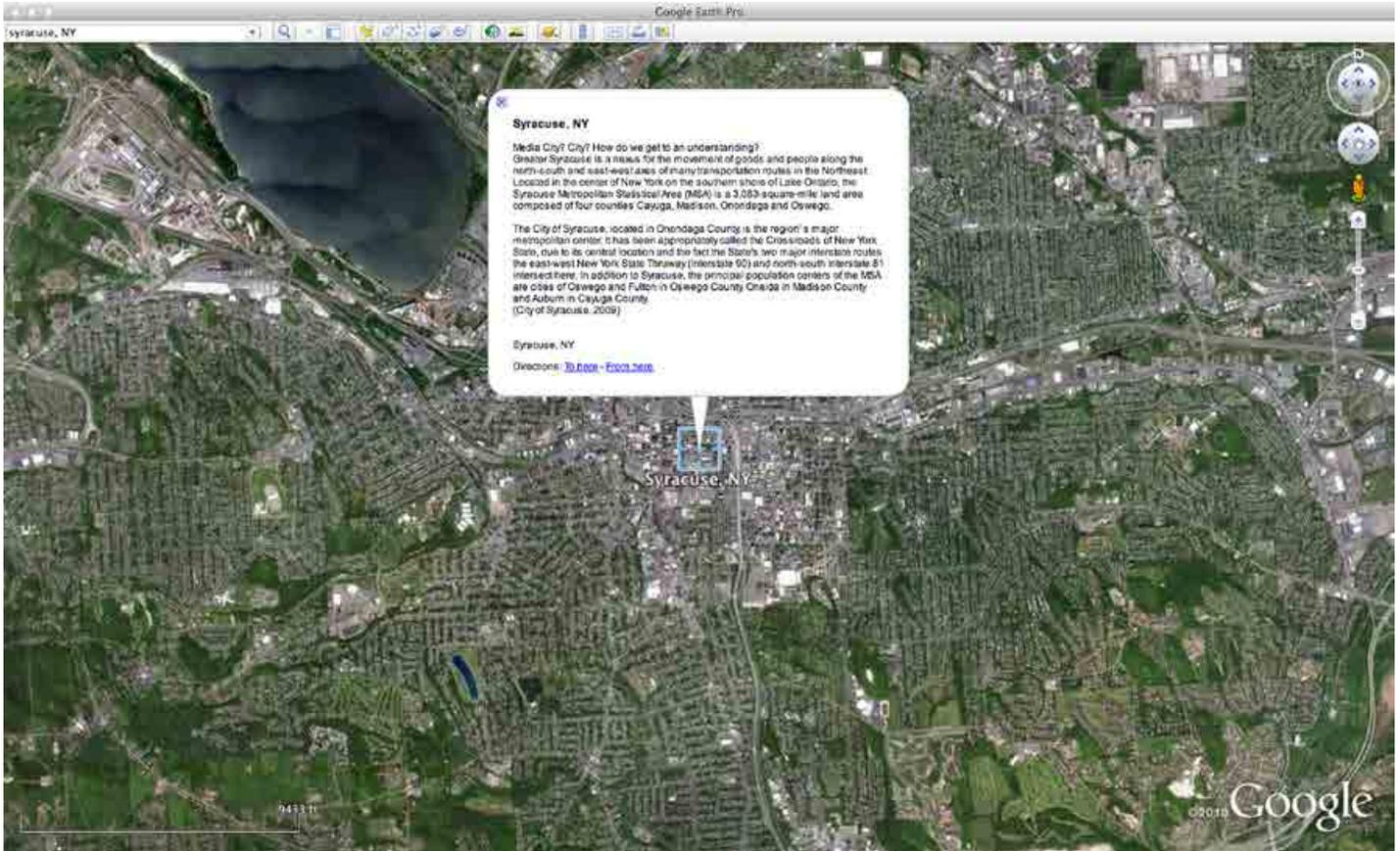
### **CO-PARTNERS, THINKLAB AND KBL.STUDIO**

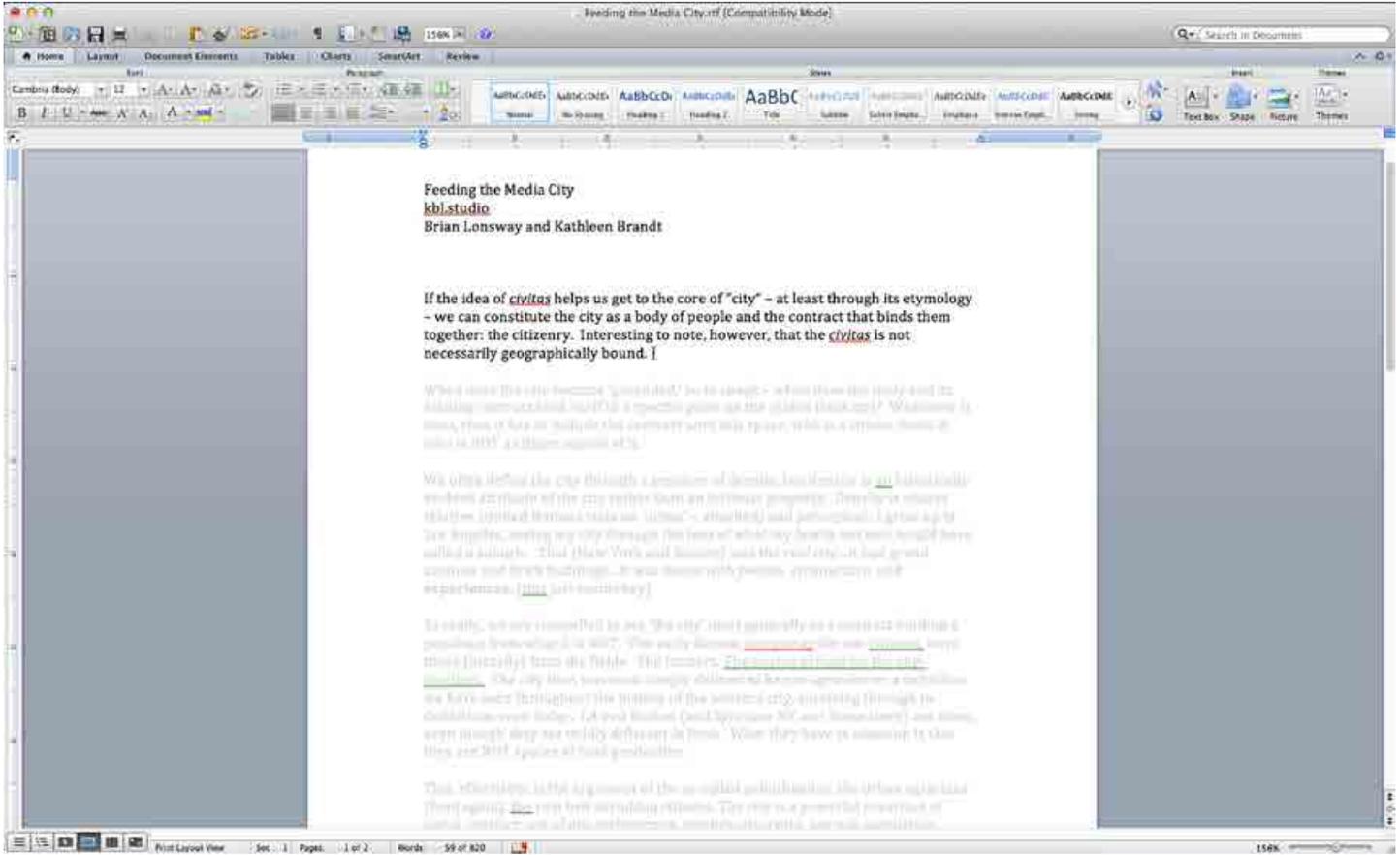
#### **Abstract**

We explore the media city through a narrative that frames our own personal urban experience through and with it. Flâneurs of sorts, we meander through the media city, sometimes in our backyard, sometimes on our mobile devices, and sometimes on our mobile devices in our backyard examining the backyard itself through an informational lens. We live in a so-called shrinking rust-belt city — Syracuse New York — and our experience of this city is quite different than that which was imagined — or addressed — through its height-of-industrial-society build-out. Without the informational infrastructure of the media city, as flâneurs we lack appropriate urban distractions in the material body of the “city” that is defined through legislation and historical perception. We turn to the media city for our own urban livelihood, and present our flânerie itself here as a critical musing on the conference theme.

While we offer provocations toward a definition of a media city and an argument for a critical thinking of the media city in city planning and governance today, what we offer here really is a stub, Wikipedia-style. Defined as “an article deemed too short to provide encyclopedic coverage of a subject,” our narrative stub is folded into other fragments of narrative already in the media city simply to “contain enough information for other editors [that is, media citizens] to expand upon it.” (Wikipedia, 2013a)

The screenshot shows a web browser window with the address bar displaying 'en.wikipedia.org/wiki/User:Kbl.studio/sandbox'. The page title is 'Feeding the Media City'. The left sidebar contains the Wikipedia logo and a list of navigation links including 'Main page', 'Contents', 'Featured content', 'Current events', 'Random article', 'Donate to Wikipedia', 'Wikimedia Shop', 'Interaction', 'Help', 'About Wikipedia', 'Community portal', 'Recent changes', 'Contact Wikipedia', 'Toolbox', and 'Print/export'. The main content area features a search bar at the top right with the text 'Read Edit View history' and a search input field. Below the title, there is a sub-header 'From Wikipedia, the free encyclopedia'. The 'Abstract' section begins with 'We explore the media city through a narrative that frames our own personal urban experience through and with it. Flâneurs of sorts, we meander through the media city, sometimes in our backyard, sometimes on our mobile devices, and sometimes on our mobile devices in our backyard examining the backyard itself through an informational lens. We live in a so-called shrinking rust-belt city – Syracuse New York – and our experience of this city is quite different than that which was imagined – or addressed – through its height-of-industrial-society build-out. Without the informational infrastructure of the media city, as flâneurs we lack appropriate urban distractions in the material body of the "city" that is defined through legislation and historical perception. We turn to the media city for our own urban livelihood, and present our flânerie itself here as a critical musing on the conference theme.' A second paragraph follows: 'While we offer provocations toward a definition of a media city and an argument for a critical thinking of the media city in city planning and governance today, what we offer here really is a stub, Wikipedia-style. Defined as "an article deemed too short to provide encyclopedic coverage of a subject," our narrative stub is folded into other fragments of narrative already in the media city simply to "contain enough information for other editors [that is, media citizens] to expand upon it." <http://en.wikipedia.org/wiki/Wikipedia:Stub>' Below this is a note: 'This article about the media city is a stub. You can help Wikipedia by expanding it.' At the bottom of the page, there is a footer with the text 'This page was last modified on 8 April 2013 at 14:09.' and a Creative Commons Attribution-ShareAlike License notice. Logos for Wikimedia and the University of Wisconsin are visible in the bottom right corner.





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**Pronunciation:** /ˈsɪtɪ/

**Forms:** ME-15 *cyte, cite*, (ME *scite*), ME *cty*, ME *cytee*, *site*, *syte*, ME-15 *citee*, *cete*, ME ... (Show More)

**Etymology:** Middle English *cite*, < Old French *citē*, earlier *cité*, corresponding to Provençal ... (Show More)

The name *citatus* was applied by the Romans to each of the independent states or tribes of Gaul; in later times it adhered to the chief town of each of these states, which usually became afterwards the seat of civil government and of episcopal authority. Though there were civitates in Britain also in Roman times, the word was not adopted by the Angles and Saxons, who applied the name *burh* to all towns alike. In later times *citatus* may be found as a Latin equivalent of *burh*, and, in Domesday, it is frequently applied to the larger and more important *byrly*, *burges*, or boroughs, which were the centres of districts, and had in some cases municipal autonomy, and thus corresponded in character to the *ciuitas* of France. As an English word, *city* is found early in the 13th c., applied, both to foreign, and particularly ancient cities, where it is probably due to translation from Latin or French, and also to important English boroughs, such as London and Lincoln. Under the Norman kings, the episcopal sees, which were formerly often established in villages, began to be removed to the chief borough or 'city' of the diocese, as in France; and as the bishops thus went to the cities, there grew up a notion of identification between 'city' and 'cathedral town', which was confirmed and legally countenanced when, on the establishment of the new bishoprics by Henry VIII, the boroughs in which they were set up were created 'cities'. The same title has been conferred on all (or nearly all) the places to which new bishoprics have been assigned in the 16th c. Historians and legal antiquaries have, however, always pointed out that there is no necessary connexion of 'city' with 'cathedral town', and in recent times the style and rank of 'city' have begun to be conferred by royal authority on large and important boroughs which are not episcopal seats, Birmingham being the first so distinguished in England. (See Freeman in Macmillan's Map., May 1889.)

In Scotland, the style of *ciuitas* appears to have been introduced from England, after the association of the word with the episcopal seats. Here, it appears to have had no relation to the size, civil importance, or municipal standing of the place, but was freely applied in charters from the time of David I (11th c.) to every bishop's seat, even when a *castra hamlet*; it was only at much later dates that some of these *ciuitates* attained sufficient importance to be raised to the rank of burghs, while others remained villages. In later times, perh. not before the Reformation, *ciuitas* is found applied to Perth and Edinburgh, which were not episcopal seats, but ancient royal burghs, and seats of royalty. The vernacular form 'city' is found in the 15th c., applied to some of the burghs which were *ciuitates*, and it gradually came to be commonly used of certain of the larger of these, notably Edinburgh, Glasgow, Perth, and Aberdeen. In this sense, the royal burgh of Dundee was also created a 'city' by Royal Charter in 1884. Some of the other burghs which were formerly bishop's seats, or was shown *ciuitas* in their early charters, have in recent times claimed or assumed the style of 'city', though not generally so regarded.

The history of the word in Ireland is somewhat parallel. Probably all or most of the places having bishops have been styled on some occasion *ciuitas*; but some of these are mere hamlets, and the term 'city' is currently applied only to a few of those which are ancient and important boroughs. Thos's Directory applies it to Dublin, Cork, Londonderry, Limerick ('City of the Violated Treaty'), Kilkenny, and Waterford; also to Armagh and Cashel, but not to Tuam or Galway (though the latter is often called 'the City of the Tribes'). Belfast was, in 1888, created a 'city' by Royal Letters Patent.

In other lands now or formerly under British rule, 'city' is used sometimes more loosely, but often with more exact legal definition than in England. In North America it usually connotes municipal autonomy or organization of a more complete or higher kind than 'town'. See *id.*, in India it is applied similarly to the three Presidency capitals, and to all great towns of historic importance or note, as the seats of dynasties, etc., e.g. Benares, Delhi, Agra, Lucknow, Indore, Peshawar, etc.

The distinction is unknown to other Teutonic and (now) also to Romance languages: German *stadt*, French *ville*, Italian *città*, Spanish *ciudad*, etc., translate both town and city.

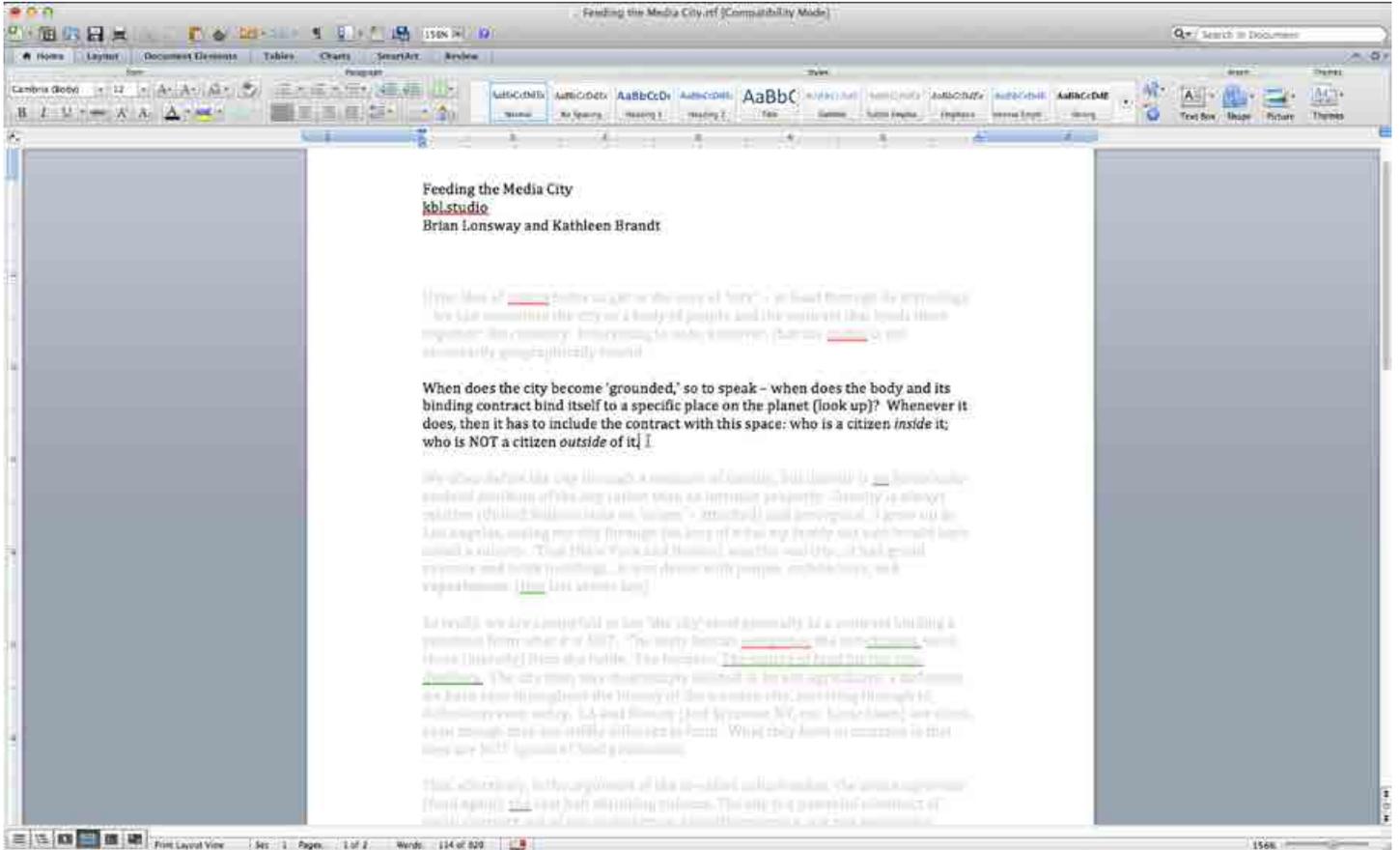
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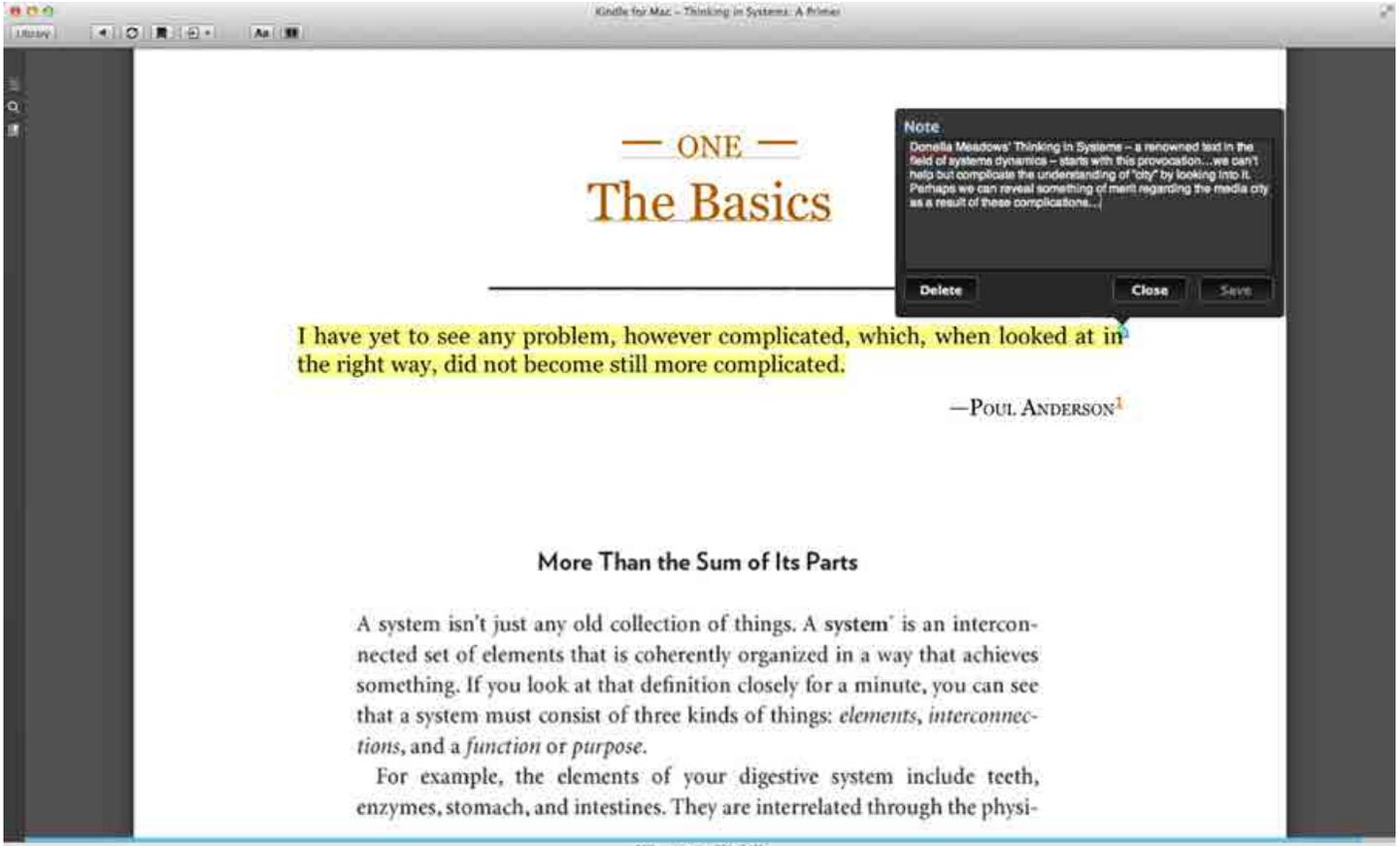
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Celestial City  
Cities of the Plain  
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City-article  
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city-bomb  
city-bound  
city-bounds  
city-boy  
city-break  
city-bread  
city-builder  
city-burner  
city-centre  
city-clem  
city-clerk  
city-clony  
City-commissioners  
city-community  
City Company  
city-court  
city-created  
city-cross  
city-dame

My entries (1)  
My searches (1)  
Jump to:

Entry	Date
citronella, n.	1888
citronelle, n.	1881
citroline, v.	1612
citron press, n.	1929
citrus, v.	1821
citronium, n.	1848
city, n.	1388
ciuitas, n.	1930
city, n.	1824
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city-escape   crysca...	1886
cityward, adv.	1400-50
citywards, adv.	1887
citywide, adv. and adv.	1903
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city, n.	
city, n. 1	1532
city, n. 2	1531



The image is a screenshot of the Wikipedia article for "City". The browser address bar shows "W en.wikipedia.org". The page title is "City - Wikipedia, the free encyclopedia". The article content includes a lead section with a yellow warning box stating: "This article's lead section may not adequately summarize key points of its contents. Please consider expanding the lead to provide an accessible overview of all important aspects of the article. (October 2012)". The main text defines a city as a "relatively large and permanent settlement" and discusses its historical and administrative distinctions from towns. It mentions that in the United Kingdom, a city is usually a settlement with a royal charter, and in Europe, a city was historically understood to mean an urban settlement with a cathedral. The text also notes that cities generally have complex systems for sanitation, utilities, land usage, housing, and transportation. To the right of the text is a historical map of Piraeus, the port of Athens, showing a grid plan. Below the map is a Renaissance painting titled "The Ideal City" by Fra Carnevale, depicting a city with a central square and a cathedral. A table of contents is visible on the left side of the article, listing sections such as "Origins", "Theories", "Causes of establishment", "Geography", "History", and "Distinction between cities and towns".



00% Location 395 of 403



City - Wikipedia, the free encyclopedia

Urban primacy [edit]

Theorist *Jane Jacobs* claims that city-formation preceded the birth of agriculture though offers no support for this theory. Jacobs does not lend her theory to any reasonably strict definition of a city, but her account suggestively or vaguely contrasts what could be thought of as primitive city-like activity to the activity occurring in neighboring hunter-gatherer settlements. To argue this view, she suggests a fictitious scenario where a valued natural resource leads to primitive economic activity – she takes obsidian as an example. The stock of obsidian is controlled and traded with neighboring hunting groups. Hunters who do not control the stock travel great distances to barter what they have, valuing obsidian because it “makes the sharpest tools to be had.”<sup>[6]</sup> This activity brings more people to the center as jobs are created and goods are being traded. Among the goods traded are seeds of all different sorts, stored in unprecedented combinations. In various ways, some accidental, the seeds are sown, and the variation in yields are observed more readily than they would be in the wild. The seeds that yield the most grain are noticed and trading them begins to occur within the city. Owing to this local dealing, the city dwellers find that their grain yields are the best, and for the first time make deliberate and conscious selection. The choices made now become purposeful, and they are made among various strains of already cultivated crosses, and their crosses, mutants and hybrids.<sup>[6]</sup>

Causes of establishment [edit]

Theorists have suggested many possible reasons for why people would have originally decided to come together to form dense populations. In his book *City Economics*, Brendan O’Flaherty asserts “Cities could persist – as they have for thousands of years – only if their advantages offset the disadvantages” (O’Flaherty 2005, p. 12). O’Flaherty illustrates two similar attracting advantages known as *increasing returns to scale* and *economies of scale*, which are concepts normally associated with firms. Their applications are seen in more basic economic systems as well. Increasing returns to scale occurs when “doubling all inputs more than doubles the output [and] an activity has economies of scale if doubling output less than doubles cost” (O’Flaherty 2005, pp. 572–573). To offer an example of these concepts, O’Flaherty makes use of “one of the oldest reasons why cities were built: military protection” (O’Flaherty 2005, p. 13). In this example, the inputs are anything that would be used for protection (e.g.: a wall) and the output is the area protected and everything of value contained in it. O’Flaherty then asks that we suppose that the area to be protected is square and each hectare inside it has the same value of protection. The advantage is expressed as: (O’Flaherty 2005, p. 13)

(1)  $O = s^2$ , where O is the output (area protected) and s stands for the length of a side. This equation shows that output is proportional to the square of the length of a side.

The inputs depend on the length of the perimeter:

(2)  $I = 4s$ , where I stands for the quantity of inputs. This equation shows that the perimeter is proportional to the length of a side.

So there are increasing returns to scale:

(3)  $O = I^2/16$ . This equation (solving for s in (1) and substituting in (2)) shows that with twice the inputs, you produce quadruple the output.

Also, economies of scale:

(4)  $I = 4O^{1/2}$ . This equation (solving for I in equation (3)) shows that the same output requires less input.

“Cities, then, economize on protection, and so protection against marauding barbarian armies is one reason why people have come together to live in cities ...” (O’Flaherty 2005, p. 13).

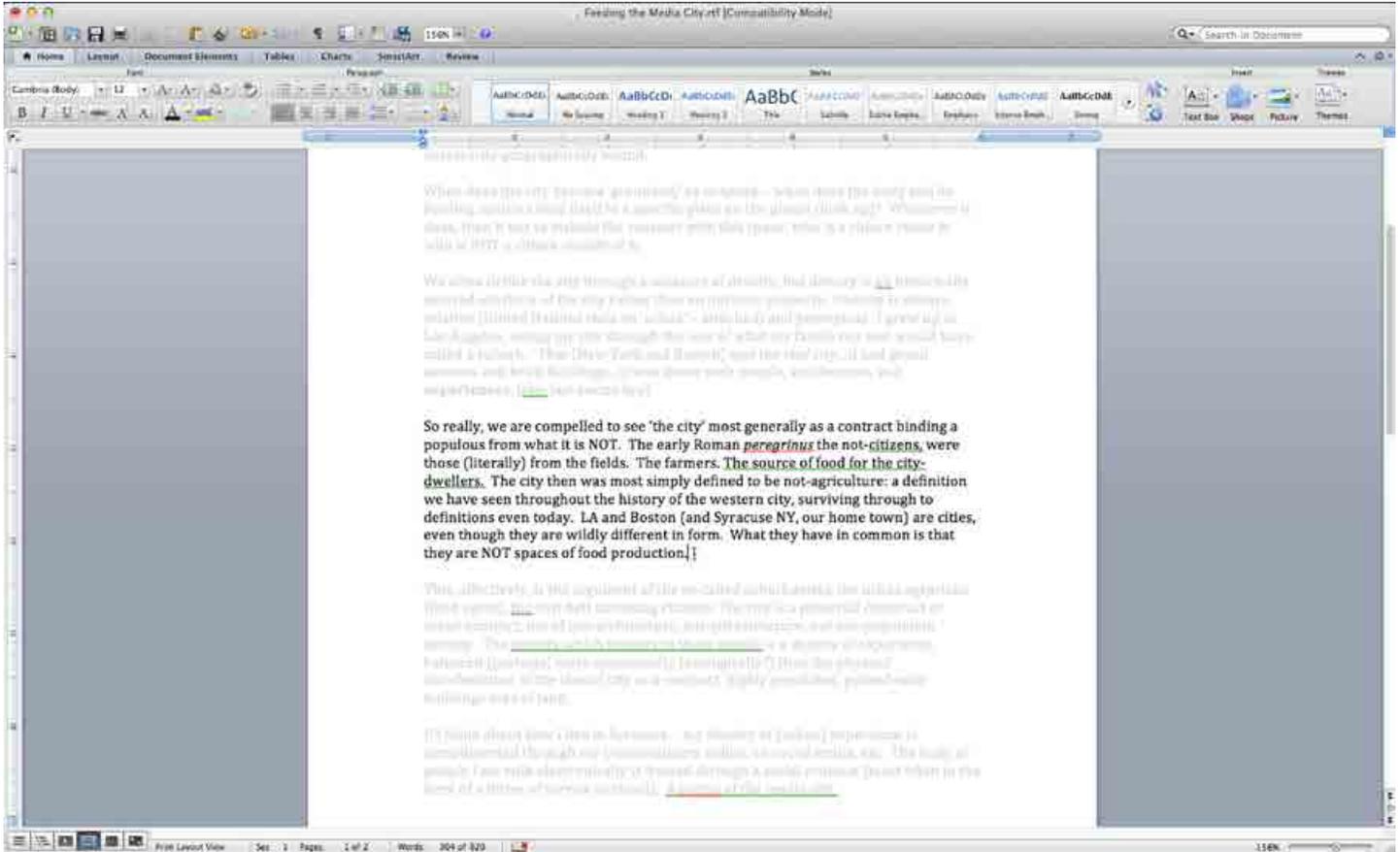
Similarly, “Are Cities Dying?”, a paper by Harvard economist Edward L. Glaeser, delves into similar reasons for city formation: reduced transport costs for goods, people, and ideas. Discussing the benefits of proximity, Glaeser claims that if you double a city size, workers have a ten-percent increase in earnings. Glaeser furthers his argument by stating that bigger cities do not pay more for equal productivity than in a smaller city, so it is reasonable to assume that workers become more productive if they move to a city twice the size as they initially worked in. However, the workers do not benefit much from the ten-percent wage increase, because it is recycled back into the higher cost of living in a bigger city. They do gain other benefits from living in cities, though.

Geography [edit]

City planning has seen many different schemes for how a city should look. The most commonly seen pattern is the grid, used for thousands of years in China, independently invented by Alexander the Great’s city-planner Dinocrates of Rhodes and favoured by the Romans, while almost a rule in parts of pre-Columbian America. Derry begun in 1613, was the first planned city in Ireland, with the walls being completed five years later. The central diamond within a walled city with four gates was thought to be a good design for defence. The grid pattern was widely copied in the colonies of British North America.

The Ancient Greeks often gave their colonies around the Mediterranean a grid plan. One of the best examples is the city of Priene. This city had different specialized districts, much as is seen in modern city planning today. Fifteen centuries earlier, the



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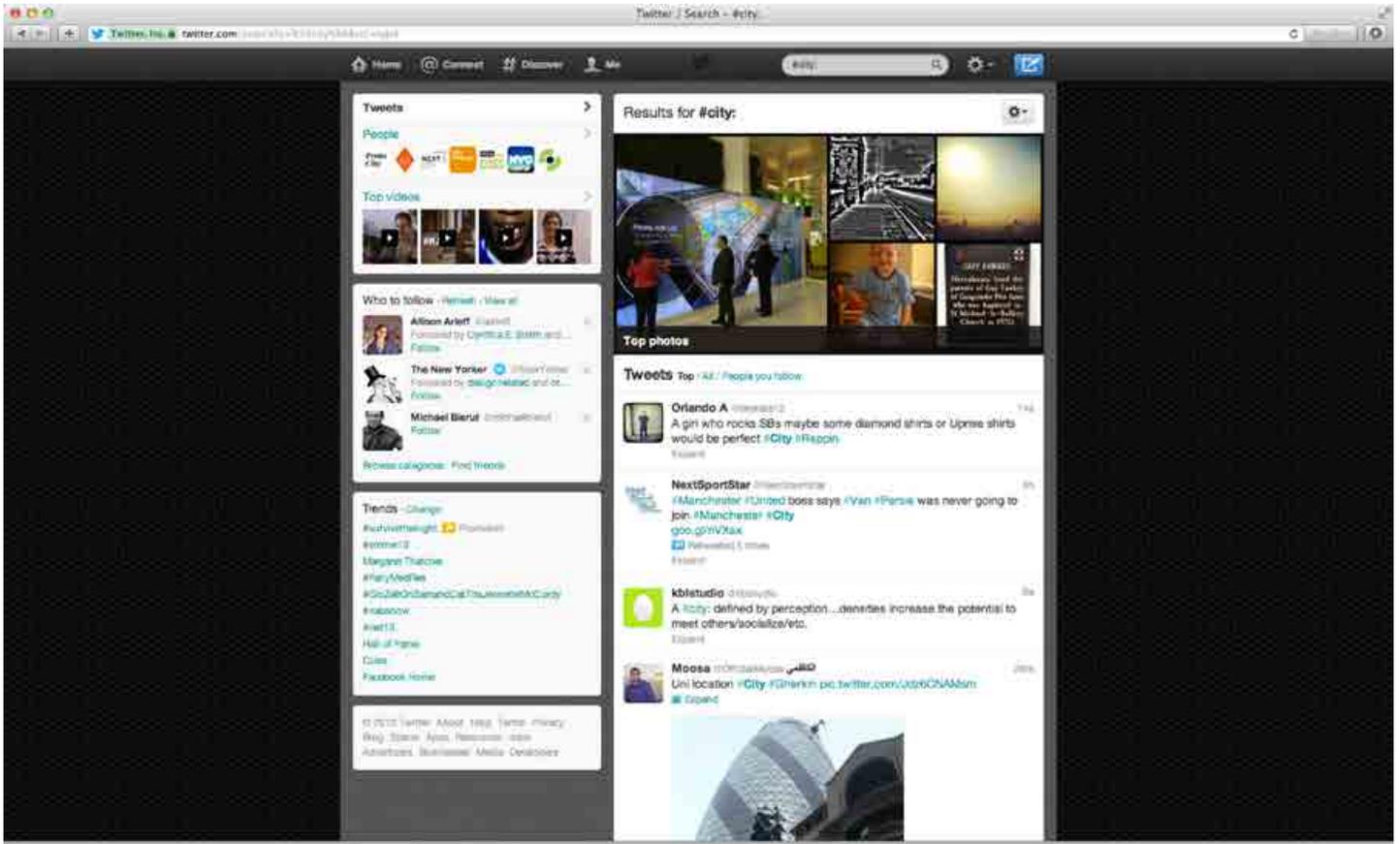
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**Posts:**

- Methodo** 4 weeks ago | Edit  
Density has existed in many US cities, and there has been, as a result, a perceived crisis of the city. What is in crisis, however, is a particular construct of "city," not the concept of city per se.
- Methodo** 4 weeks ago | Edit  
The crisis is a crisis of the city identified with its technical density, identified with its urbanism as a measure against the rural (the "real-city") and the suburban (the "fake-city").
- Methodo** 4 hours ago | Edit  
While Syracuse is most certainly a city by historical definition, there's more population density out in the real-city. What makes the city of Syracuse a city beyond its definition?
- Methodo** 4 hours ago | Edit  
Do we perceive it to be a city? Do we automatically add in its suburbs like where we live to its city-ness?
- Methodo** 4 hours ago | Edit  
The city (from civitas) is both a body of citizens and the contract which binds it. remains, it's just that the body has changed from the heyday of its industrial stage.
- Methodo** 4 hours ago | Edit  
There may be fewer bodies in the body, but they may still be seen to form such a city that is not reliant on densities in geography to succeed.
- Philip Ryan** 4 hours ago | Edit  
Welcome to the 'case, where BBQ (Brossau) rocks, grocery stores (Wegmans) are big, and basketball (SAC) is fantastic!

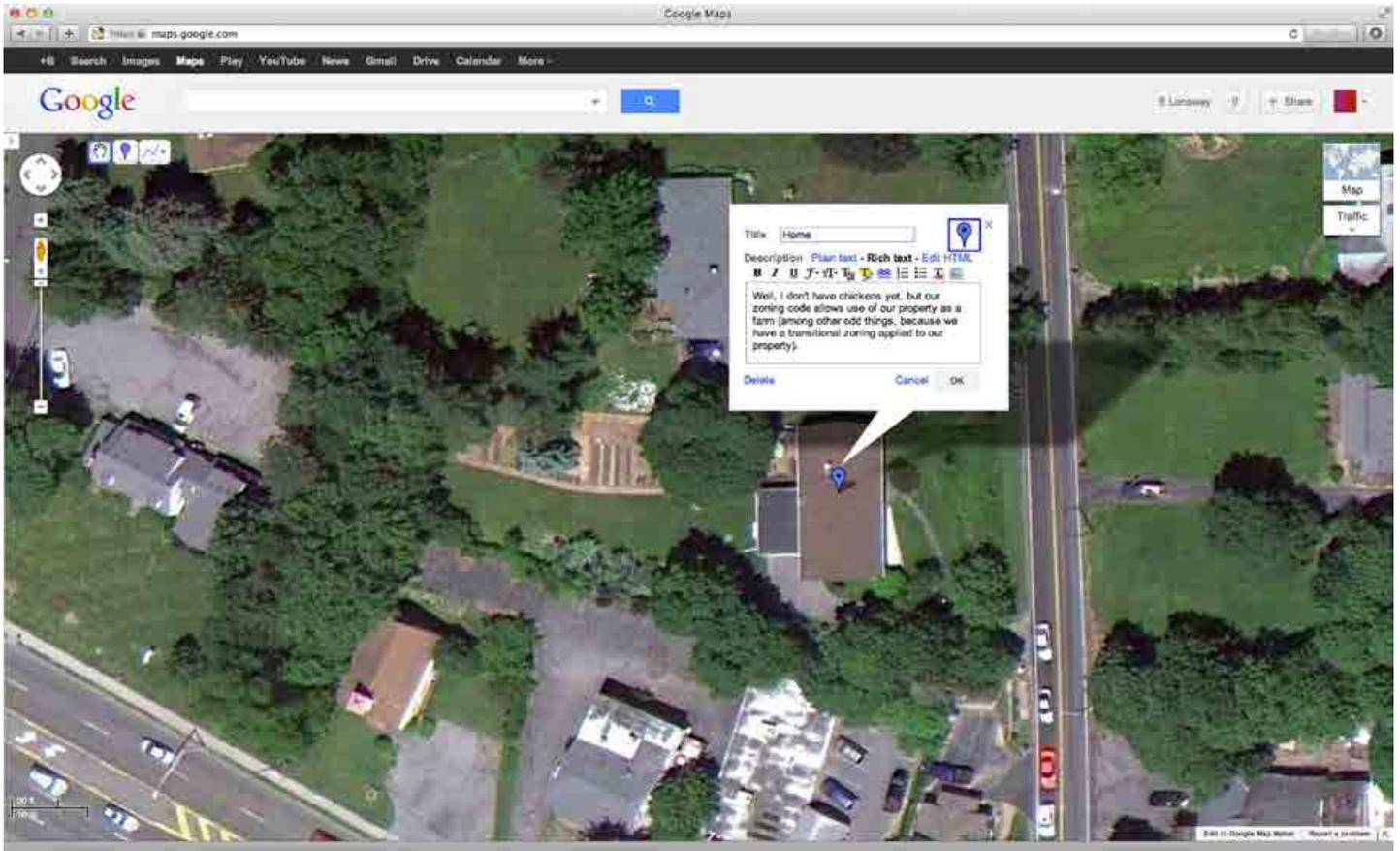
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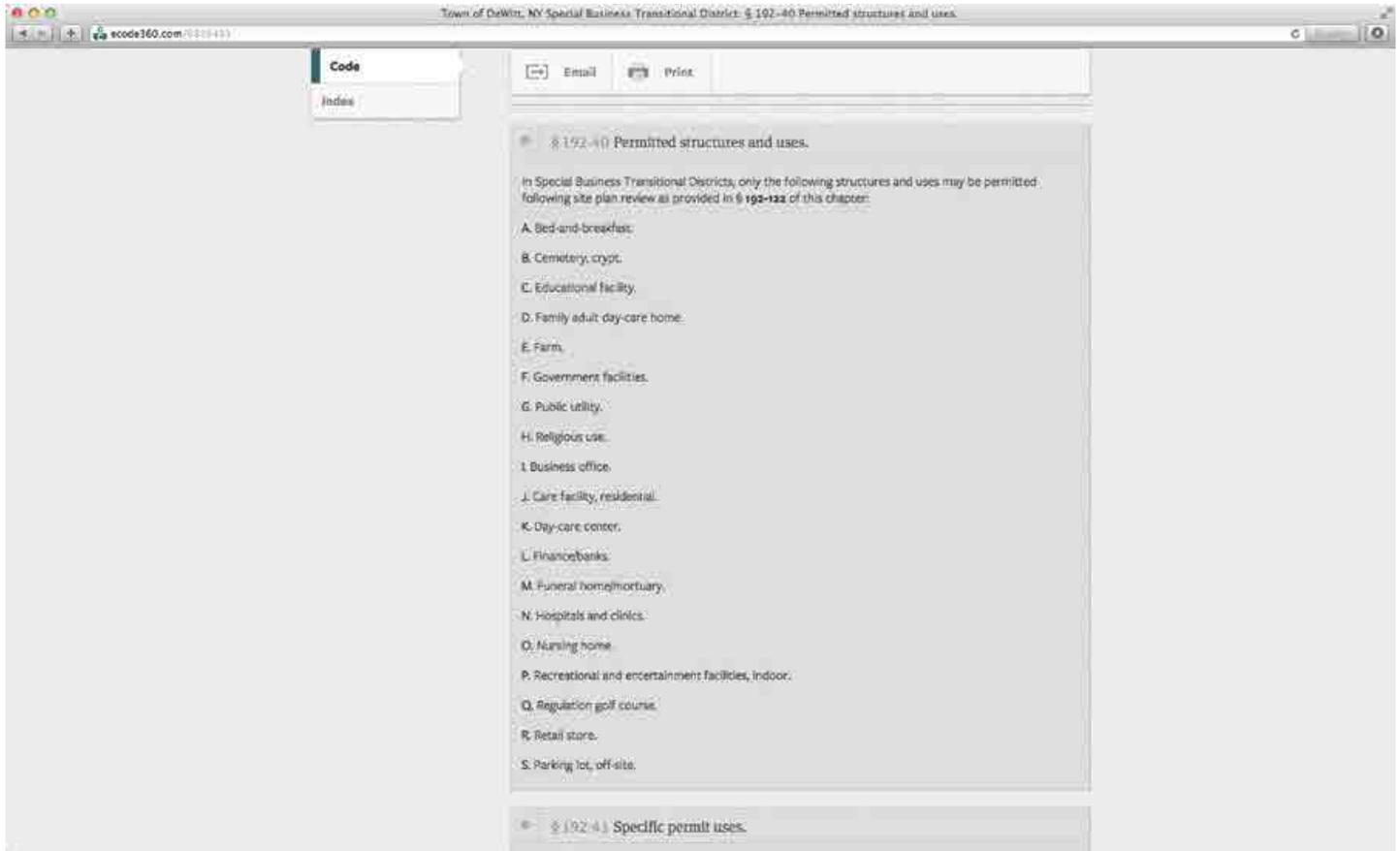












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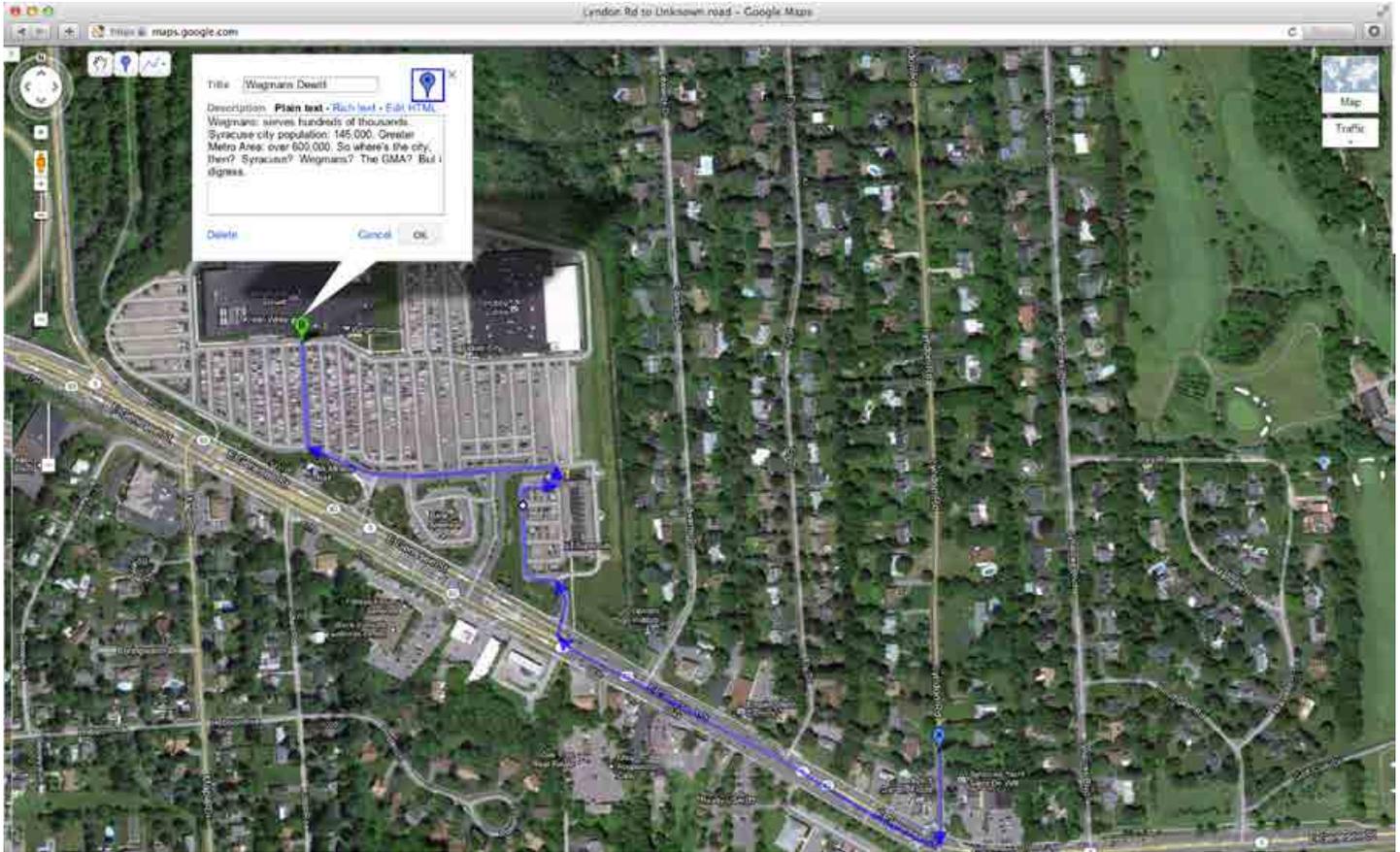
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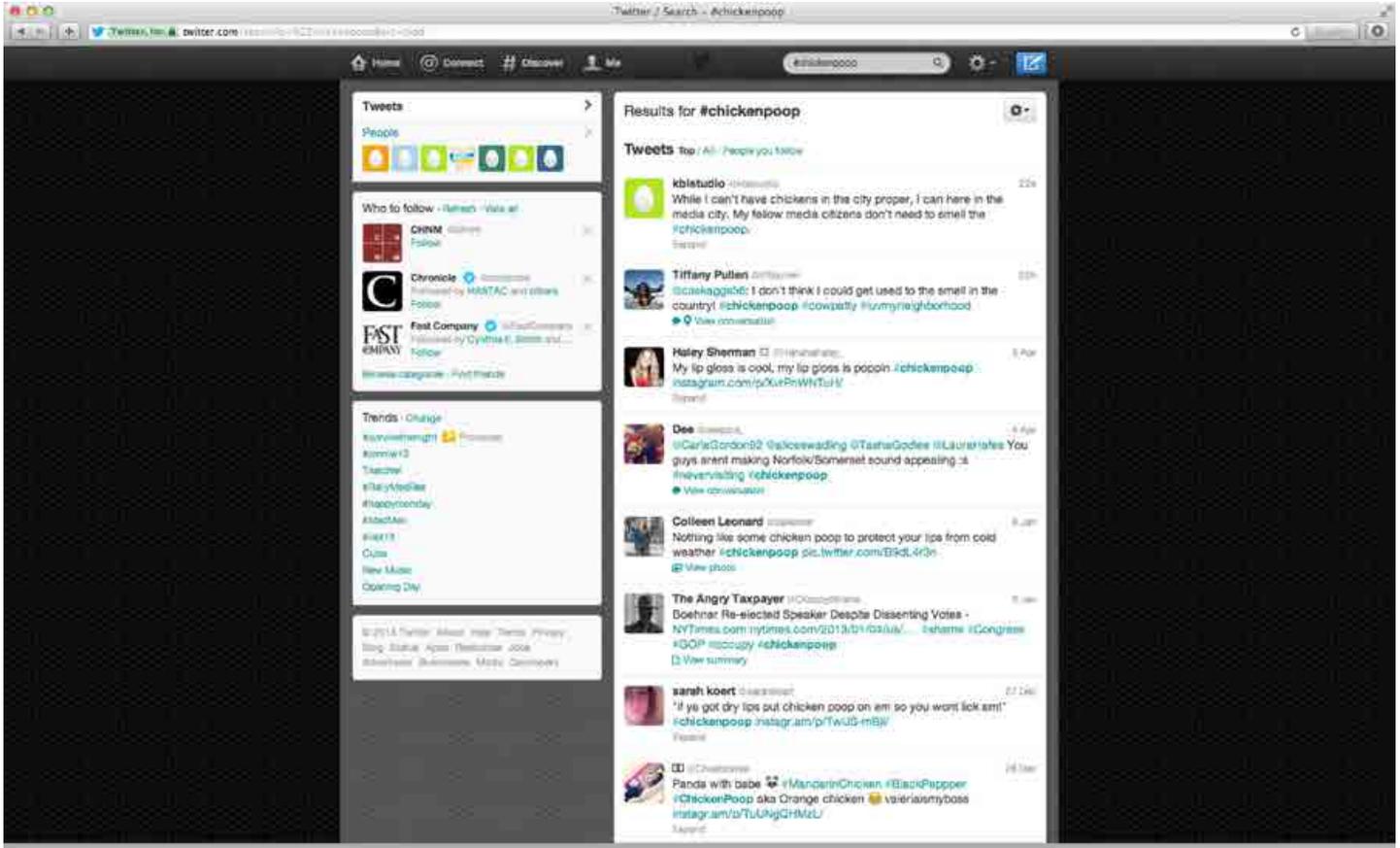
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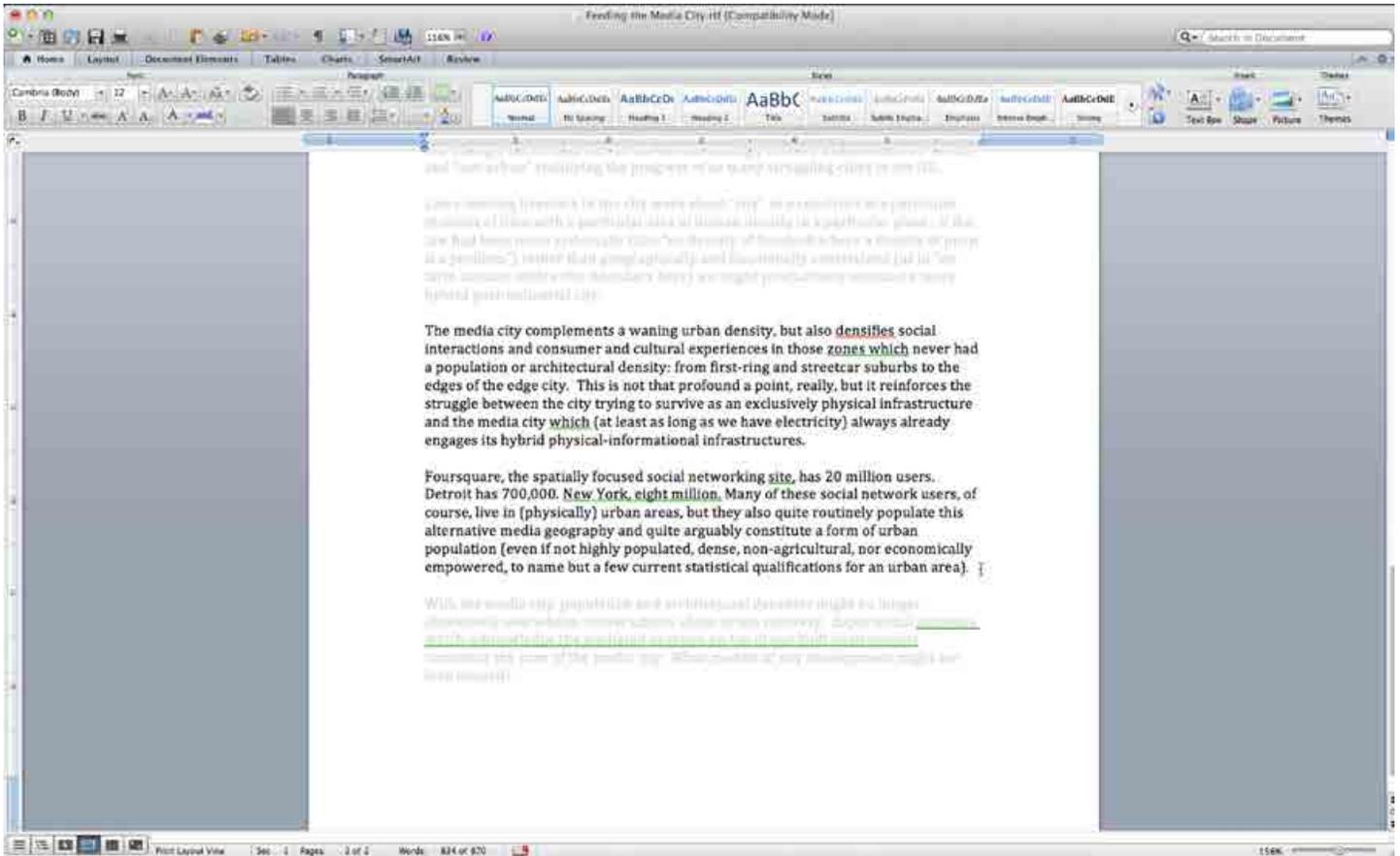
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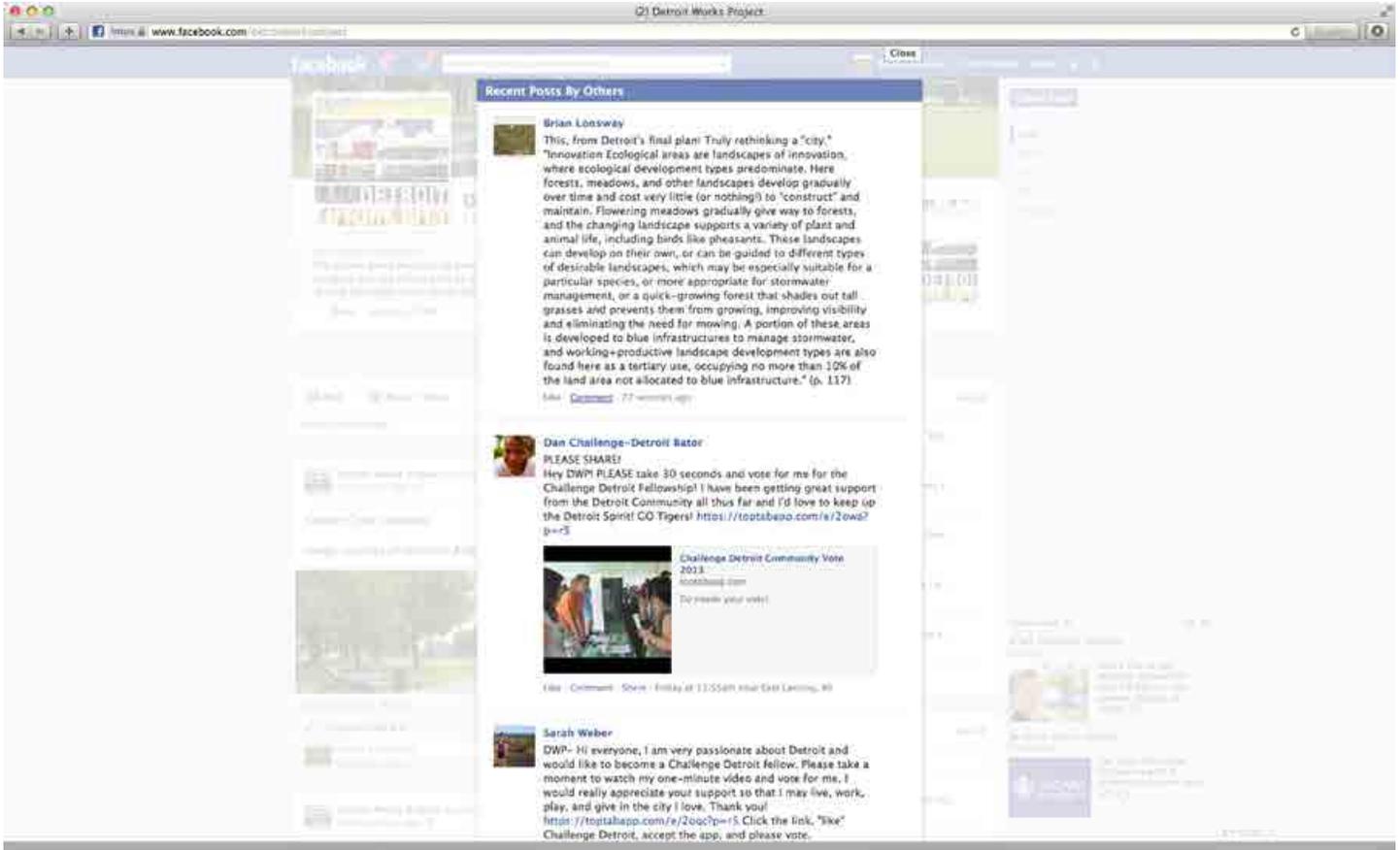
- Subtastic** (35 friends) · 10/11/11  
Oh, and I can walk to a 140,000 square foot Wegmans grocery store. With thousands of shoppers a day, that's a serious density of experiences.  
10 likes · 100 views
- Patrick B.** (March 25, 2011)  
Grab a bite to eat in the cafe before shopping, the subs are huge, delicious and a great deal. Plus - who can afford to shop when they're hungry?  
11 likes · 100 views
- Lisa G.** (April 15, 2011)  
Get your exercise by walking both one end of the store to the other when you forget something.  
11 likes · 100 views
- Christopher B.** (July 22, 2010)  
Best place in the area to purchase just about anything. You name it, they have it, more likely than not. Great customer service, high quality store brand products, bakery fresh foods to die for!  
11 likes · 100 views
- Sammy** (January 4, 2012)  
While there are many Wegmans stores in the area, this one is the big daddy of them all. Do some food shopping, eat some lunch in the great dining area... you may never leave!  
11 likes · 100 views
- Dave S.** (January 31, 2010)  
Discover why upstarters rave about Wegmans at one of their largest and most upscale locations. Everything from kitchenware to local produce to fresh prepared food, plus organic and skisolate portions!  
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## Wikipedia:Stub

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### Basic information

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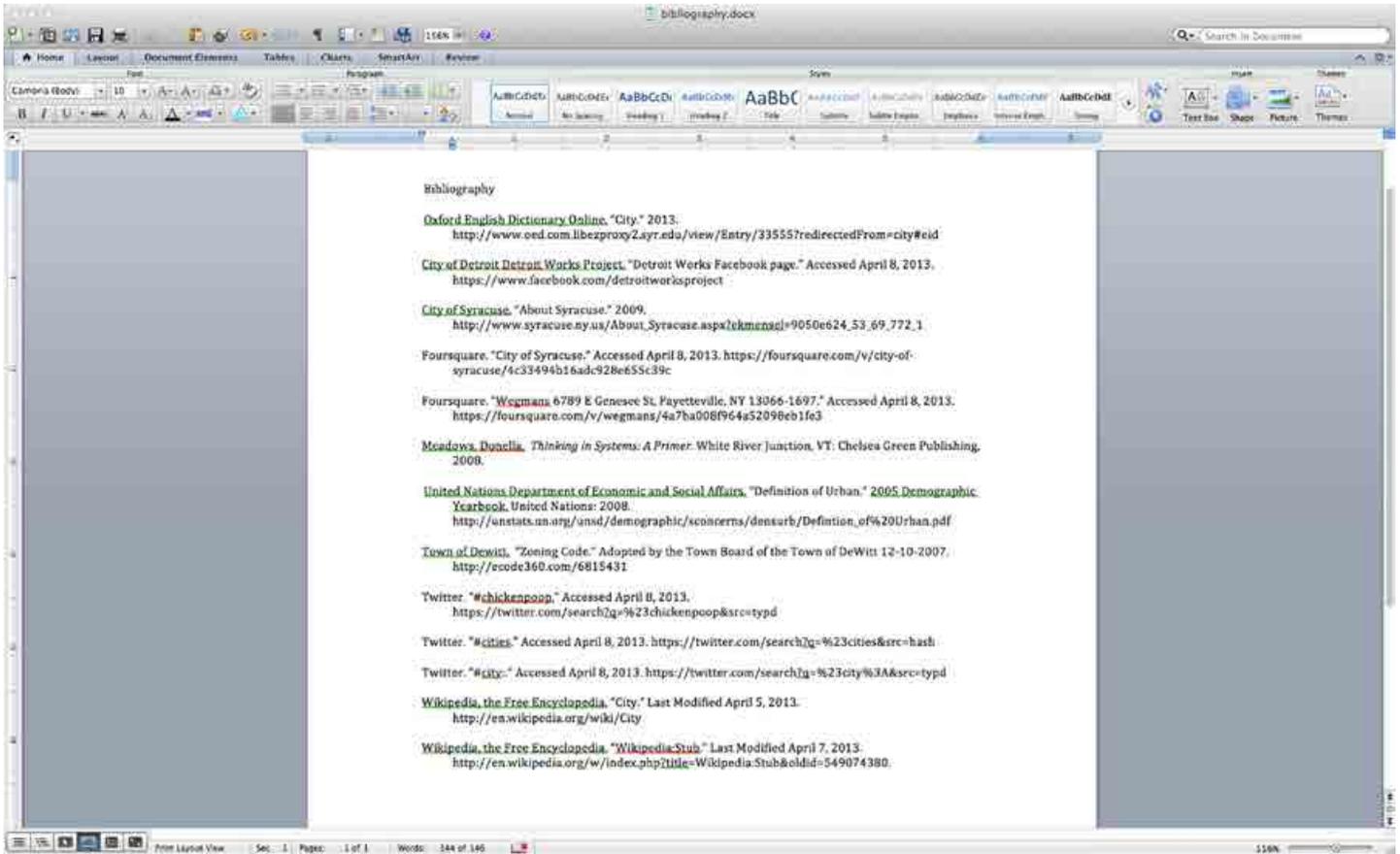
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## DEFINITION OF “URBAN”

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SOURCE: *Demographic Yearbook 2005, table 6*

### AFRICA

**Botswana:** Agglomeration of 5 000 or more inhabitants where 75 per cent of the economic activity is non-agricultural.

**Burundi:** Commune of Bujumbura.

**Comoros:** Administrative centres of prefectures and localities of 5 000 or more inhabitants.

**Egypt:** Governorates of Cairo, Alexandria, Port Said, Ismailia, Suez, frontier governorates and capitals of other governorates, as well as district capitals (Markaz).

**Equatorial Guinea:** District centres and localities with 300 dwellings and/or 1 500 inhabitants or more.

**Ethiopia:** Localities of 2 000 or more inhabitants.

**Liberia:** Localities of 2 000 or more inhabitants.

**Malawi:** All townships and town planning areas and all district centres.

**Mauritius:** Towns with proclaimed legal limits.

**Niger:** Capital city, capitals of the departments and districts

**Senegal:** Agglomerations of 10 000 or more inhabitants.

**South Africa:** Places with some form of local authority.

**Sudan:** Localities of administrative and/or commercial importance or with population of 5 000 or more inhabitants.

**Swaziland:** Localities proclaimed as urban.

**Tunisia:** Population living in communes.

**United Republic of Tanzania:** 16 gazetted townships.

**Zambia:** Localities of 5 000 or more inhabitants, the majority of whom all depend on non-agricultural activities.

### AMERICA, NORTH

**Canada:** Places of 1 000 or more inhabitants, having a population density of 400 or more per square kilometre.

**Costa Rica:** Administrative centres of cantons.

**Cuba:** Population living in a nucleus of 2 000 or more inhabitants.

**Dominican Republic:** Administrative centres of municipalities and municipal districts, some of which include suburban zones of rural character.

**El Salvador:** Administrative centres of municipalities.

**Greenland:** Localities of 200 or more inhabitants.

**Guatemala:** Municipality of Guatemala Department and officially recognized centres of other departments and municipalities.

**Haiti:** Administrative centres of communes.

**Honduras:** Localities of 2 000 or more inhabitants, having essentially urban characteristics.

**Mexico:** Localities of 2 500 or more inhabitants.

**Nicaragua:** Administrative centres of municipalities and localities of 1 000 or more inhabitants with streets and electric light.

**Panama:** Localities of 1 500 or more inhabitants having essentially urban characteristics. Beginning 1970, localities of 1 500 or more inhabitants with such urban characteristics as streets, water supply systems, sewerage systems and electric light.

**Puerto Rico:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more. Two types of urban areas: urbanized areas of 50 000 or more inhabitants and urban clusters of at least 2 500 and less than 50 000 inhabitants.

**United States:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more. Two types of urban areas: urbanized areas of 50 000 or more inhabitants and urban clusters of at least 2 500 and less than 50 000 inhabitants.

**U.S. Virgin Islands:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more. Two types of urban areas: urbanized areas of 50 000 or more inhabitants and urban clusters of at least 2 500 and less than 50 000 inhabitants. (As of Census 2000, no urbanized areas are identified in the U.S. Virgin Islands.)

### AMERICA, SOUTH

**Argentina:** Populated centres with 2 000 or more inhabitants.

**Bolivia:** Localities of 2 000 or more inhabitants.

**Brazil:** Urban and suburban zones of administrative centres of municipalities and districts.

**Chile:** Populated centres which have definite urban characteristics such as certain public and municipal services.

**Ecuador:** Capitals of provinces and cantons.

**Falkland Islands (Malvinas):** Town of Stanley.

**Paraguay:** Cities, towns and administrative centres of departments and districts.

**Peru:** Populated centres with 100 or more dwellings.

**Suriname:** Paramaribo town.

**Uruguay:** Cities.

**Venezuela, Bolivarian Republic:** Centres with a population of 1 000 or more inhabitants.

## ASIA

**Armenia:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Azerbaijan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Bahrain:** Communes or villages of 2 500 or more inhabitants.

**Cambodia:** Towns.

**China:** Cities only refer to the cities proper of those designated by the State Council. In the case of cities with district establishment, the city proper refers to the whole administrative area of the district if its population density is 1 500 people per kilometre or higher; or the seat of the district government and other areas of streets under the administration of the district if the population density is less than 1 500 people per kilometre. In the case of cities without district establishment, the city proper refers to the seat of the city government and other areas of streets under the administration of the city. For the city district with the population density below 1 500 people per kilometre and the city without district establishment, if the urban construction of the district or city government seat has extended to some part of the neighboring designated town(s) or township(s), the city proper does include the whole administrative area of the town(s) or township(s).

**Cyprus:** Urban areas are those defined by local town plans.

**Georgia:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**India:** Towns (places with municipal corporation, municipal area committee, town committee, notified area committee or cantonment board); also, all places having 5 000 or more inhabitants, a density of not less than 1 000 persons per square mile or 400 per square kilometre, pronounced urban characteristics and at least three fourths of the adult male population employed in pursuits other than agriculture.

**Indonesia:** Places with urban characteristics.

**Iran (Islamic Republic of):** Every district with a municipality.

**Israel:** All settlements of more than 2 000 inhabitants, except those where at least one third of households, participating in the civilian labour force, earn their living from agriculture.

**Japan:** City (shi) having 50 000 or more inhabitants with 60 per cent or more of the houses located in the main built-up areas and 60 per cent or more of the population (including their dependants) engaged in manufacturing, trade or other urban type of business. Alternatively, a shi having urban facilities and conditions as defined by the prefectural order is considered as urban.

**Kazakhstan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Korea, Republic of:** Population living in cities irrespective of size of population.

**Kyrgyzstan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Malaysia:** Gazetted areas with population of 10 000 and more.

**Maldives:** Malé, the capital.

**Mongolia:** Capital and district centres.

**Pakistan:** Places with municipal corporation, town committee or cantonment.

**Sri Lanka:** Urban sector comprises of all municipal and urban council areas.

**Syrian Arab Republic:** Cities, Mohafaza centres and Mantika centres, and communities with 20 000 or more inhabitants.

**Tajikistan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Thailand:** Municipal areas.

**Turkey:** Population of settlement places, 20 001 and over.

**Turkmenistan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Uzbekistan:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Viet Nam:** Urban areas include inside urban districts of cities, urban quarters and towns. All other local administrative units (communes) belong to rural areas.

## EUROPE

**Albania:** Towns and other industrial centres of more than 400 inhabitants.

**Austria:** Communes of more than 5 000 inhabitants.

**Belarus:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Bulgaria:** Towns, that is, localities legally established as urban.

**Czech Republic:** Localities with 2 000 or more inhabitants.

**Estonia:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Finland:** Urban communes, 1970: Localities.

**France:** Communes containing an agglomeration of more than 2 000 inhabitants living in contiguous houses or with not more than 200 metres between houses, also communes of which the major portion of the population is part of a multicommunal agglomeration of this nature.

**Greece:** Population of municipalities and communes in which the largest population centre has 10 000 or more inhabitants. Including also the population of the 18 urban agglomerations, as these were defined at the census of 1991, namely: Greater Athens, Thessaloniki, Patra, Iraklio, Volos, Chania, Irannina, Chalkida, Agrinio, Kalamata, Katerini, Kerkyra, Salamina, Chios, Egio, Rethymno, Ermoupolis, and Sparti.

**Hungary:** Budapest and all legally designated towns.

**Iceland:** Localities of 200 or more inhabitants.

**Ireland:** Cities and towns including suburbs of 1 500 or more inhabitants.

**Latvia:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Lithuania:** Urban population refers to persons who live in cities and towns, i.e., the population areas with closely built permanent dwellings and with the resident population of more than 3 000 of which 2/3 of employees work in industry, social infrastructure and business. In a number of towns the population may be less than 3 000 since these areas had already the status of "town" before the law was enforced (July 1994)

**Netherlands:** Urban: Municipalities with a population of 2 000 and more inhabitants. Semi-urban: Municipalities with a population of less than 2 000 but with not more than 20 per cent of their economically active male population engaged in agriculture, and specific residential municipalities of commuters.

**Norway:** Localities of 200 or more inhabitants.

**Poland:** Towns and settlements of urban type, e.g. workers' settlements, fishermen's settlements, health resorts.

**Portugal:** Agglomeration of 10 000 or more inhabitants.

**Republic of Moldova:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Romania:** Cities, municipalities and other towns.

**Russian Federation:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

**Slovakia:** 138 cities with 5 000 inhabitants or more.

**Spain:** Localities of 2 000 or more inhabitants.

**Switzerland:** Communes of 10 000 or more inhabitants, including suburbs.

**Ukraine:** Cities and urban-type localities, officially designated as such, usually according to the criteria of number of inhabitants and predominance of agricultural, or number of non-agricultural workers and their families.

## OCEANIA

**American Samoa:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more. Two types of urban areas: urbanized areas of 50 000 or more inhabitants and urban clusters of at least 2 500 and less than 50 000 inhabitants. (As of Census 2000, no urbanized areas are identified in American Samoa.)

**Guam:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more, referred to as "urban clusters".

**New Caledonia:** Nouméa and communes of Païta, Nouvel Dumbéa and Mont-Dore.

**New Zealand:** All cities, plus boroughs, town districts, townships and country towns with a population of 1 000 or more.

**Northern Mariana Islands:** Agglomerations of 2 500 or more inhabitants, generally having population densities of 1 000 persons per square mile or more. Two types of urban areas: urbanized areas of 50 000 or more inhabitants and urban clusters of at least 2 500 and less than 50 000 inhabitants.

**Vanuatu:** Luganville centre and Vila urban.

## MEDIA GEOGRAPHIES: CONFLICTING PROJECTS TOWARDS THE URBANIZATION OF THE JUNGLE

**AIDA MIRON**

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### **Abstract**

This text examines the exponential decimation of ecologies and its correlation to what philosopher Felix Guattari calls an "Integrated World Capitalism" of "mass media subjectivity," mass media consumption and production. It confronts the role of mass media in constructing an image of Latin America as an inexhaustible resource exploitable by capitalism in need of "development" to a growing landscape of social, ethnic and political movements, that use social media to place ecology and cultural survival at its focus. As Guattari states, the "nagging paradox" of the continuous development of new techno-scientific means to potentially resolve the dominant ecological issues.. are the same forces that erode ecology. There is a direct link between transnational infrastructures of power for public goods, commodities and resources, the neocolonial and liberal drive for "development" and "urbanization" of Latin America and the eruption of violence and ecological crisis onto its scene. The televised, twittered, facebooked and blogged instances of violence, whether in amazonian indigenous territories confronting dams, farming communities resisting genetically modified seeds or evictions, semi-urban towns protesting the presence of mining companies, shanty towns in jungle cities dealing with pollution or protected bio-reserves dealing with massive deforestation are directly linked to a capitalistic and globalizing project of "development" national policies of privatization, the militarization of extended jungle zones, and large scale infrastructures. Disguised as national and transnational projects for development, and using the rhetoric of eco-friendliness, security and sustainability, these projects exclude large rural populations and indigenous groups, displacing them and fragmenting their ecological subsistence to benefit capital national cities and urban centers in the north. As Guattari sees it, the "Integrated World Capitalism" has divided the world into northern and southern territories even within national borders marginalizing huge territories to feed its monstrous system of consumption while stifling different modes of freedom of expression. In a call similar to movements disseminated all over Latin America, his call for an "ecosophy," engages similar cultural and philosophical questions philosopher Eduardo Subirats addresses in his new critique, and Stefano Varese addresses in his anthropological and political work. Media geographies links distant natural and cultural geographies to urban landscapes, questioning issues of democratic participation, sustainability, growth, energy and the role of mass media in the erosion of distant and peripheral geographies. Observing different events in the media, and the dissemination of urgent political and environmental calls from various movements in the Americas it moves towards a combined ecology of nature, culture and subjectivity.

*"Post-Industrial capitalism, which I prefer to describe as Integrated World Capitalism (IWC), tends increasingly to decentre its sites of power, moving away from structures producing goods and services towards structures producing signs, syntax and - in particular, through the control which it exercises over the media, advertising, opinion polls, etc- subjectivity... At present, IWC is all of a piece: productive-economic-subjective" Guattari*

This text examines the exponential decimation of ecologies and its correlation to what philosopher Felix Guattari calls an "Integrated World Capitalism" of "mass media subjectivity," mass media consumption and production of goods. It confronts the role of mass media in constructing an image of Latin America as an inexhaustible resource exploitable by capitalism in need of "development," to a growing landscape of social, ethnic and political movements, that use social media to place ecology and cultural survival at its focus. As Guattari states, the "nagging paradox" of the continuous development of new techno-scientific means to potentially resolve the dominant ecological issues" are the same forces that erode ecology(Guattari, 22). There are direct links between transnational infrastructures for public goods, commodities and resources, the neocolonial and liberal drive for development and the eruption of violence and ecological crisis in Latin America (Fig 1).



*Fig 1, Fires and Deforestation on the Amazon Frontier, Rondonia, Brazil - Aug 2007. NASA Earth Observatory, by Jesse Allen and Robert Simmon.*

The televised, twittered, facebooked and blogged instances of violence, whether in amazonian indigenous territories confronting dams, farming communities resisting genetically modified seeds, semi-urban towns protesting the presence of mining companies, shanty towns in jungle cities dealing with pollution, or protected reserves undergoing massive deforestation, are linked to national policies of privatization, the militarization of extended jungle zones, and presence of multinationals. Disguised as national and transnational projects for development and using the rhetoric of eco-friendliness, security and sustainability, they exclude and displace large rural populations and indigenous groups while fragmenting their ecological subsistence to benefit capital national cities and urban centers in the north.

In one of first books and most important books to emerge from the Peruvian Amazon in the 80's, *Amazonia Hoy*, anthropologist and environmentalist Roger Rumrill explains that the "illusory paradise" of the televised inexhaustible resources of the rainforest confronts a stark reality of exploitation and decimation that has severe consequences to local social structures and its future (Fig 2).



*Fig 2, Logging manufacturing in Iquitos, Peru, image by Ana Miron*

He argues that the paradox in the area's value and degradation can be linked to a national system of exponential exports that has eroded ecosystems and threatened indigenous cultures, traditions and future. One of the world's richest regions in biodiversities is the country's poorest and most marginalized (Fig 3).



Fig 3, Belem "floating slum" Iquitos, Peru, by author.

Whether it be the rainforest in Peten, the Lacandon, Pucallpa or Amazons, the illusory el Dorado jungle- in the eyes of the multinationals, is open to appropriation, extraction and exploitation, along with its local inhabitants (Fig 4).



*Fig 4. Mato Grosso - Cotton planting and deforestation near the region of the Xingu Indigenous Park. Image by Pedro Biondi, Agenciabrasil.ebc*

Dating back to the conquest, and later to the presence of North American corporations such as the United Fruit Company, the image of Latin America as a land of unlimited resources, tropical fruits and “natives” for cheap labor has produced an exploitable image by the media and global economy. The “nagging paradox” of Latin America can be observed in regions richest in raw material and energy with country’s highest levels of poverty, malnutrition, illiteracy, and lack of basic utilities such as water and electricity. To central capitals and cities in the north, these virtual geographies of inexhaustible wealth power their own existence and subjectivity. South of the border, international free trade agreements and capital flows, transnational corporations, tourism, and the privatization of natural resources accelerate the rapid loss of culture and biodiversity.

Abuse of land and unconstitutional land concessions are eradicating cultural and social traditions at violent rates, as has recently been highlighted by social media networks in the Brazilian Belo Monte hydroelectric dam. The dam which will be the third largest in the world, will cost over \$18 billion, will displace thousands of peoples, threaten indigenous territories, and flood over 200 square miles of the Amazon. International groups have disseminated hundreds of images of violent confrontations with state police, occupation by indigenous groups, protests throughout mayor cities, maps and figures of threats to the area and unsustainability of project (Fig 5).



*Fig 5, Stop Belo Monte, occupation and protest by indigenous groups and locals. Image by International Rivers.*

In Brazil as in the rest of Latin America, these projects are part of larger development plans promoting trade, social development, and an economic model that benefits economic sectors in growing capitals. In a conference entitled Amazonia is Key for Global Economy, Rumrill explains how often paradoxically the victims become the victimizers, quoting the televised report on "savages that had assaulted oil developers in the jungle." Throughout Central and South America, various events in the social media, expose governments deploying military forces to protect foreign companies from locals. A story in the Times, relates a former Peruvian president's actions and insults towards a group of indigenous protesters against oil extraction in their territory, as he demanded that Peruvians defend the progress his government is making to modernize the country,

The European colonization of Latin America has evolved into world bank policies, North American interventions, and ultimately an economic structure that can be linked to colonial structures of power. Today's development projects are financed by the World Bank, the WTO, IADB, and the like. Land conflicts and privatization can be traced to colonial systems such as indentured labor and *encomiendas*. Philosopher Eduardo Subirats states that the: "discovery, conquest, colonization, acculturation of America is a complete and continuous process. At a time western expansion of an ideal medieval crusade [became] a human endeavor and modern scientific and geographical discovery; equally holy war and plunder and genocide without paragon in any modern territorial invasion" (Subirats, 1992, 59)." Subirats traces development projects to the continuation of the European project of expansion that moves towards a "massive destruction and an irreversible industrial development over the biosphere and consequent social genocides." His critique denounces "the ecological industrial destruction, the speculative degradation of democratic systems, the economic crisis which throws millions into the void, and a global expansion of racism, violence and war (Subirats, 2012 Crisis Global).

As Guattari sees it, the "Integrated World Capitalism" has divided the world into northern and southern territories even within national borders marginalizing huge territories to feed its monstrous system of consumption while stifling different modes of freedom of expression. He calls for "an ethico-political articulation [...] an ecosophy-between the three ecological registers (the environment, social relations and human subjectivity [as]the only true response to the ecological crisis [seen] on a global scale, provided that it brings about an authentic political, social and cultural revolution, reshaping the objectives of the production of both material and immaterial assets" (Guattari, 20). In a similar movement, the ideological battle with economists, agricultural economists and social planners anthropologist Stefano Varese had to partake in the early 70's in the Amazon, argued "against the prevalent notion that land and resources (nature/the world in all its cosmological complexity for the indigenous communities) could be treated exclusively as quantifiable and commoditized entities." Varese's call for a "moral ecology" and popular culture theory originated from action-research, which sought the recuperation of indigenous culture" (Varese 2007, 41-49).

Uruguayan writer Eduardo Galeano's *Open Veins of Latin America* traces the origins of today's financial structure to the underdevelopment and plunder of the region by global capitalism: "Latin America is the region of open veins. From the conquest until today, everything has been transmuted into European capital or later North American, and as such has built up and accumulated in distant centers of power: all the land, its fruits, its mineral rich depths, the people and their ability to work and consume, natural resources and human resources. The history of the land of Latin America has been said to be the history of the development of world capitalism... Our defeat was always implicit in the victory of others, our wealth has always generated our poverty by nourishing the prosperity of others" (Galeano, 2008, 16).



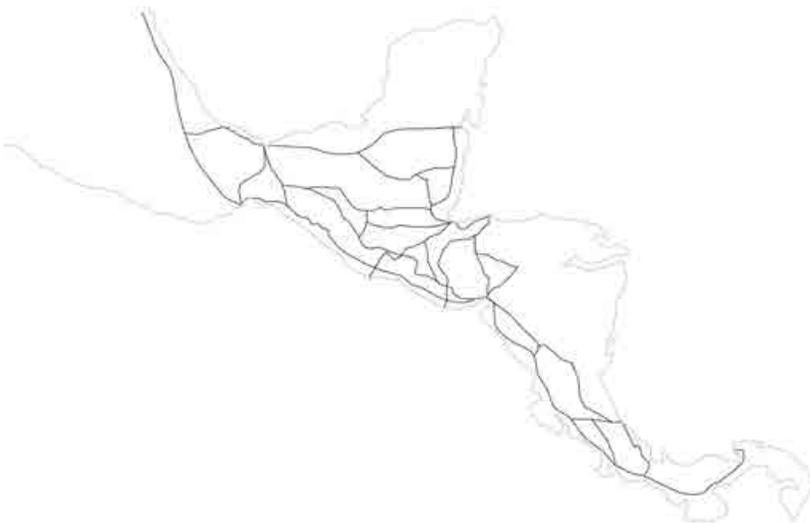
Zooming into another region in Central America's rainforest, the Usumacinta delta, struggles with similar ecological issues. The Usumacinta is the largest river in Mesoamerica and the most important water source in the region, feeding the Lacandon and Peten rainforests and the northern wetlands in Tabasco (Fig 6).

*Fig 6. Usumacinta and Chiapas rainforest, by author.*

Together with the Grivalja it forms the most important ecoregion and basin in Central America. It was central to pre-colombian Mayan trade networks and urban centers and according

anthropologists Golden and Scherer: "There is little doubt that this powerful river helped to define the political and economic landscape of Mesoamerica for thousands of years (Golden and Scherer, 2006, 2)."

Today, the river and communal lands are important social and structural infrastructures for contemporary Maya culture. The indigenous concept of social space and ecology is linked to collective land use and preservation. This is in direct opposition national privatization of lands and water that have divided communities and brought economic and political unrest to the area, subjecting farmers and rural populations to violence, pollution, migration, forced evictions, endangered ecosystems and human rights violations extending back to Guatemala's military dictatorship and the repression of the Zapatista indigenous movement. Yesterday's dirty war is directly linked to today's conflicts for "clean" energies, "sustainable" extraction of resources, "eco" tourism, public "goods," and modernizing projects that bring little development to the region.



Today, projects like the Mesoamerican Regional Integration (formly known as the Puebla Panama Plan) propose an information and trade corridor through Central America that will displace an even greater number of communities and cause unpredictable environmental destruction (Fig 7).

*Fig 7. Map of corridor, drawn by author.*

It claims to include a largely rural population in an electrical and information grids, while protecting the environment. Resistance to the MP began since its creation in 2004 among human rights activists, ecologists, cooperatives, unions, indigenous communities, farmers, and the zapatistas, mobilizing representatives from 15 countries. In an open letter at the II Binational Meeting for the Defense of Territory held in Guatemala in 2009, indigenous groups from across America declared a commitment to fight for the only thing left to them: "their lands," of which depended their "identity and life itself." Through the use of public radio, social networks, collaboration between cooperatives and communications, various groups dispersed throughout the Americas, have established alternate social infrastructures across borders.

Projects like the new National Tourism Accord, seek to exploit Mayan heritage by promoting la Ruta Maya (Mayan Route), through Mexico, Guatemala, Belize and Honduras. Opening up archeological sites and environmental reserves for tourist hotels and resorts as well as "the exploitation of natural resources, including biopiracy, monocultures and oil extraction (Zinn 2002). Environmental interests of preservation are clearly shadowed by exploitative interests, yet "culture," "preservation" and "security" are the terms used by the media for land evictions and new projects in the area. Important Mayan archeological sites and endangered natural areas are in the list for "eco-archeological developments," to be turned into Cancuns, theme parks and resort complexes. While engaging the rhetoric of eco-tourism and environmentalism, policies backed by the World Bank ignore the social factor of current local settlements and place the Lacandon and Peten Jungle in a carbon market and eco-tourism that excludes local residents and violate indigenous rights.

Today, the Highlands on the Usumacinta basin is home to at least 3 million Mayans speaking as many as 38 Mayan languages and dialects. The Usumacinta runs through important Mayan archeological sites and natural reserves: the Lacandon National Park, Montes Azules Biosphere Reserve, Piedras Negras, Yaxchilan, Lacanjá; on its basin: Palenque, Bonampak, Tikal and hundreds of less known sites (Fig 8).



*Fig 8, Palenque, Mayan city in near the Usumacinta, by author.*

Although there are currently no dams in the Usumacinta proper, hydroelectric potential has been a public controversy since the 70's. The proposed plants would have flooded an area of 500sq miles, endangered the rainforest, wetlands, archeological sites and displaced thousands in the vicinity.

According the CIEPAC and state statistics, this region is rich in natural resources: crude oil, large reserves of gas, uranium, iron, precious woods, water and biodiversity. Its rivers are main sources of hydroelectric and thermal energy for both countries, Chiapas alone generates 55% of the country's hydroelectric energy through the use of hydroelectric and thermal plants, 21% of oil and 47% of it's natural gas. Mexico is the world's sixth largest provider of raw oil and the second largest provider to the US. Guatemala is the only producer of hydroenergy and oil in Central America. Paradoxically a high percentage of the population living in this region does not have access to schools, drinking water, drainage systems, nor electricity. In a region where public goods, resources and infrastructures have become privatized, between 70-80% of the homes lack electricity.

In Chiapas, laws protecting large land owners, usually cattle ranchers and multinational companies, opened the border of the jungle to landless farmers. But when large corporations such as PEMEX and Monsanto recolonized the jungle, human settlements were subject to violent evictions and resettlement. Companies such as Coca-cola, Bayer, Monsanto and Goldcorp, rushed in to cash in on privatization, to exploit biodiversity, introduce genetically modified foods and pesticides which had devastating repercussions for the biodiversity of crops specially corn and water sources. Coca-Cola has created a water crisis by taking over entire water supplies to bottle water and produce soda, polluting rivers and aquifers and creating water shortages which exclude indigenous people from water concessions. In a region where most people lack portable water, the monopolization of water is devastating. In Chiapas Coca Cola received land concessions to the best water sources, in turn to sell it back in the form of bottled water and soda. Strong advertising campaigns have had broad political influences (Fig 9).



*Fig 9, Coca Cola advertising in indigenous town of Chelahnno, Chipas. Image by author.*

Former President Vicente Fox (the former president of Coca Cola) declared water an issue of "national security" when he took office and extended military presence throughout the region for the interest of the private company.

Guatemala has had a resurgent number of conflicts related to water sources and hydroelectric companies. Some of the countries most violent scenes can be linked to hydroelectric plants that date back to

its dictatorship. To quote another media event: for the past four years, a village in Santa Cruz Barillas has opposed the construction of a hydroelectric dam by the Spanish Hydro Santa Cruz multinational. Community opposition was repressed when the president declared a state of siege for 30 days during June 2012, prohibiting media and ngo's from investigation human rights

violations. Siding with the Spanish company he deployed an exaggerated military force to the mostly indigenous region.

Violence, land expropriation, community fragmentation, destruction of crops and biodiversity, are not the only consequences of multinational intrusions. CIEPAC notes that the ambiguity, security, and secrecy surrounding the construction of roads, dams, mining sites, and oil extraction around natural reserves, autonomous territories, indigenous communal lands and informal settlements, link state infrastructures with the militarization of zones, paramilitary groups and counterinsurgency strategies. In an article titled What's so Liberal about Neoliberalism, Yifat Susskind notes that "in 1994, some of the loudest calls to crush the Zapatista rebellion came from US corporations like Chase Manhattan Bank, which had invested billions in Mexico under NAFTA. In response, the US stepped up training and funding for Mexico's army." An important work edited by Anthropologist Victoria Sanford states that "in 1995, the military had deployed approximately 65,000 troops into the area, in some areas the ratio of soldiers to citizens exceeded 3:1 (Sanford, 2006, 171)."

The Lacandon Jungle in Chiapas has been reduced to less than 10% of its original area in the past 40 years (Fig 10).

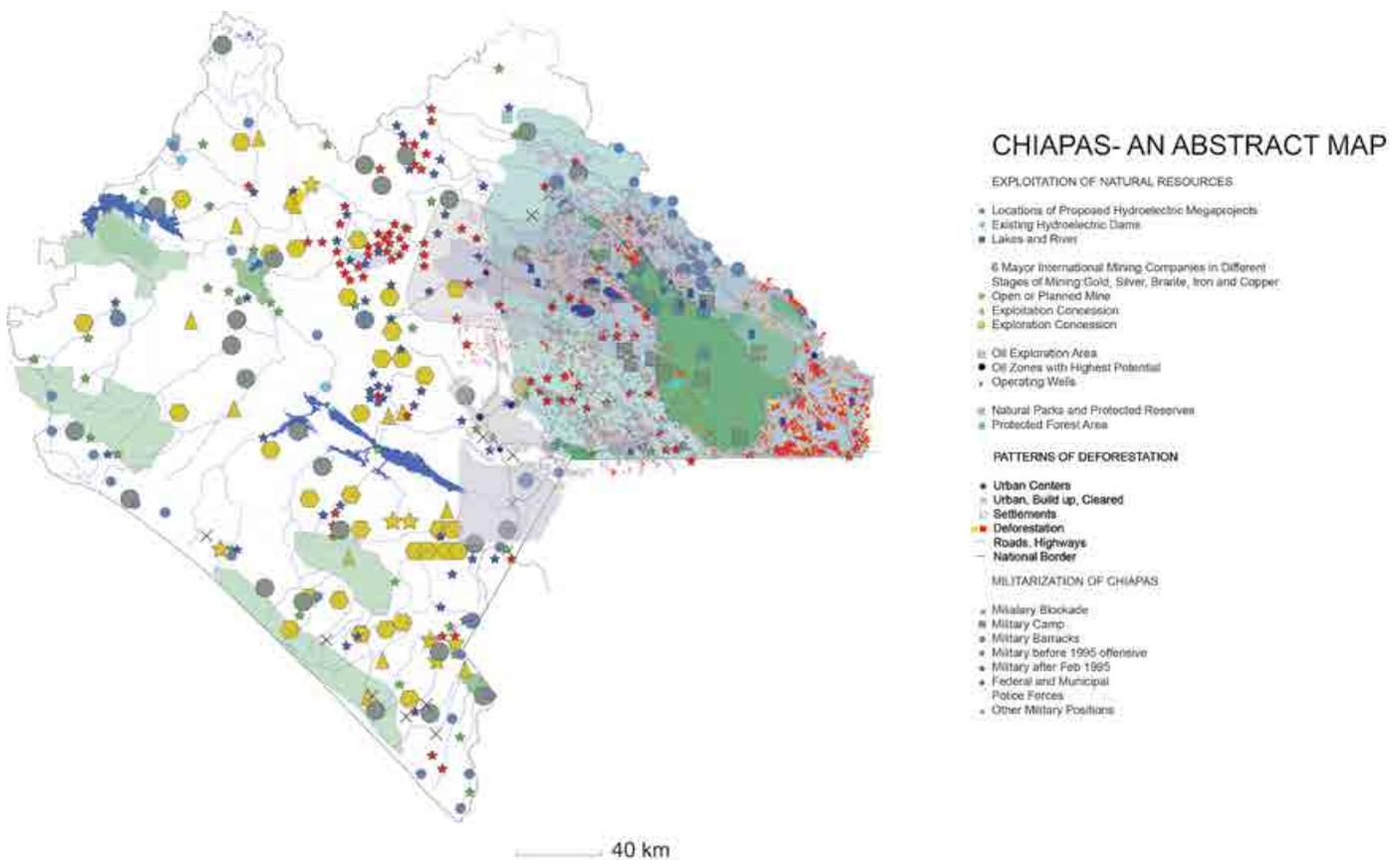


Fig 10. Chiapas: Exploitation of resources and militarization of zone. Map drawn by author.

Direct links between agricultural and state land policies, the structural changes imposed by the World Bank and NAFTA, and political conflicts have led to its rapid deforestation. With the privatization of land and resources came gas extraction, mining, oil and hydroelectric development plans, large scale mono-cropping, genetically modified foods, new cattle raising, biofuel, soil erosion, biopiracy, pollution, carbon offsets, refugees, illegal settlements in deeper regions of the jungle, land expropriation, drug routes (linked to police networks), community fragmentation, destruction of crops, pollution of seeds, soil erosion, and more military forces.

Although logging and rubber extraction had reduced the forest to some extent by the turn of the century, cattle raising and agriculture have converted at least two-thirds of the forest into pasture and cropland in the past 20 years (O'Brien, 2000).

Similar effects are observed on the other side of the border in Peten, Belize and through regions in the Amazonian rainforest that lie within Peru, Ecuador, Bolivia, Brazil, Columbia, Suriname, the French Guiana, and Venezuela. The impact of a free market economy has had severe consequences on rainforests and bio-reserves. The radical critique against the World Bank and IMF, described in *Green Guerillas*, reveals that by the late 1990's "the international development establishment had wrapped itself in the rhetoric of environmentalism to legitimate a structural adjustment agenda that was a barrier to sustainability and human development (Collinson, 1997, 11)." The global power's rhetoric on environmentalism helped facilitate deeper developments into protected areas such as the Lacandon, Peten, and Amazon through road construction and land concessions for multinational projects speeding their destruction.

Media geographies links distant natural and cultural geographies to urban landscapes, questioning issues of democratic participation, sustainability, growth, energy and role of mass media in the erosion of distant geographies, moving towards what Guattari calls an "ecosophy," Varese calls a "moral ecology," Subirats calls "a new critique." Various movements in Latin America acknowledge today's environmental and cultural crisis as a symptom of development through the exploitation of resources and people, and utter a urgent call towards a combined ecology and cultural survival. Resistance to the loss of culture, language, traditions and land has become a transnational movement through various indigenous territories creating a network of transnational civil societies.

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## PERSONALIZED MEDIA GEOGRAPHY IN A MULTI-LAYERED URBAN ENVIRONMENT

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### **Abstract**

Territories can be distinguished in the media distribution networks of 'media geographies' which are characterized by the specific features of regional cultural landscapes, even if they are remote or have been abandoned over long periods of time, which are absorbed into the urban consciousness and become part of the surrounding urban area. Cultural landscape and city are considered and explained as the integration of different topological qualities in the context of the cityscape. The cityscape can transform itself into a modern, economically thriving area for living, working and tourism. 'Media geography' networks are gaining in importance for the development of the identity of urban regions and are providing authentic locations of important relative significance in European and global competition. Identity in the globally operating 'value-added network' controls the economics, but also cultural and tourist interests (Kruse in Thierstein, Förster 2008: 37 ff). But how can something become visible that is still hidden and intangible?

### **1 Introduction**

Television, cinema, books, newspapers and the Internet with Google Maps and Google Earth mediate our experiences of place and geography. But geography is not only a visual discipline embedded in maps, globes, travel descriptions, landscape sketches and paintings, photographs and films. Also, there is a move away from visual representation back towards sensory geography and the reassertion of the power of space, place, landscape, ground, environment, region, location, distance, borders, cores, peripheries, and so on.

In this paper I will discuss the 'Höhen-Medien' ('altitude-media') design project, which focuses on landscape orientation and knowledge communication in a peripheral environment in Thuringia. Personalized GPS navigation systems in the form of software applications for mobile phones for route finding and additional information are a widely discussed topic in this context. The 'Höhen-Medien' project aims to take this one step further. 'Höhen-Medien' actually brings the subject into an action-network of human and non-human 'actors' to constitute a form of community-based and location-based knowledge system using architectural space as an immersive interface.

The Kyffhäuser landscape in Thuringia, Germany, is still a remote region, but is on the periphery of several cities such as Frankfurt, Erfurt and Leipzig, within a radius of about 100 miles and with about 5 million inhabitants. (Figure 1) Kyffhäuser castle, founded and built in the Middle Ages in the era of the great European ruler and emperor Friedrich I (or Barbarossa), and the Kyffhäuser monument look down on a lonely and deserted flat landscape from the distinctive Kyffhäuser elevation, which is of great geographical and historical significance. Every year, this legendary site is visited by nearly 200,000 people. The project aims at increasing this number significantly.

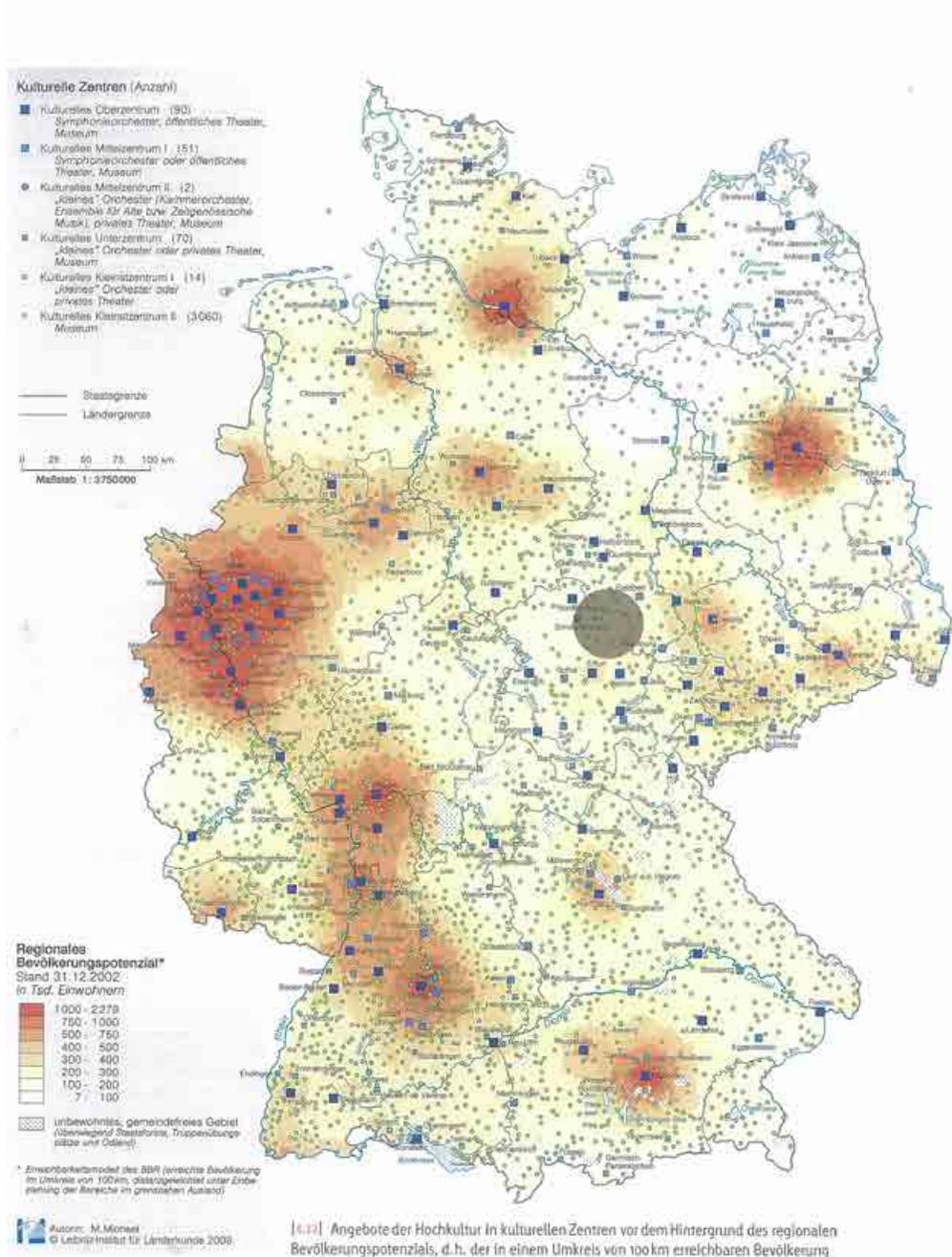


Figure 1. Population density 2002

There are globally networked advanced cultural settlement structures in the region dating from 2000 BC, as proved by the present day discovery of the Nebra Sky Disk with its cosmic images of the lunar and solar cycles. Around the time of the birth of Christ, this region was only a peripheral and border area far to the East for the Roman Empire. The remains of the medieval fortifications of Kyffhäuser castle are evidence of the physical representation of power in a widely extended network / grid of governmental structure in the 12th century AD. The region, with Kyffhäuser castle as a regional node, was thus incorporated into a perfectly structured ruling system of European power with a German nucleus. (Figure 2) The nodes in the medieval media network, organized around power and state, were distinctive points in the mountain range overlooking the landscape. The vast majority of the population lived here, taking care of food production and other services. There were also 'castles' in the urban settlement structures of cities, with their prominently visible new minsters and cathedrals. Other nodes in this central European network, such as Munich or Cologne, have today become global urban centres and are part of the European identity. The Kyffhäuser region lost its importance with the emergence of the modern era. A mythological revival was only first attempted in the 19th century with the construction of the Emperor Wilhelm monument (Kyffhäuser monument).

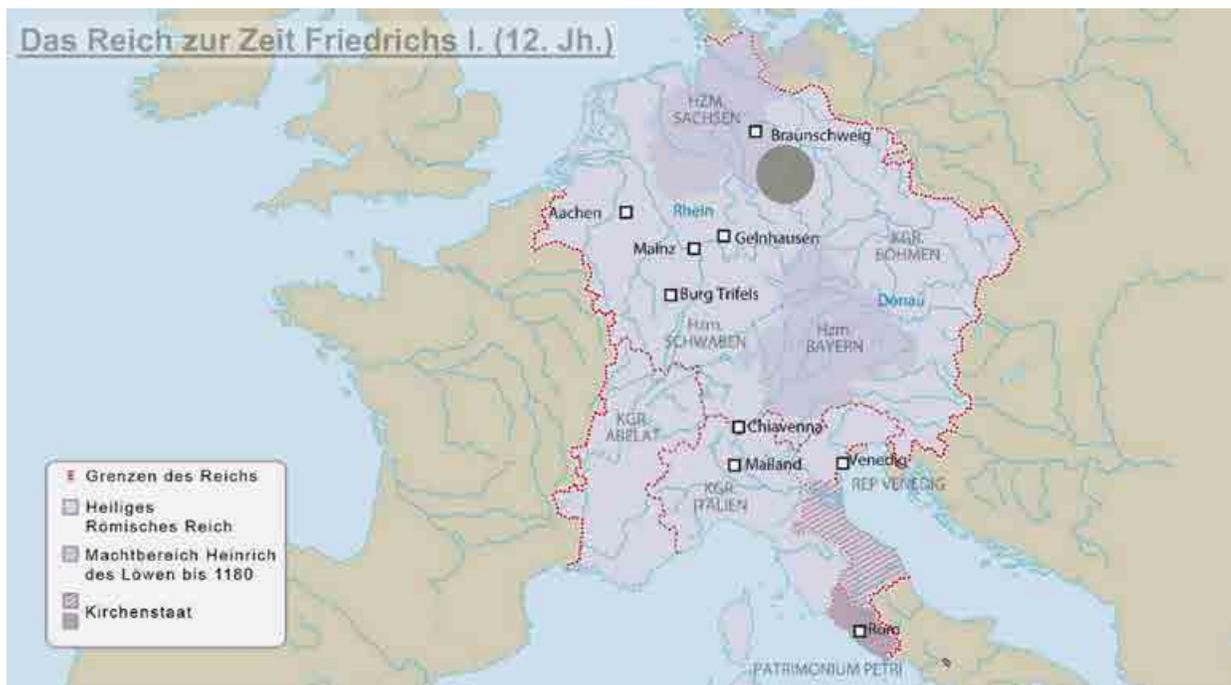


Figure 2. Medieval Germany

Today, the region lies in the geographical centre of a consolidated European Union. (Figure 3, Figure 4) The politically stated goal is an increasing acceptance of tourism as an integral part of the urban environment. The project is creating a media link for making the distinctive special features of the local cultural landscape, with the surrounding urban centres such as Halle, Leipzig, Merseburg, Naumburg, Jena, Weimar, Erfurt, Eisenach, Fulda, Coburg, Frankfurt, Marburg, Kassel, Göttingen, Hildesheim, Braunschweig, Quedlinburg and Magdeburg, better known.



Figure 3. Geographical position, region



Figure 4. Position in the EU today

The development of personalized and community-based media geography as a comprehensive media grid of immersive interactive communication for culture and leisure time activities goes hand-in-hand with its progressive influence on the control of individual and organized public mobility. The development of transport infrastructure (air, rail, road, information) progresses and the network is becoming ever more tightly meshed. Locals and visitors are networked into complex knowledge-based and information-processing systems via body and spatially-related media interfaces using the new developments and are guided to the authentic physical locations in the region.

The connectivity of the urban spaces of 'media geography' is linked to the physical region and its physical interfaces. A globally communicated identity is created. The landscape becomes accessible by node-related connections for energy-efficient use of private and public transport and merges seamlessly into the urban settlement structures. The exercise of this universal mobility is optimized with respect to the use of time and energy via intelligent virtual control models and tends to reduce the feeling of distance. The ever present navigation and communication media (GPS, smartphones) also encompass the time of the movement into the sphere of experience and so strengthen the networking of our multi-layered urbanity as a homogeneous unit of geographical landscape and media city.

The current documentation, orientation and representation materials for the Kyffhäuser site and geography, in the form of maps, travel descriptions or web pages, mediate our experience in a very formal, divided and non-individual way. Primary visual media such as books, maps and Internet presentations are not yet part of a personalized global communication network. The 'Höhen-Medien' project aims at developing a 'network environment for multimedia objects' in which all the relevant information and topics can be stored and edited and which allows personal access to this information from different locations via mobile devices or Web-based multi-touch screens.

The network environment is based on a virtual model with intelligently accessible layers for global use operating across all scales. In the network environment, the important situation of the landscape and geography is intelligently connected with chronological, historical, power-political, cultural, legendary, mythical and environmental information and, as far as possible, made suitable for the interactive and immersive experience. The network environment for multimedia objects in geography and history in superposition with graphic, illustrative and textual information is globally available in many diverse and different situations, producing a network of links between the urban public space and private interests. Personalized media are today's social and cultural cartography for meaning-creation and identity-formation on the multiple scales of integrated rural and urban environments. Furthermore, we will have to find suitable ways of analyzing their impact.

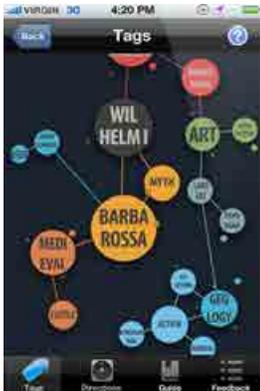
## **2 'Hash Guide' mobile route finding and information system**

The 'Höhen-Medien' 'Hash Guide' project creates a multi-layered network environment and is a cultural navigation tool for kids and people of all ages based on tags and personal preferences within a personalized media geography. It structures the Kyffhäuser project thematically, in locations and regions in an urban setting, in a presentation which can be globally accessed via the Internet for tourists and local residents. Visitors can use the navigation app for mobile smartphones for individually accessing information from the network environment at the actual location, which makes the whole experience much more enjoyable. Its purpose is to create personalized navigation routes, based on the visitor's interests, which will enhance his or her experience. Visitors can interact with objects on their route in their personalized media geography, and edit and store information. An additional function is that of a feedback tool for routes and exhibitions regarding the visitors and their interests. The user-friendly interface selection menu clearly links the various topics of interest regarding Kyffhäuser - such as geography, vista remote sensing, trekking, history, politics, myths, art, events, wayfinding and access to games and fun - to the various locations on the spot.

The navigation system works by pairing a number of keywords or hash tags to a number of locations or waypoints according to their relevance. The user selects one or more keywords and the app creates a list of locations sorted from top to bottom by relevance to the keywords.

Using the list, the app then suggests a route which connects these locations. There is also a rating system implemented. Initially, the keywords and corresponding waypoints are selected by the monument curators, but the ability of the visitors to rate how relevant the tags are will, in time, make sure the relationship is objective.

The advantages of using such a mobile approach are manifold. The route and content the visitors experience are personalized to their own interests. This also means visitors are less likely to miss out on information of interest to them. The routes can be made shorter by restricting them to just one theme, but this does not mean that users are restricted to just one familiar information bubble.



## 2.1 Screens and navigation

The Tag Screen is the start screen and is where users plan their routes. (Figure 5) At least one category must be selected using a 'star chart' map. The tags are represented as coloured bubbles linked by lines. The size of the bubble shows the number of locations linked to it and its relevance. The bubbles will grow or shrink over time, according to visitors' ratings.

Figure 5. © Felix Dondera: Tag Screen

The Navigation Screen is where the user obtains the directions for moving from one location to the next. (Figure 6) This uses the phone's GPS and compass capabilities to direct the user. Getting close to a location activates the Guide Screen, from which users can access information relevant to their location and selected tags. (Figure 7 and Figure 8)



Figure 6. (Above Left) © Felix Dondera: Navigation Screen

Figure 7. (Above Middle) © Felix Dondera: Guide Screen

Figure 8 (Above Right). © Felix Dondera: Information Screen

The end screen is the Feedback Screen. After visiting a location, the user can rate how useful the tags were for that particular place. This ensures that the relevance of the ratings is objective. (Figure 9)



Figure 9. © Felix Dondera: Feedback Screen

'Hash Guide' attempts to use the current technical possibilities of mobile devices to enhance the cultural experience of visiting the Kyffhäuser castle and landscape and to make it more attractive for all generations. It uses concepts which can also be applied to other, more complex, locations.

### 3 Location dependent and mobile media

Here are a few examples of the detailed sophisticated network environment built into projects for different locations and selectable tags in the 'Hash Guide':

It is possible to illuminate the route using interactive light projections by using the 'Hash Guide' guide screen for events taking place at night; as with the route projection illumination onto the trees, for example.

One possibility for parents with children of school age is the selection of the route via the guide screen 'Kids / Fun / Game / Finding Barbarossa. To physically increase the motivation of the child, it receives a crystal which playfully responds to individual stations by offering different puzzles.

Selecting the route 'History / Barbarossa Castle / Location Museum' leads the visitor to the Barbarossa exhibition. Here, with the help of the app and smartphone, visitors are given access to personalized Internet-based presentations from the 'Network Environment for Multimedia Objects' on multi-touch screens (Kruse in Thierstein and Förster 2008: 309). The 'Network Environment for Multimedia Objects' is being developed at the Institut für Multimediale und Interaktive Systeme (IMIS) in Lübeck (<http://www.imis.uni-luebeck.de/>). The multimedia presentations can be watched immersively, interacted with, personalized and saved - either individually or in groups. The visitor is connected with the physical environment via the media and can interact with it via the multi-touch screen. New technologies and developments of location-dependent media and mobile media and their connection via the Internet, have applications in this context. The underlying model is based on body and spatially related media (Ishii 1997: 1-8): "Firstly, there is the digital enrichment of specific physical locations via ambient and tangible media. Secondly, there are media devices that we carry on and with our bodies when moving through the world, such as mobile or body portable (...) media." (Winkler, Cassens and Herczeg 2012: 306)

The proposed museum exhibition concept will create an immersive interactive information environment that will network the Kyffhäuser castle and landscape with the surrounding cultural and geographical nodes of the 'castle land' and the urban areas. It will be an interactive learning environment for school groups. For the visitor and tourism, it is a new opportunity for trans-scalar interaction with personalized media geography. The aim is to bridge different scales, such as at the personal, local, regional, and global levels.

The media linking of the cultural landscape in Thuringia and Saxony-Anhalt, their distinctive local features with the surrounding urban areas and personalized access to Internet-based information, is a challenge for the further development of personalized media geography in this multi-layered urban environment.

### 4 Image production

In order to make the new significance of Kyffhäuser castle and its landscape more visible to our times, the construction of a modern-day sign in the form of a tower was proposed to show the possibilities of media architecture and to stimulate discussion. The 'Interactive tower at Kyffhäuser' project is located on the top of a ruined medieval tower. The new tower structure allows a dialogue to be created with the Kyffhäuser-Monument. And the place identity is being changed from both a local view and a view from a distance. (Figure 10) The tower forms a contrast with

its design and use of materials (mostly reflective metal). It reflects the surroundings and supports the visitors with a new observation platform for viewing the local countryside and for the objects that reflect the past and its history. The main idea of exposing the existing view in a new and unexpected manner is to provide a new framework for them. By doing so, an interaction with everything which can be seen and observed from there is being created. The mood of the tower is also extremely dependent on the weather conditions - such as the amount of cloud cover, position of the sun, colour of the sky and so forth. At night, the tower will be floodlit and its glowing image will be a symbol of the mystery of the Barbarossa Saga. It will also act to attract more visitors to the place, as there are some issues with the low visitors numbers and problems with re-awakening interest in the place. (Figure 11, Figure 12, Figure 13)



Figure 10. (Left) © Jonas Lideikis: Interactiv Tower at Kyffhäuser

Figure 11. (Below Left) © Jonas Lideikis: Interactiv Tower

Figure 12. (Below Middle) © Jonas Lideikis: Interactiv Tower at Kyffhäuser, view from inside

Figure 13. (Below Right) © Jonas Lideikis: Light concept of Interactiv Tower



The image of the interactive Tower has been built-in to the 'Hash Guide' network environment as a contemporary advertising sign and is globally distributed via the Internet and other media. The image creates an identity and fixes its importance in media geography media distribution networks. We know successful examples of this, such as the Skywalk and the five fingers of the Dachstein, Triassic Park, Eagle's nest, Nordkettenbahn funicular in Innsbruck by Zaha Hadid, etc., or the visualization of locations, such as the nearby Arche Nebra. (Figure 14, Figure 15, Figure 16) Secluded landscapes and their cultural backgrounds are gaining a new identity and their spectacular images with their related stories and events are being spread through the media networks. "Today, a media presence is crucial to success when competing with other locations. No image, no significance." (Petrin 2008: 160)



Figure 14. (Above Left) Dachstein skywalk, Austria

Figure 15. (Above Middle) Gschöllkopf Eagle's Nest, Austria

Figure 16. (Above Right) Dachstein, five fingers, Austria

The authentic, sensory perception of 'physical space' which is determined individually and collectively and the communicated perception of 'physical space' via public knowledge, pictures, cards, 'spatial narratives' such as travelogues, as well as collective myths of the space, create mental pictures (Petrin 2008: 164). Visual 'depictions' and narrative 'visualizations' of the place and its stories and representations play an equally important role, as does the interactive tower constructed.

## 5 Conclusions

The current form of media geography is more sensory and personalized oriented. The use of mobile media and location-dependent media in an authentic environment connect regional cultural landscapes with the surrounding urban areas and allow manifold penetrations. The authentic physical space and the digital informational network environment interact with one another. The increased sensory experience promotes the immersive experience and interactively controllable reality in personalized media geography. Experience and learning spaces are created which allow easy and experience-oriented access to the cultural landscapes and the surrounding urban areas for leisure, recreation and tourism. The media networks of 'media geographies' enrich the identities of urban regions by disseminating signs, images, stories and local events in the multi-layered urban environment, and provide authentic locations with important relative significance in European and global competition.

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# Media Geographies: New Geographic Practices

Moderated by Jens Geelhaar, Bauhaus-Universität Weimar

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## BEYOND THE NETWORK: EXPERIENTIAL FIELDS AND URBAN MEDIA ECOLOGIES

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#### **Abstract**

The growing proliferation of urban interactive technologies into our everyday lives demands a move from an initial fascination for the technologies in themselves to their actual experiential impact and how they '...affect the ways in which we use and understand walls, windows, doors, sidewalks, streets, intersections, parks, markets, and playgrounds.' (Greenfield and Shepard, 2007). Increasingly, this cannot be done by focusing on singular devices, subjects or places. One way of approaching this heterogeneous plurality of elements has been prominent in the diverse analysis of networks. The problem, however, is the continued conception of entities or nodes as foundational building blocks of such networks and how they are connected or experienced.

In a recent resurgence of William James' radical empiricism Adrian Mackenzie proposes an approach toward wireless technologies not as merely facilitating networked experiences of a particular kind but as constitutive of relational practices blurring boundaries between confined entities such as architecture, human bodies or technological devices. According to Mackenzie, wirelessness '... designates an experience trending toward entanglements with things, objects, gadgets, infrastructures, and services, and imbued with indistinct sensations and practices of network-associated change" (2010, 5). These entanglements are in particular evident when dealing with e.g. media architecture or mobile technologies in urban or public space.

While building on the conceptual outline of wirelessness foregrounding experience, we propose the concept of experiential fields emphasizing the emergent and affective quality of experience. Experiential fields address experience as an ecological and relational process, focusing on the conditions of emergence of urban interactive environments. We are concerned with ways of facilitating experiential situations pointing at urban media-ecological processes and investigating how to work with them creatively beyond confined spaces, bodies or technologies.

Through an analysis of two urban interactive installations, Frequency and Volume (2003) and Ekkomaten (2012), we bring to the fore a range of challenges and questions concerned with accounting for the workings of media ecologies and experiential fields. Both works deal with sound activating and activated through its urban context. Frequency and Volume by Rafael Lozano-Hemmer is an interactive art installation amplifying radio frequencies through bodily engagement

with the exhibition space, foregrounding awareness for electromagnetic fields. Ekkomaten is a gigantic listening machine that lets people explore echoes from the past tied to a particular site in the city through their interaction with it. Either work constitutes a media ecology activating an experiential field which modulates the potential for action in the city through an affectively engaging mobilization of emergent forces.

Investigating relations between media and the urban along the constitutive lines of experiential fields allows us to reconsider what we usually separate into discrete entities such as the body, the urban or the political. Shifting the focus on media in urban contexts from an infrastructural or informational discourse toward urban media ecologies as processes of immediation opens new potentials for considering mediatic encounters and the situations they facilitate in experiential terms beyond the network.

## 1 Introduction

The growing proliferation of urban interactive technologies into our everyday lives demands a move from an initial fascination for the technologies in themselves to their actual experiential impact and how they "...affect the ways in which we use and understand walls, windows, doors, sidewalks, streets, intersections, parks, markets, and playgrounds." (Greenfield/Shepard, 2007). Increasingly, this cannot be done by focusing on singular devices, subjects or places. One way of approaching this heterogeneous plurality of elements has been prominent in the diverse analysis of human and nonhuman actors in networks (Latour 1987, 1993; Castells 1996, 2009; Chun 2006, 2011; Terranova 2004, Shaviro 2003, Murphie/Potts 2003, Munster forthcoming, Corby 2006). In his recent book *Wirelessness*, Adrian Mackenzie presents a critique of a network-centric analysis of the relational complexity and experiential impact of the distribution of wireless technologies based on a reading of William James' *Radical Empiricism*. For Mackenzie, wirelessness designates "... an experience trending toward entanglements with things, objects, gadgets, infrastructures, and services, and imbued with indistinct sensations and practices of network-associated change" (2010, 5). Mackenzie explicitly positions his undertaking in contrast to network theories' focus on relations as connections:

*"After a decade of heavily network-centric social, cultural, organizational, and mathematical network theory, there are reasons to begin to approach networks a little more diffidently. While it exhorts attention to relations, network theorizing can deanimate relations in favor of a purified form of networked stasis" (Mackenzie 2010, 9).*

However, even though wirelessness as a concept opens up a different analytical path for making sense of the dynamics of increasingly interactive environments, the network still remains the dominant frame of reference for relationality in the book. With the term fields of experience, we attempt to follow the path opened by Mackenzie towards an actual conceptualization of the experiential changes and sense modulations effectuated by – among other things – new wireless infrastructures in urban media ecologies. In doing so, we wish to continue a shift away from an entity-based logic of networks where things, objects, or even movements are interrelated and often reduced to fixable substances (Brunner/Fritsch 2011). For James, experience provides the ground for emergence without presuming a substantially fixed world to be encountered or an already constituted subject encountering. He calls pure experience an experience where thought and thing have not yet bifurcated but share the same emergent milieu (James 1996, 74). Pure in this sense is not an essentialist concept but a tensed field or system to use Gilbert Simondon's vocabulary (Simondon 2005). In his writings, James describes pure

experience as an 'instant field of the present' (1996, 23). Here, our attentiveness to the field character of experience points to this double-process; that of pre-expressive structuration and the actual passing of emergence. Neither of them, as we will show, is sufficiently represented by a network-thinking that takes relations as either supportive or generative of structure without accounting for their movement and tendency. What comes to pass an experience never entirely detaches from its experiential field nor does it exhaust the field's potential.

Another way of addressing this double process is through conjunctive and disjunctive relations in James' terminology. In relation to wireless technologies, Mackenzie particularly emphasizes conjunctive relations as facilitating a sense of (pure) experience through transitions (2010, 51-53). Conjunctive relations are relations making change, the vital power of existence, being felt. For us Mackenzie's rather one-sided embrace of conjunctive relations is problematic and requires further investigation of relations being as real as the terms related. We want to get even closer to relations, asking what a "relation-specific" approach can do in resonance with interactive media environments (McCormack 2010). While conjunctive relations provide a sensation and flow of transition to be felt, we find it important to underline that their coming together happens disjunctively. In fact, James provides a thinking of relations as singular series in their tendency toward potential conjunction, a concept also crucial for Gilles Deleuze (Deleuze 1994). Accordingly, conjunctions are not mere connecting devices or pure flow (James 1996, 51-52). On the contrary, while conjunctive relations focus on the emergence of experience, disjunctive relations point at a relation's singularity as a movement or virtual – that is, not actualized – tendency.

Here, we follow this double movement by problematizing the interplay of conjunctive and disjunctive relations through a thinking of experiential fields. On the one hand we wish to unfold the operational character of relations in actual experimental situations. On the other hand we attempt to follow James in entering the more virtual tendencies of such experiential situations as actively operating and tensed fields. Such fields are creatively contributing to the passing of experience. Investigating how they pass, leads us to investigate contemporary media as technologies for emergence. Beyond a mere technical boundedness such technologies of emergent experience (Massumi 2002, p. 192) underline contemporary media as ecologies rather than networks and focus on the force of immediation rather than a connective logic of mediation.

## **2 Urban Media Ecologies and the Movement of Series**

In 2003, artist Rafael Lozano-Hemmer staged an interactive artwork involving radio frequencies, movement tracking, visitors and their bodies moving in space. *Frequency and Volume* is part of Lozano-Hemmer's relational architectures series. Projecting the silhouettes of their bodies being tracked by the system onto a white wall in a gallery space, participants can tune into different radio frequencies which are then transmitted and amplified into the space (Fig. 1). The system captures frequencies which are not only used by public radio but also police, ambulance, taxi and truck drivers. Once a body's shadow has been tracked, a signal is attached to it and modulates according to its movement (Fig. 2). Lozano-Hemmer describes how *Frequency and Volume* problematizes the struggle over access to public material and immaterial spheres. The work was developed as response to the Mexican government's restrictive administration of radio frequencies preventing indigenous pirate radios as means of empowerment and political organization.

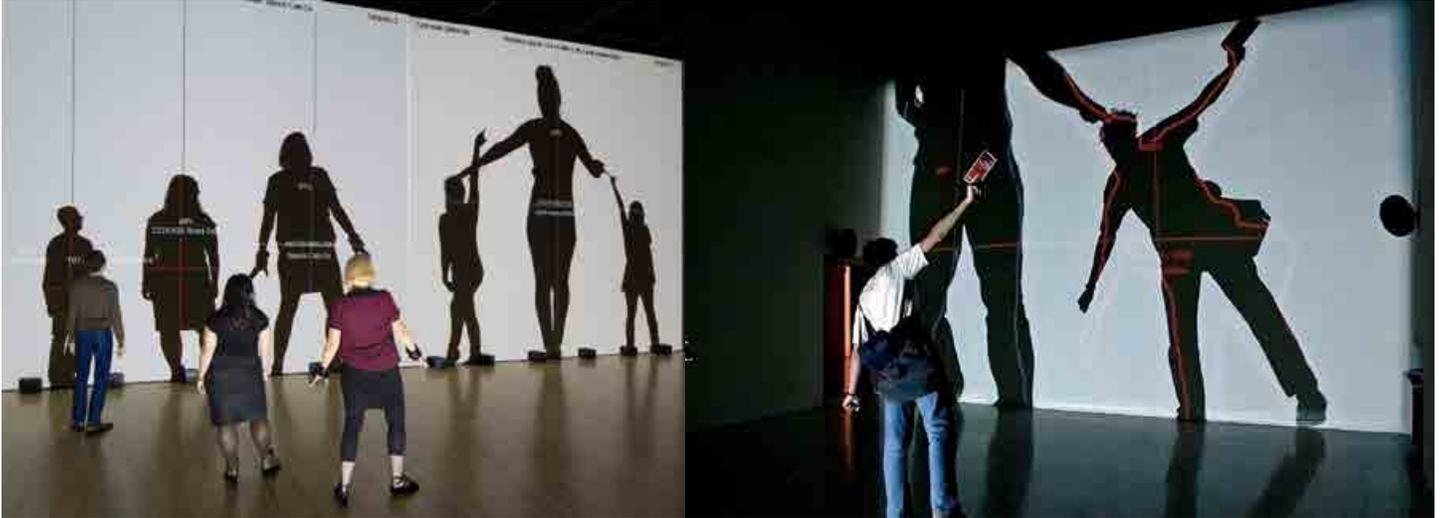
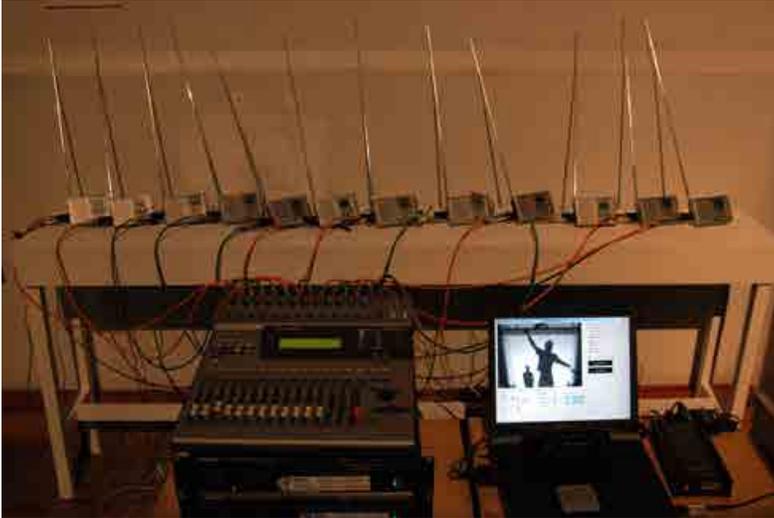


Figure 1. (Left) *Frequency and Volume, Relational Architecture 9, 2003. San Francisco Museum of Modern Art, 2012.* Photo by: Johnna Arnold. From: lozano-hemmer.com.

Figure 2. (Right) *Frequency and Volume, Relational Architecture 9, 2003. Some Things Happen More Often Than All Of The Time, Mexican Pavilion, 52 Biennale di Venezia, Venice, Italy, 2007.* Photo by: Antimodular Research. From: lozano-hemmer.com.

Bearing the idea of pirate radio in mind, one can see how Matthew Fuller's seminal treatment of pirate radio as media ecology and Anthony Dunne's development of the idea of Hertzian space come together in *Frequency and Volume* (Fuller 2005, Dunne 1999). Fuller's account of the media ecology of pirate radio is not concerned with the mere interrelation of humans, technologies and urban geography, but rather with the blurring of form and content in these ecologies (2005, 22). His use of the term ecology has been particularly influenced by the works of Gregory Bateson (1972) and Félix Guattari (2008) (see also Parikka 2011, Goddard/Parikka 2011). By exposing sound's modulatory force through frequencies and across technologies, bodies and landscapes, Fuller provides an outline of media ecologies which differs from a more rigid conception of media networks. The technological assemblage of an electromagnetic field, its amplification and the motion tracking of bodies has to be considered on its operational level, asking "what it does" (Murphie 2002, 189). As relational operators these technological devices insert themselves into the field of experience of electromagnetic potential by tweaking such potentials into actual perceptual events through the movement of bodies.

The experiential field character of such an urban media ecology enables conjunctive relations to emerge disjunctively. Each individual participant entering the art installation immediately constitutes a change of state (or phase) causing differential perceptual effects. Through the media ecological blurring of form and content, the work is less based on stimulus and response or communication, but rather provides a pre-expressive structuration and an actual passing of emergence. From this point of view *Frequency and Volume* functions as a proposition for bodies to engage with an incorporeal electromagnetic field making it corporeally felt without pre-defining what actually becomes felt (Fig. 3).



*Figure 3. Frequency and Volume, Relational Architecture 9, 2003. Laboratorio Arte Alameda, México City, México. Photo by: Antimodular Research. From: lozano-hemmer.com.*

The conjunctive enables this by relaying relations and their very manner of being while the disjunctive makes it palpable in the passing of experience. As soon as a frequency is attached to a silhouette on the wall it rests for a short instant and then modulates while the body is moving. This is an experimental eventuation on the flight where the ecology as much as the experiential field move and alter in resonance with the actual human body in motion. This aspect, we feel, bears a lot of potential for thinking not only the constitution of “technoecological” fields of experience but the power of the disjunctive as actualizing and perishing operation (Parisi 2009). Perishing, a term crucial for Alfred North Whitehead, is a necessary part of each process of emergence (Whitehead 1978, 29). Without the disjunctive relation and its perishing the experiential field would remain static and difference could never occur. In relation to *Frequency and Volume* the perishing can be considered as a felt impression of the actualized radio frequencies moving through bodily sensation and leaving traces as feelings, which are now part of the participant’s bodily-sensorial repertoire. In urban media ecologies, neither bodies in relation to the space nor technical apparatus pre-figure their mutual coming-together, which constitutes this media ecology as field of experience. What might be considered as the technological network of the artwork actually requires an ecological dimension of movement beyond the networked structure. An ecological mode of thinking in experiential terms allows us to reconsider what this mutual coming-together actually means beyond a model of synthesis based on preset entities.

Ecologically, what comes-together mutually is the interplay of relations as tendencies for emergence acting upon each other. The field of experience and its conjunctive and disjunctive operations enable us to conceive of technologies not as entities but as technologies of emergent experience while at the same time being part of structures facilitating such emergence. The disjunctive-conjunctive thinking of experience in the making lead us to propose not only a different conceptualization of media but also a different mode of experimentation with them. Media in this sense are not just ecological operators but also in their very nature differential. Andrew Murphie writes: “Differential media ... do not ... just enhance connections but draw our attention

to difference as intensity, to movement, to sensation, to ongoing affects" (Murphie 2003, 151-152). The difference of network and ecology resides in the differential foregrounding intensity, movement, sensation and affect as excessive and incorporeal forces in experience; in other words they are the fielding of the field of experience. Emphasizing the differential processes of media in relation to shifting fields of experience leads us to conceive of any media-related event as a nexus of movements, sensations and their tendencies at the same time affectively potentializing and effectively becoming.

The co-operation of conjunctive and disjunctive fielding Brian Massumi terms the relation-of-non-relation (Massumi 2011, 20). A field is tensed but not actualized. It operates ecologically as potential differentiator while not preempting what actually comes to pass in experience. Relations' status as "real" gives them a quality of self-relation in the first place. In their bare activity they express a tendency or movement ready to act and being acted upon by other relations. In this sense a relation as processual and non-substantial could be called in reference to both James and Deleuze a series. A series' quality is the manner or style of its movement. As series, relations maintain their particular propensity while resonating with other relations to constitute experience. This is the relation-of-non-relation or in Deleuzian terms a disjunctive or heterogeneous synthesis of resonance (Deleuze 2004, 262). Series-thinking requires us to conceptualize media ecologies through experiential fields as resonance of heterogeneous series.

### **3 Immediation and Technologies of Emergent Experience**

Following Deleuze's idea of the heterogeneous synthesis as ground for emergence through series enables us to rethink the relation between networked structures and ecologies for emergence. Andrew Murphie points out that the general critique of networks is based on a binary separating structure from emergence (2006, 123). The existence of the series and their heterogeneous synthesis forge emergence to become expressive. How the threshold for this emergence actually operates requires us to investigate the relation between relations and their immediate co-emergence. Structure and emergence feed from the same immediate field of relations, i.e. the field of experience. In other words, they share the same middle or set of relations giving birth to series of structuration and pulses of emergence. We propose immediation as a limit-concept and practice allowing for a grasping of fields of experience in the immediacy and materiality of its very operation through distributions of affective forces. The main question considers the operations at stake enabling embodied perceptual experience arising not as an act of mediation but as the composition of space-time for experimentation through perception, orchestrated by interactive means – an example of which we will develop below.



Figure 4. Ekkomaten, on display at Store Torv, Aarhus in March 2012. Photo by: Uggi Kaldan.



Figure 5. Ekkomaten and a map showing the layout of the square, with symbols for the position of each of the six echoes that people could search for. Photo by: Uggi Kaldan. Graphics by: Jette Bæk Møller.

Ekkomaten (Fig. 4) is an interactive listening machine developed at the centers for Digital Urban Living (DUL) and Participatory IT (PIT), CAVI, Aarhus University, in 2012. It functions as a physical and auditory interface to the 18th century city of Aarhus, Denmark. By interacting with Ekkomaten, people can listen to six 'echoes' from the past relating to actual buildings, locations and events at Store Torv (the Large Square), echoes that have supposedly been captured by the machine. The echoes are site-specific stories embedded in a general soundscape, and presented in a dramatized form as small radio plays. In order to explore the echoes, you need to physically turn and directly point the machine towards the sites where the stories unfold; some stories are tied to current buildings (the Church), other to buildings or sites that are no longer present at the square (e.g the City Well, see Fig. 5). This way, you gain access to the sounds of everyday life as it might have occurred in the 18th century at this particular location.

Ekkomaten is an example of an interaction design that questions conceptions of anytime-anywhere ideals of seamless interaction with ubiquitous and disappearing digital infrastructures (see e.g. Bolter/Gromala, 2004). As a machine for listening, Ekkomaten demands attention and it also demands a considerable amount of physical effort from the people wanting to interact with it. This form of tactile engagement immediately modulates the reception of the soundscape and feeds into its reception - and it does so in a number of ways. People behave very differently: some will turn the machine around and then listen without touching it, some will continuously hold onto the machine while listening attentively, sometimes people will explore the functionality of the machine without actually listening to the echoes (Fig. 6). This is just one example of how the experiential field offered by the installations plays out very differently through people's courses of interaction.

Ekkomaten aims to activate a range of sensations; the tactile/physical, the auditory, the visual, which are all activated through the experiential field, immediately and affectively engaging the people interacting with the machine. People have commented that by listening to the soundscape, images of how the place might have looked like emerged. This is a kind of immediate synesthetic functioning facilitated by the setup, not least relating to the fact that Ekkomaten is placed in the city. This might seem banal, but situating the reception of the content in the place in which the events might have taken place not only adds to the atmosphere of the reception of the content, it also very palpably activates people's ideas about how the city might have looked, smelled, and sounded in the past. Again, in a media ecological approach boundaries between form and content blur. For instance, people have started talking about the validity of the soundscape as a way of entering discussions about Aarhus in the 18th century. In other words, by experiencing the sounds of the 18th century Ekkomaten brings conjunctively different series into resonance even though their disjunctive temporal relation spans centuries.

Ekkomaten is not primarily concerned with connecting people to the past. Instead, it attempts to re-activate past events in the present through people's interaction, in a very real way 'bringing stories to life'. In many ways, this form of re-activation of past events in the present also tends towards the future use of Store Torv as a public space or the deployment of interactive technologies in an urban context. A range of people have commented on Ekkomaten as an alternative interface to- and in the city, as opposed to mobile phones, urban screens or media facades. This way, we will argue that Ekkomaten is a material manifestation of a whole range of more subtle changes of the way digital and interactive technologies and media ecologies are reconfiguring the cityscape and modulating our perception of urban space. The concept of immediation allows us to think the conjunctive-



Figure 6. Different forms of interaction and listening. Photo by: Uggi Kaldan.

disjunctive synthetic operations for constituting immediate and at the same time fielding events of experience. The way an entire urban media ecology shifts in its potential through an embodied and affectively engaging process enables us to think such technologies as technologies for emergent experience. At the same time, considerations for emergence have to be complemented with the processes of perishing and its extension of a field of experience, its virtual structuration. The main challenge is not only to make things felt in their immediate presence in experience but also to make their potential ways of causation or continuation a vital and empowering part of it.

#### 4 Propositions for Future Experimentation

Experimenting with media allow for experimenting with the thresholds of fields of experience and their manners of actualizing. Experiential fields enable particular kinds of experimentation, not necessarily through technological or bodily constraints, but through reinforcing resonance and emphasizing conjunctive and disjunctive relations. How experience engenders a feeling of transition resonates across an entire field, regardless of its heterogeneous elements generating a new series while continuing the movement of all the other series in heterogeneous synthesis. In Frequency and Volume the moving body modulates frequencies. Their amplification and expression pass as directly felt intensities where neither technology, the body or the space could individually account for what constitutes this experiential media ecology. Ekkomaten creates the conditions of emergence for the immediate coming-together and eventful activation of a range of processes, series and relational events through the interaction and can be seen as a technology of emergent experience. Politically we are interested in experimenting with technologies of emergence through media ecological and immediating propositions. As a consequence, we conceive of writing and practicing along the lines of new media theory and interaction design as a techniques for experimentation through non-determinist and non-relativist but relational concerns of contemporary media technologies.

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## THE URBANISM OF MASS INTIMACY

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### **Abstract**

With the proliferation of data in an extensively networked and data-centric society, the interactions between institutions, subjects, material culture, and architecture occupy a unique geography that is at once both material and data. The integration of immaterial data with physical space, material objects, and people creates an incredibly dynamic spatial configuration unbounded by physical limitations and in constant evolution; this cyborg geography is formally indefinite and temporally unstable, transcending natural and artificial borders as integral with the global economy.

This ubiquitous urbanism is the “residue of ulterior motives” of the control society identified by Gilles Deleuze and William Burroughs; here traditional notions of the city and urbanism are replaced by Guy Debord’s definition of urbanism as environments controlled by capitalism. The business, as the dominant institution of power in the control society, configures the primary relationship between people and institutions by capitalizing on the contemporary body as spatially extended cyborg. By analyzing the body’s data, businesses render individuals as consumer subjects. The merging of data and the corporeal allow instantaneous feedback loops where algorithms like Rolling Ball construct the retail environments we encounter. In the hands of the business, architecture and material culture become tools for the modulation of human behavior in spurring consumption.

Within the context of the control society, the supermarket is a material instantiation of this cyborg geography. While physical architecture cannot fully contain the subjects or the institutions of this geography, it is the setting for interactions between these people and institutions through creating a place of transaction for the acquisition of consumer products. Complex immaterial systems still require material objects: sited materialities in which the digital lands in the physical. Shelves, barcode scanners, check-out lines, signage, floor materials, credit cards, shopping carts, product packaging, and currency are all elements of a carefully considered architecture that facilitates transaction. As a design research method, I explored and vividly rendered this media geogra-phy through examining one particular transaction between an institution (the Kroger Company / dunnhumbyUSA), an individual (myself), architecture (Kroger Store #605), and material culture (a package of Little Debbie Swiss Rolls) through the logic of mass intimacy, a specific form of predictive analytics used by the Kroger Company. By examining a familiar transaction closely and with a high degree of specificity, we can see more clearly how systems of consumer tracking and surveillance, subjectification, and predictive analytics are embedded in the everyday.

These descriptions and representations of a vast yet highly specific datascape reveal relationships between “forces and forms” in a type of forensic architecture, in which an encounter with the Kroger

Company is a moment in which immaterial forces are made visible. Drawings accompanying the text attempt to reveal these immaterial qualities and render them as an unseen spatial territory that is as real as the physical spaces we encounter. By first rendering this imperceptible yet ubiquitous urbanism, we may begin to speculate how it can be a territory for further design exploration.

## **1 Introduction**

This paper explores the grocery store within an expanded notion of geography that includes both material and immaterial (data) systems. This geography is an expression of the relationship between people and things through retail transactions that are facilitated by data exchange.

## **2 Data as Medium**

It is no surprise that data is the primary medium for exchange in contemporary Western society. Both people and things can be rendered as data that is communicated and transported across vast distances; this transmutation of people and things is at once anonymous and highly specific. A string of numerical characters uniquely identifies an actual physical object, inanimate or not, regardless of size, materiality, or character. This abstraction creates a disconnect between the direct experience of the attributes of a thing and its identifier; this disconnect results in a kind of anonymity. Interestingly, because of the ubiquitous nature of data, we have internalized this condition so that it almost seems "natural" to us that a human being or a pack of Swiss Rolls can both be described similarly through the universal language of numbers.

### **2.1 Products**

A pivotal moment in the integration of data with consumer products was the introduction of the Uniform Product Code (UPC) in a Marsh's supermarket in Troy, Ohio, in 1972 (Hosoya and Schaefer, 158). The UPC allowed for the tracking of commodities through space and time within the supply chain by giving products an electronic identity. This identification enables increased accuracy in inventory, automated re-ordering, improved market analysis, quicker movement of products to and off the shelf, and a sharp reduction in human errors (Sterling 2005, 85). By analyzing inventory and sales data aided by the use of UPCs, grocery stores have realized that unexpected items like Pop Tarts and beer are top sellers before a winter storm hits (Hays 2004). The tracking of products both satisfies and increases the desire of consumers by ensuring that the right products are there at the right times.

The UPC identifies each object as a unique type - a can of Coke for example - but it cannot indicate which specific can of Coke it is. The proliferation of the use of RFIDs will further expand a culture of identifying and tracking objects. Each RFID carries a unique 96-bit identifier called the electronic product code (EPC) that can be attached to each product. RFIDs offer incredible advantages by increasing the efficiency of the supply chain, strengthening customer relationship management, and tracking products through the entire life cycle of the product.

With the increasing integration of information, many objects today may be identified as a new class of objects called "spimes," which are physical objects "regarded as material instantiations of an immaterial system" (Sterling 2005, 11). The use of UPC, EPC, and RFIDs creates a single global network of objects: the "Internet of Things." This is a radical redefinition of our relationship with objects; by uniquely identifying and inventorying products, we can track them through time and space at will.

## **2.2 People**

Individuals are increasingly known by the assemblage of information existing about them in virtual spaces. This “data body,” envisioned in cyberpunk literature in the 1980s and 1990s, created a wish image of endless possibility for individuals unfettered by physical constraints (Critical Art Ensemble 2009, 144). However, the data body is not an autonomous body that can exist apart from the physical body; in today’s world, the physical and virtual are so intertwined as to be rendered inseparable. In this context, an individual is perhaps best understood as a “spatially extended cyborg,” inhabiting a hybrid body composed of “bits and atoms” (Mitchell 2004, 3), with a reach that greatly exceeds the physical limitations of the corporeal body. Because of the immaterial nature of data, however, our usual faculties of sensate perception are inadequate for apprehending this reality.

Data is not just a medium for exchange; more specifically, it’s a medium for control (Deleuze 1995, 178-180). In our contemporary control society first identified by William Burroughs (Burroughs 1978), the business is the dominant institution of power and corporations use electronic data to instrumentalize consumers (Deleuze 1995, 180). Acting as an elaborate apparatus, big box retailers capitalize on the data portions of the body by desubjectifying an individual in order to reconstruct him or her as a member of a consumer subject (Agamben 2009). Rendered as bits of data, individuals become “dividuals” that are aggregated into abstract groups called samples and markets (Deleuze 1995, 180). Consumers are given unique identifiers and tracked just as carefully as the commodities they buy.

Marketing is an “instrument of social control” (181) designed to specifically target these consumer subjects and spur on consumption. Marketing strategies are joined with consumer data in the field of “predictive analytics,” in which data is collected and analyzed to gain insights into the identities of consumers that allow businesses to market their products more effectively (Orlowsky).

## **2.3 Transactions**

The interactions of people and objects in retail transactions are increasingly facilitated by data through online shopping, loyalty cards, and credit cards. To complete a transaction, data from individuals simultaneously embarks on multiple journeys over different durations of time. Relationships are established between physically remote institutions like card networks, card issuers, merchant acquirers, product manufacturers, data mining companies, and corporate headquarters. The seamless, opaque integration of the transfer of data into the ritual of the transaction is necessary for its full-scale deployment into ubiquity.

The use of credit cards has dramatically increased over the last ten years, with over 26.5 billion credit card transactions completed in the United States in 2010 (Nilson Report, December 2009). Unlike transactions involving paper currency, true anonymity is impossible as each swipe of the credit card is tied to a specific consumer subject, identified by his or her card number. Since they are linked to a specific individual, the particulars of transactions – time of day, frequency, types of items, locations they were purchased – achieve greater significance. By looking at transactions completed by individuals over time, data mining companies can identify important patterns and preferences. However, because the tracking is done through immaterial data transfers, we are often unaware that our new purchases betray our locations, movements, habits, and preferences.

### 3 A Cyborg Geography

Although the exchange of data is necessary to facilitate transactions between products and people, this exchange still implicates physical objects that have a material presence. The digital and the physical are inextricably linked within space, and the digital “lands” in the physical as “sited materialities” (Sassen 2003, 20). Point of sale terminals, credit cards, cable and fiber optics communications, and servers in server racks are localized entities that compose a “microenvironment with global span” through their integration with data (20). The sited materiality is an entity where the corporeal body interfaces with the digital in an intimate embodied experience.

The flow of data through sited materialities during a retail transaction allows a kind of spatial collapse as the data portions of the body simultaneously occupy locations that are vastly remote from the corporeal body’s location in space. While making a purchase inside the store, the body is spatially extended through the data trail that is registered and being registered in various databases (corporate headquarters, distribution centers, datacenters, etc.).

The integration of immaterial data with physical space, material objects, and people creates an incredibly dynamic spatial configuration unbounded by physical limitations and in constant evolution; this cyborg geography is formally indefinite and temporally unstable, transcending natural and artificial borders as it is integral with the global economy. Feedback loops implicate the digital and the physical in such a way that they are mutually constitutive, while “the same societal forces are shaping both networked and physical spaces” (Varnelis 2012, 18).

### 4 Network as Urbanism

As Mark Wigley identifies, architects have been talking about the impact of data on the traditional city since Melvin Webber and Marshall McLuhan in the 1960s (Wigley 2002). The resulting discussion of the death of the city and the loss of place tinged by nostalgia is not particularly productive. Instead, Guy Debord suggests urbanism as a force that first built the city and then subsequently unbuilds the city (Young January 11 2013).

According to Debord (1977), “Urbanism is capitalism’s seizure of the natural and human environment; developing logically into absolute domination, capitalism can and must now remake the totality of space into its own setting” (169). This remaking of space, “regulated by the imperatives of consumption,” (174) has led to the dissolution of traditional cities. In a continuation of urban processes in a control society then, we see “new types of spatializations of power” (Sassen 2003, 16-17) undertaken by businesses. These material and immaterial compositions constitute an advanced form of urbanism that transcends the spatial limits of the city.

In discussing GIS as a new paradigm for understanding the city, Leong (2001) suggests the inability for the Nolli map to make sense of the contemporary city. The traditional dichotomies of solid and void, public and private, have been undermined. Instead, “post-city” urbanism is “digital, transactional, and relational; not spatial in a traditional sense” (Young, January 11 2013). The resulting landscape reifies the “network ideology” that is representative of our time (Varnelis 2012, 11). This urbanism does not create the density found in the traditional city, but rather strategically distributes itself across vast distances as a network: systems for efficiently moving people and things through the exchange of data.

## 5 Architectural Manifestations

As identified by Varnelis, "power has reconfigured itself into network form" (11). Businesses strategically distribute the material manifestations of the corporation across the country in various instantiations. From corporate headquarters, retailers are connected via highway, rail, phone line, and internet access to their consolidation centers, regional distribution centers, datacenters, production facilities for private label brands, divisional headquarters, and big box stores. These spatial relationships are expressed materially as idiosyncratic paths in transportation and communication networks dictated by complex factors like terrain, population densities, political maneuvering, and public funding.

A retail transaction is facilitated within the architectural enclosure of the store by assembling overlapping sited materialities with global reach within the same space. In this sense, the store is an intense communications node that facilitates transaction within the network, where retail architecture acts more as conduit for flows than a container, blurring the lines between infrastructure and architecture (LeCavalier 2010).

Big box tectonics follow the logic of the market, while signage and branding are layered onto "blank, expressionless containers" (Branzi 2006) to create the aura and experience around the banal architecture of the warehouse as a "packaging machine." Emphasizing the role of architecture in communication like the duck and decorated shed, the packaging machine communicates through the construction of experience, which is an extension of the packaging and branding of products and designed to sell more (Studio Sputnik 2003). In this way, architecture becomes a tool for modulation, creating compelling consumer experiences as a form of control.

The architecture of this cyborg geography fulfills the prophecy of Archizoom's No-stop City in creating a world of bad infinity "in which human associations are ruled only by the logic of economy and rendered in terms of diagrams and growth statistics" (Aureli 2011, 20-21). As consumers, we construct this bad infinity with every swipe of our credit card.

## 6 Encounter with Mass Intimacy

The apparatus of the grocery store is so ubiquitous that in its familiarity, it is often simply assumed as a fully knowable and easily understood condition. However, the grocery store is a specific node within the network of a complex cyborg geography. The following description and representations (see images in appendix) are an exploration of this manifestation of urbanism through examining one particular retail transaction. There was nothing particularly significant about my purchase of a box of Swiss Rolls on January 25th, 2012 at 8:23pm (Figure 5).

### 6.1 Site Selection, Finishes, and Program

Store #605 is strategically located on the northern edge of the North Campus of the University of Michigan. Its physical location is determined by the ideal radii for catchment areas relative to the other Kroger stores in Ann Arbor (Figure 3). This location allows the store to effectively serve the local population while the store's prototype, one of five different types (Hayward 2009) is flexible enough to re-respond the "town and gown" dichotomy of its context. At the same time, the store is connected to corporate headquarters in Cincinnati, Ohio, division headquarters in Novi, Michigan, as well as a network of distribution centers over communication and transportation networks (Figure 1 & 2).

The store is generally no different architecturally than Kroger's data or distribution centers, except for a few finishes added to hyper-efficient big box tectonics to make the environment more palatable

to consumers. The familiar long-span trusses, wide-flange columns, and metal decking create an efficient architectural enclosure, while veneers of brick, vinyl plank flooring, VCT, and signage “dress up” the warehouse (Figure 4).

Immediately upon entry into the store, customers have to pass through a large open space with upgraded finishes. This flexible area (Figure 7) contains a Starbucks cafe kiosk as well as a series of smaller kiosks each containing specialty item like cheese, sushi, hummus, and freshly prepared meal options. Additionally, the first two aisles of the store incorporates the organic and natural foods sections (Figure 4). This mix of product offerings was strategically determined through predictive analytics to respond to local demographic tastes within Kroger’s generic prototype (Figure 7), clearly representing the values and preferences of the “urban chic,” “enterprising professionals,” and “dorms to diplomas” consumer groups that comprise the 48105 zip code (ESRI) (Figure 3).

## 6.2 Flows of People and Products

McKee Foods, based in Collegedale, Tennessee, manufactures Swiss Rolls in Stuarts Draft, Virginia, which are collected in Kroger’s consolidation centers and then shipped to the local store (Figure 1). My recent purchase was one unit of the over 157 billion units of McKee snack cakes sold since 1960 (Little Debbie 2012).

Within the store, aisles are designed for the flow of customers, with 7’ aisles allowing shoppers with carts to comfortably pass by one another. The 3’ wide check-out aisles lined with rubber guards are narrower to funnel single shoppers through the payment process in an efficient manner (Figure 4). The check-out counter’s conveyor belt, an industrial product mover, is one location where the automated processes and machinery of the manufacturing plants and distribution centers are manifested within the retail store. Veneers of durable plastic laminate and stainless steel conceal the machinery needed to operate it (Figure 5).

The cashier swipes the barcode across the optical scanner in the check-out line, instantly setting into motion a series of processes (Figure 5). Kroger’s database registers that a box of 12-pack of twin-wrapped Little Debbie Swiss Rolls snack cakes has been purchased, allowing managers and suppliers to monitor store #605’s 60,000-product inventory. My body is spatially extended as the cashier then scans the UPC on my Kroger Plus card, and the unique twelve-digit identifier links my identity to the recently liberated box of Swiss Rolls. As a dividual, I now occupy Kroger and data mining firm dunnhumbyUSA’s databases at Datacenter 101 in Columbus, Ohio (Figure 7).

In this transaction, my physical body is spatially extended further through swiping my credit card, and my data, in dialogue with other data protocols, allows me to complete a payment (Figure 6). The scale of this transaction is striking: in the three seconds it took to approve my credit card and complete the sale, the data about my purchase travels almost 4,000 miles. Later that day, the settling process would begin a different journey over three days until the purchase is applied to my account. This data is as much a part of me as the atoms that compose my physical body, yet at the time of the transaction, I was completely unaware of the agility of my extended body.

dunnhumby USA, in conjunction with the Kroger Company, has created “mass intimacy,” a proprietary approach toward predictive analytics that strives to deliver the personal connection of a mom-and-pop store while passing along the savings and efficiency of a global big box retailer

(Hayward 2009, 13). dunnhumbyUSA gives scores in 50 different categories to Swiss Rolls; this finer grain of individual data allows the product to feed into seven distinct shopper segments (Figure 7). A complex, "living" algorithm called "Rolling Ball" analyzes over 40 billion purchases in Kroger stores, including my own, to draw links between different products to determine significant combinations of products, dynamically changing over time to incorporate new products and reflect mercurial consumer tastes. Through an interface called "The Shop," McKee Foods can react to real-time trends by quickly modifying pricing, changing a marketing strategy, or altering promotions (17-33). In these ways, the inventory of items and their presentation in Store #605 are a direct result of data collection and analysis.

## 7 Conclusion

These descriptions and representations of a vast yet highly specific datascape reveal relationships between "forces and forms" in a type of forensic architecture (Weizman 2010); this encounter with the Kroger Company is a moment in which the cyborg geography of exchange is made visible. The images are a constellation that begin to map a geography of a post-city urbanism that is both physical and data through interactions between institutions, people, and material objects. By examining a familiar transaction closely and with a high degree of specificity, we can see more clearly how systems of product and consumer surveillance, urban processes, and predictive analytics are embedded in the everyday. The drawings attempt to reveal these immaterial qualities and render them as an unseen spatial territory that is as real as the physical spaces we encounter.

Elements of architecture like site selection, finishes, and program are specific manifestations of this cyborg geography instantiated in the sited materiality of the grocery store. The store serves as a conduit for flows of both people and objects, in both a physical and a data sense, in creating building that is both architecture and infrastructure. The grocery is one instance within the familiar contemporary post-city landscape resulting from processes of urbanism that are remaking our natural and human environment. By first rendering this imperceptible yet ubiquitous urbanism, we may begin to speculate how it can be a territory for further design exploration.

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## Appendix



Figure 1. US map of the cyborg geography

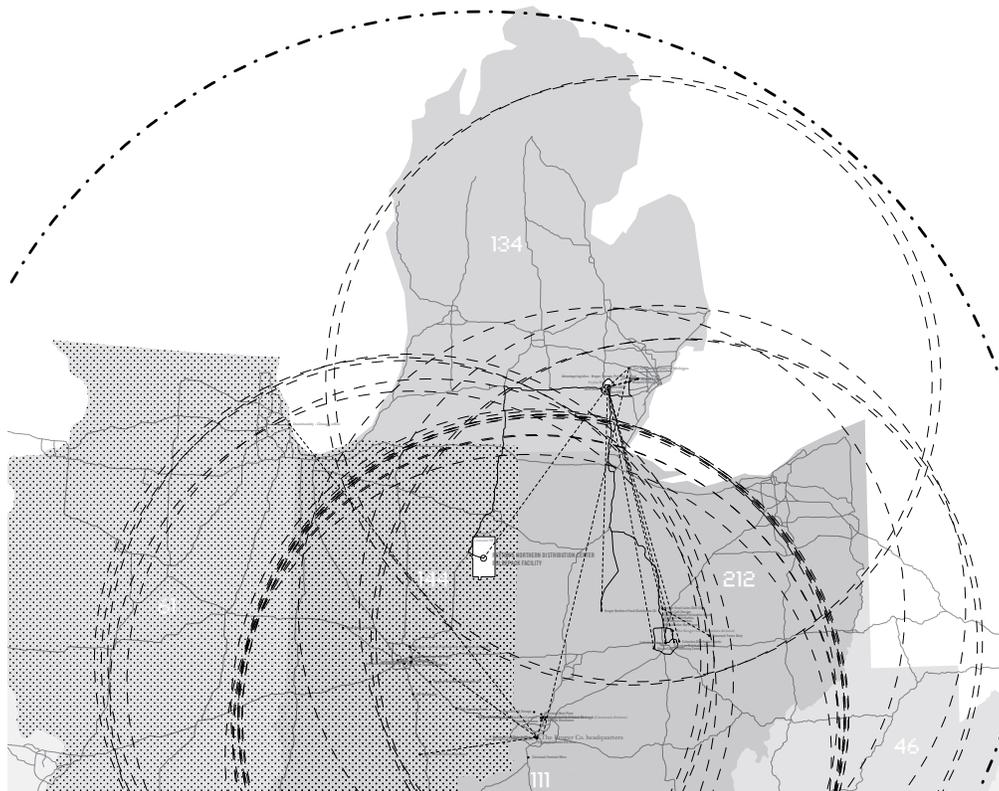


Figure 2. Regional map of the cyborg geography

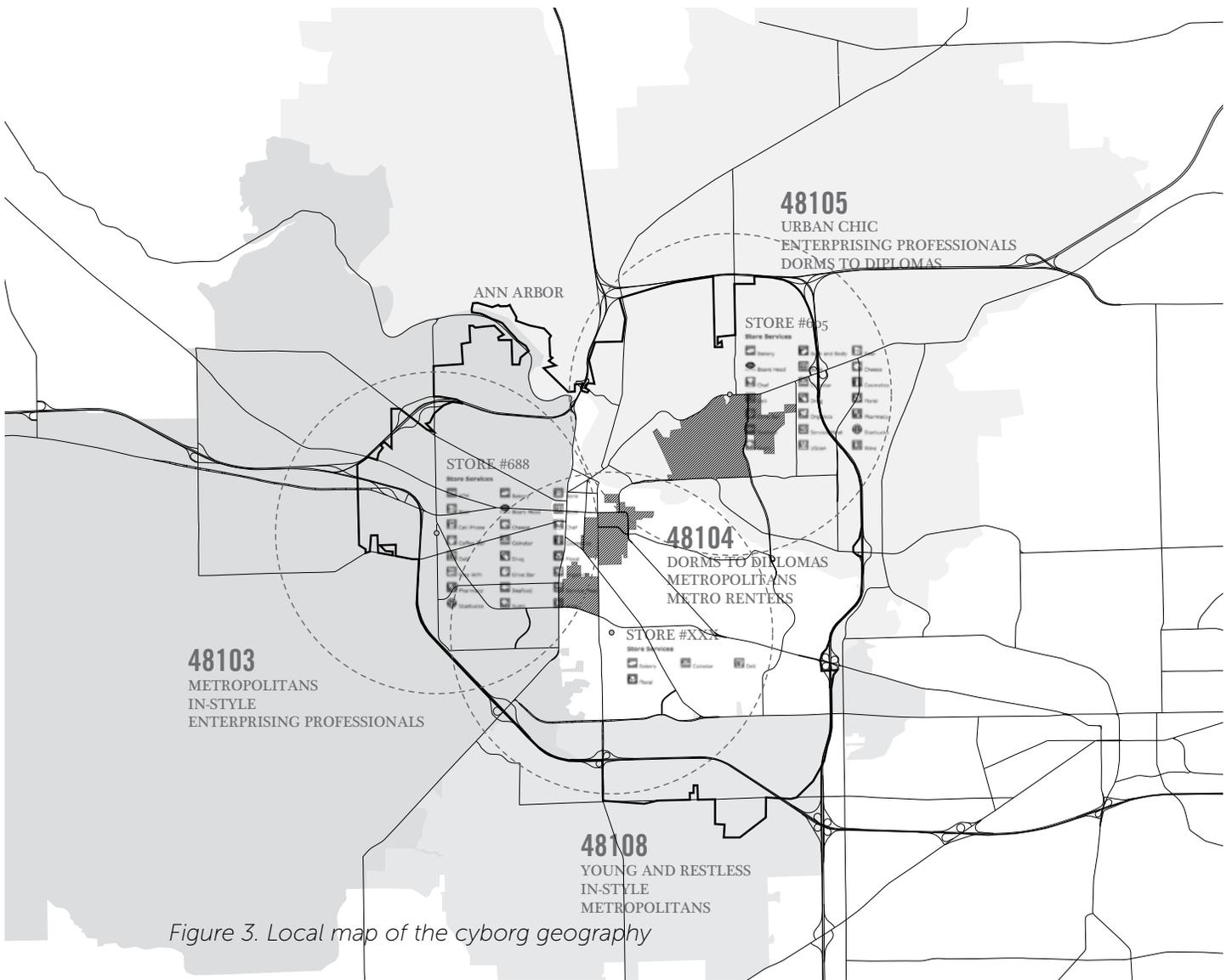


Figure 3. Local map of the cyborg geography

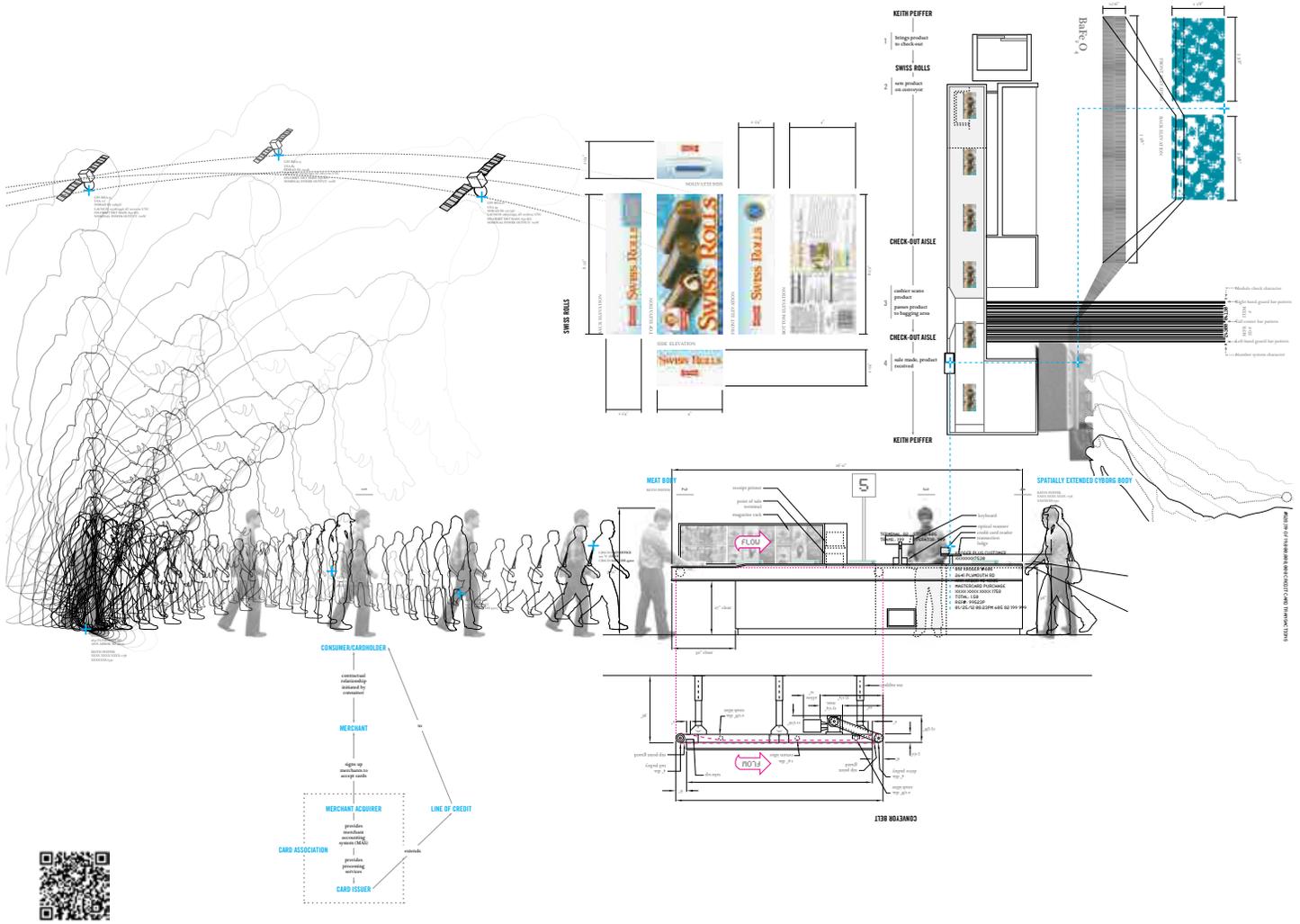


Figure 5. Transaction #199 (January 25th at 8:23 PM)





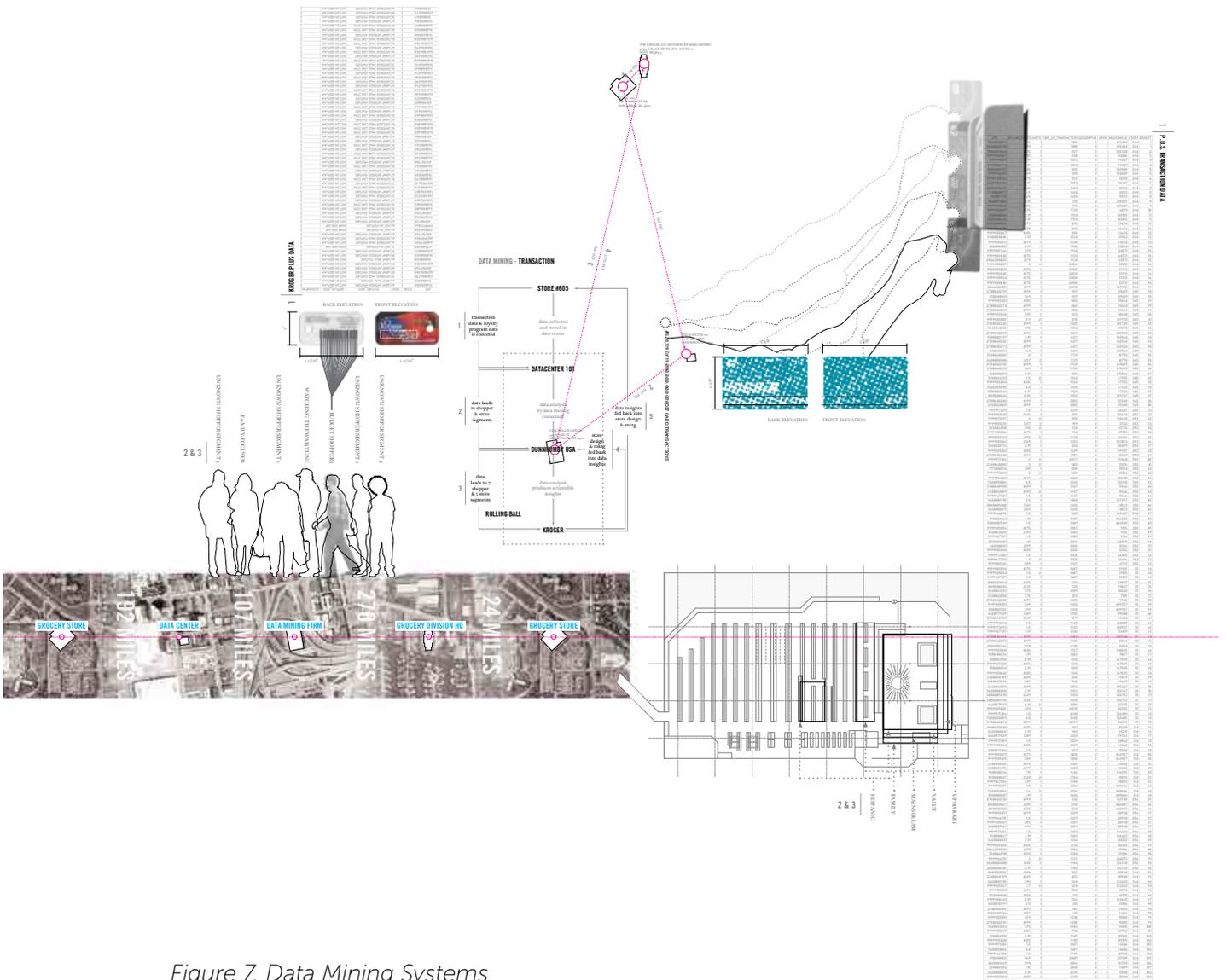


Figure 7. Data Mining Systems

## URBAN MEDIA GEOGRAPHIES: INTERFACING UBIQUITOUS COMPUTING WITH THE PHYSICALITY OF URBAN SPACE

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### **Abstract**

This paper aims at establishing an associative relation between the proliferating digital technologies, the physical context of the urban fabric, its inhabitants and the multiplicity of their activities as an emergent phenomenon of contemporary urbanity. It introduces a methodological framework for the development of an interactive urban system, installed within urban open public spaces, in the form of a hybrid interface that can serve as a platform designated for both citizens and municipal planning authorities. This particular system harnesses and analyzes real-time, quantifiable traces of diverse everyday urban activities and subsequently feeds this analyzed information back in a looped manner to citizens via the proposed public interfaces. Subsequently they can observe, interact and declare their own activity-driven, customized spatial and infrastructural usage and transformation alternatives. In other words, the platform does not only imply interaction at an information exchange level, but rather aims to provoke a complex variety of inter-relations between the social and the technological via real-time spatial adaptation and customization possibilities. The proposal focuses towards a system that is perceived as an integral part of the urban environment and less on the development of a specialized application or website platform that only overlays an additional virtual layer to the already existing ones in the contemporary cities. By devising such a socio-technical interaction-driven approach towards urbanism, our proposal intends to deploy a trans-scalar understanding of the emergent relations between people, space and ambient technologies that can, further, enrich the urban pluralities within the twenty-first century city.

*Keywords: Urban systems; Interaction design; Urban computing; Real-time city;*

*Media geography; Ambient interface*

## 1 Introduction

Cities are manifestations of multi-relational networks, which perpetually become far more complex as we experience a shift from industrial economy to one driven by the forces of (digital) information and services. Two of the most critical phenomena that drive the proliferating complexity of the contemporary urban configurations can, on the one hand be identified in the rapid global urbanization processes and on the other, in the perpetual pervasiveness of information technologies within the urban milieu. Both of these phenomena necessitate us to rethink about the complex urban-medial relations constantly emerging, and the way in which they are expressed within the various urban environments.

In more specific terms, owing to the acceleration of global urbanization processes we are currently encountered with increasingly overlapping urban populations as compared to rural ones. Already since 2007, more than half of the world's population lives in cities and, according to UN predictions, by 2050 it is estimated that this percentage will rise up to 70% (United Nations, 2007). As a result, humans are already – and progressively become – an “urban species” (Moere and Hill 2012).

Nevertheless, apart from the consecutive emergence of new urban agglomerations, most of the Western and progressively many of the non-Western societies have shifted towards an economy, driven by (digital) information and services. An apparent repercussion of such a shift can be identified in the amounts of tangible patterns and traces regarding human urban activities. Industry-driven societies have been characterized by a plethora of visible activity patterns in the physical spaces of the city, reflecting the production streams (Moere and Hill 2012). But, as ambient technologies subtly diffuse within the urban environments the “by-products” of human activity, in turn, become less and less traceable. These digital, invisible traces – representing the contemporary city's “pulse” (Leach 2009) – figuratively appear as an additional, intangible layer hovering above the urban fabric.

We argue, though, that this particular perception of ICT media and the derivative ambient data as a superimposed layer over the existing city, implicitly suggests that information is incapable of drastically affecting the urban layout. Such an overlaid ontology presupposes the dominance of the built components over the informational ones, rather than the latter being part of or equal to them. Driven from such perspective, in this paper, we challenge the idea for a model of urban systems in which the diverse amounts of data derived from social activities become equally co-constituting with the physical environments they belong to. We propose a methodological framework – currently in progress as part of an on-going PhD research conducted by the authors – for a complex urban system plugged into existing open-air public spaces, which receives data as real-time streams and acts upon processed meta-data. The quantifiable digital traces of urban activities are constantly fed back in a looped manner to both citizens and municipal planning authorities, via public interfaces, providing them the opportunity to develop an active dialogue upon diverse datasets, with qualitative outcomes. However, as cities comprise not only infrastructure, but also people that inhabit them, this research intends to focus mostly on the social and behavioral impact that the proposed system can instigate at different scales.

## 2 Extracting the Urban Pluralities: The City as a Real-Time Relational Model of Urban Data

Despite the affluence of paradigms engaging urban systems that are based upon pervasive computational technologies, there is a certain amount of ambiguity regarding what the term “urban system” essentially expresses. It is, thus, important to firstly set the theoretical underpinnings of how we conceptually perceive the urban system in our proposal. The following paragraphs outline such theoretical foundations and, further, delineate the essential characteristics of the PACT design framework, as a methodological tool capable of identifying user-centric variables that can be utilized for the extraction of the system’s requirements.

### 2.1 The Notion of “Urban System”

In general, a system – derived from the Greek word **σύστημα** (systēma) – can be characterized as a set of inter-related, yet autonomous elements. According to Harvey, a system can be more accurately defined as a set of elements with certain variable characteristics (attributes), along with a set of relations between these element-attributes, as well as a set of relations between the element-attributes and the environment (Harvey 1973). It is this particular characteristic that diversifies an open from a closed system. Open systems interact with their environments while closed ones do not. Complex systems, including cities, are necessarily open, meaning that all their constituent elements along with their corresponding attributes can change in time owing to the inter-relations developed between them, as well as between the system they constitute as a whole and its environment. Within this approach, our aim is to perceive the proposed urban system as a constituent part of the city, embedded in the physical fabric. In this way and by its physical presence, it can allow for more tangible interactions than a virtually controlled application (e.g. mobile phone application, web blog etc.), pertaining to incessantly looped information derived from urban components of different scales and natures. Such a system notion, further, implies the necessity for a relational model of diverse patterns of urban activities. Unlike the current prevailing approach of treating various quantifiable activity traces (e.g. occupancy levels, transport and mobility patterns, energy data etc) as individual systems, it is important to begin studying the impact of these traces as a result of the interdependent relations that can be established between the diverse infrastructures and people, in a more sustainable and interactive manner. Hence, we believe that the aggregate of the interconnected sub-systems will start performing as an organism that adapts better to its environment and caters to the needs of the citizens, while further enhancing the efficiency and services of the city, in which the sub-systems are embedded.

### 2.2 Identifying the Trans-scalar Variables: The PACT Design Framework

A subsequent challenge emerging from the aforementioned relational approach is to determine a methodological tool capable of identifying variables within a user-centric and spatial perspective, so that the system better addresses the citizens’ needs. A generic tool supporting such a relational perspective, widely used in the field of interaction design, is the PACT design framework, which is an acronym for People, Activities, Context and Technologies (Benyon, Turner and Turner 2005). This particular framework creates a synergy of the four components by establishing a single statement; people undertake activities in (certain) contexts using technologies (Figure 1).

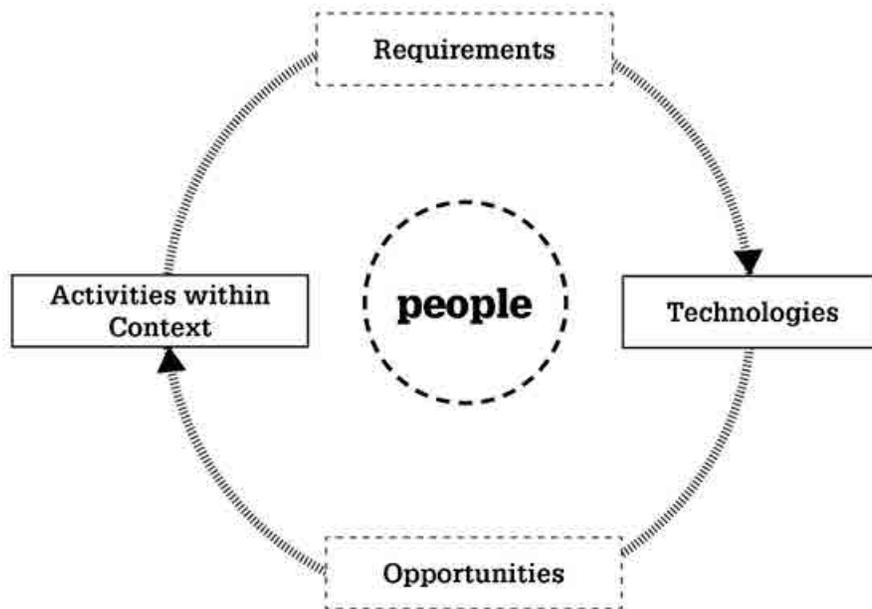


Figure 1.  
The People, Activities, Context, Technologies (PACT) design framework's rationale.

It, thus, qualifies as a logical concept to sustainably study the interdependent relations between the four components. In our case, the application of the PACT analysis-driven tool is intended to derive an understanding of the immediate urban context surrounding the proposed system in its entirety (different users, kinds of activities and the context) and to, subsequently, derive a rationale towards a technological articulation needed to support activity typologies. This is of major importance, since we are aiming at a case-specific urban system. Urban data stemming from occupancy levels of a specific public space, or demographics can provide an essential insight into the operational components, especially those referring to people and their activities in the case study areas. The activities taking place within their corresponding contexts give rise to a set of technological requirements. In turn, any technological change affects the manner in which the activity within a context is performed. Though the exact elaborations as regards this design framework fall out of the intentions of this paper, what is important to be comprehended is this particular cyclic nature of interactivity among the four components, which is vital for the attainment of a successful socio-technical urban system.

### 3 The Rationale of the Interactive Urban System

Founded upon the aforementioned theoretical principles, the proposed interactive urban platform aims at exploring an emergent form of media geography that reinforces the mutual relations between the social dynamics of the city and the ambient embedded technologies. Its goal and principal challenge is to provide a physical, responsive interface that goes beyond attractive visualizations of crowd-sourced information, towards a system that can trigger behavioral and spatial adaptations facilitated by the digital traces of physical urban activities. The system's design philosophy is, thus, established on these interlocking loops between the physical and the digital – the social and the technological – while incorporating three fundamental functions: urban data sensing and gathering, indexed data simulation and visualization and, ultimately, feedback loops via public interfaces that can drive real-time infrastructural adaptations within a certain impact radius (Figure 2).

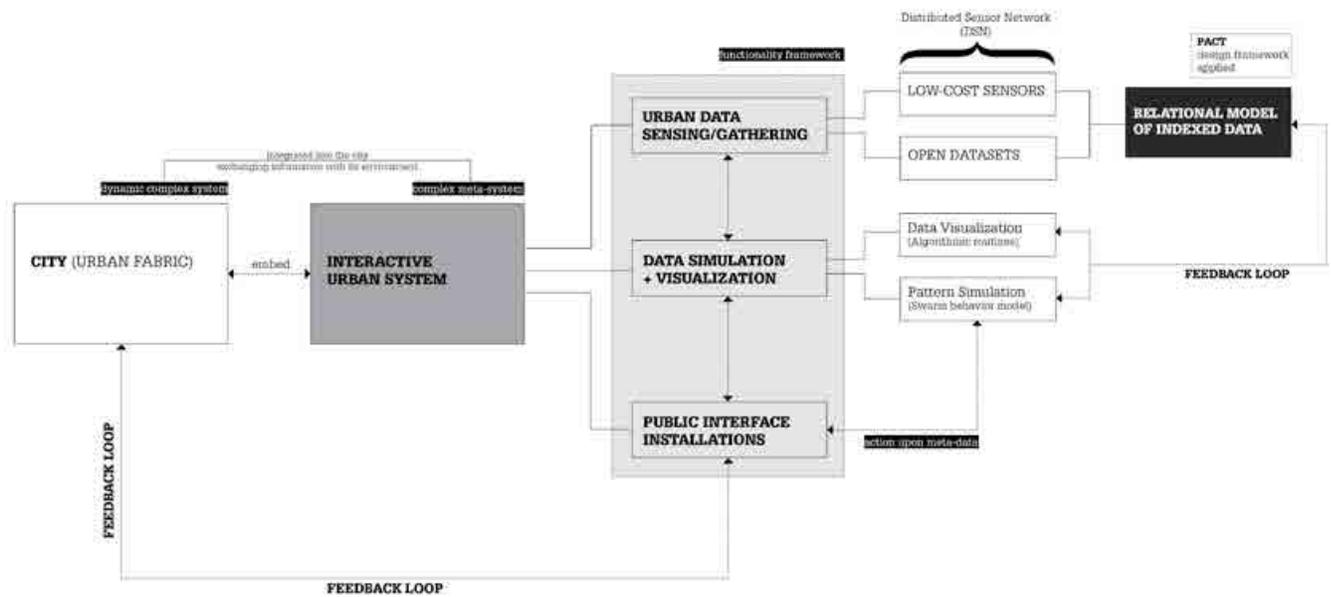


Figure 2. Diagram of the general functionality framework for the proposed urban system.

The platform embodies a physical sensing network consisting of low-cost sensors, which are distributed across a certain area. To keep the cost level as low as possible, the system utilizes existing open datasets from governmental databases and open-source soft- and hardware (Processing programming language, Arduino and Servo motors). Through these procedures, the goal is to create a relational model of the indexed datasets, so that the impact on the urban fabric, derived from quantifiable measurements, will not only respond to individual parameters, but would rather refer to the repercussions resulting from a relation that can be established between different elements and attributes of the city (e.g. between people and traffic levels, between people and environmental conditions etc). The system can, further, engulf variable quantifiable attributes from its immediate environment, while remaining open-ended for plugging in different parameters that address emergent patterns.

Following the data harnessing process, the system subsequently simulates, analyses and visualizes the digital activity traces, with the assistance of customized scripted routines. This procedure is developed not in a linear, but rather in an iterative way, where urban data are constantly fed into the software platform in real-time and the visualized outcomes are ultimately communicated via public interfaces. The traced data monitored in our research, specifically, comprise occupancy levels in different time spans, transport and mobility patterns as well as real-time energy data (e.g. CO2 emissions, electricity usage etc). In turn, by illustrating the processed quantifiable measurements on the public interfaces, we expect qualitative feedback from the citizens themselves who integrally co-constitute the perpetual variety of information sets. To simulate the human activity patterns within the study areas, a swarm-behavior model is applied, based upon the principles of C. Reynolds' boid behaviors (Reynolds 1987). Such a model depicts, in general, the behavioral aspects of a group of agents that may be able to perform tasks without detailed representations of their immediate environment, as well as other neighboring agents (Biloria 2012). Despite the fact that originally the model was devised to simulate complex natural systems, when applied in an urban context it needs to adapt to the artificiality of the city. The application of swarm logic, however, as a simulation tool to urbanism, favors the potential to explore organizational behaviors that evolve in time, derived from localized simple rules of action.

#### 4 Case Study: A Potential Operational Scenario

Following the analysis of the rationale and fundamental principles of the interactive urban system, this section speculates on a potential implementation scenario in a network of public spaces in Rotterdam. Although this particular site comprises a contemporary Western urban configuration, two distinguishing aspects characterize Rotterdam as a challenging case study. Firstly, its multicultural diversity inasmuch as people from 173, mostly non-Western, different nationalities constitute half of the city's inhabitants (in 2011, according to the Dutch Center for Research and Statistics) and, secondly, its ground-up reconstruction and re-habitation after the sheer devastation during World War II. Such a multifaceted context can establish an influential field to attain a trans-scalar understanding of the multi-relational networks between people and space, utilizing the ambient urban platform.

Respectively, the interactive system is context-related, meaning that each specific area establishes different requirements and parameters that are being monitored. The nature of these quantifiable data determines accordingly which of the two interacting parties with the system – namely the municipal planning authorities and the citizens – acts upon what kind of information. More specifically, strategic infrastructural transformations pertaining to data derived from occupancy levels and mobility patterns, is substantially coordinated by the former; while the latter have the opportunity to declare through the system their activity-driven customized spatial alternatives.

The meaningful conclusions drawn by the space occupancy and usage configure the design principles and intervention recommendations that are, further, incorporated into the system. In this way, the citizens are provided with an expandable library of locally oriented design interventions, the boundaries of which are set by the planning authorities. Subsequently, citizens declare spatial customization alternatives adjusted to the aforementioned system boundaries that, depending on each urban area, can range from material, color and light levels arrangements to enhancements of vacant or latent spaces in the city (a phenomenon increasingly emerging in Rotterdam, but also observed in many contemporary metropolises worldwide). The planning authorities further, evaluate these customization alternatives and test their efficiency by utilizing the previously mentioned swarm-based simulation methods. Within such a framework they can be provided with an "artificial planning experience" of the repercussions that these spatial alternatives have within a specific impact radius, in a relatively short amount of time (Portugali 2000). Depending on the nature of the design alternatives, spatial and infrastructural transformations take place either in real-time or in a gradual pace. In turn, these urban transformations will lead to new emergent patterns, constantly driving the process in a looped manner. This multiplicity of entanglements between citizens and planners allows for the emergence of collectively defined urban re-configurations, facilitated by digital systems (Figure 3).

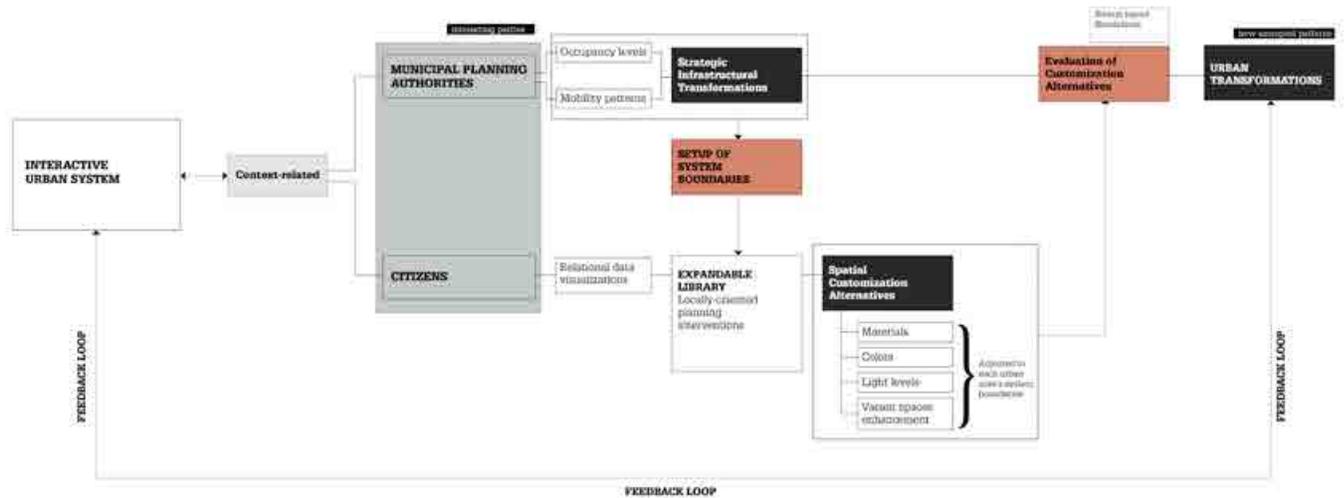


Figure 3. Operational diagram of the interactive urban system

## 5 Conclusions

The Urban Media Geographies proposal intends to interactively transform the physical urban fabric with the assistance of a dedicated system functioning as an interface to digital information, derived from social dynamics. Though such technological applications become increasingly neutral in the sense of the internal pluralities currently emerging in the contemporary urban environments, what we are aiming at through our proposal is to extract the general characteristics stemming from such variable cultural urban hubs. Following that, the derived parameters can drive our proposed installations, so that a case-specific system emerges.

We argued about the significance of physical presence within the urban fabric as a fundamental attribute of such a system, so that it provokes a hybrid interlocking between the immaterial flows of information and the material space of the city. The challenge is, thus, to provide interfaces that endow citizens with agency, rather than just giving them back bare data mappings. Nevertheless, it is crucial that municipal planning authorities also operate these interactive systems, in order to provide certain frameworks and boundaries within which citizens can declare their alternatives. Subsequently, our proposal does not aim at an absolute bottom-up or top-down decision-making strategy for the city, but instead favors a merger of both professional proposals and everyday people's suggestions, as an emergent hybrid approach towards urban design. The Urban Media Geographies proposal, thus, intends to develop a methodological design framework that can cater to both Western and non-Western urban environments, facilitated by hybrid socio-technical systems and decision-making strategies, as a sustainable approach for the twenty-first century city.

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## WORKSHOPS

MediaCities will feature four workshops that will introduce skills and themes relevant to this year's conference focus on multiplicities.

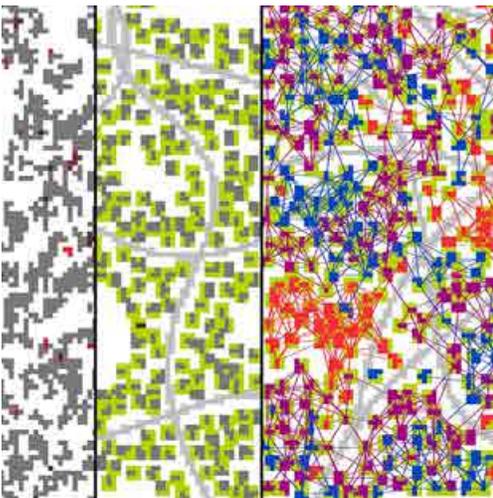
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AND JOSEPH REDWOOD-MARTINEZ**  
Neurovision
  
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Digital Media in Urban Spaces – Mapping and Visualization

## INTERACTIVE PLANNING ISTANBUL

LILA PANAHIKAZEMI AND ANDREA ROSSI

Traditional design and urban planning tools seem everyday less adequate to deal with the complexity of contemporary cities, especially in the context of informal settlements. The aim of the workshop is to explore the emergent ecologies of interaction between socio-economical relationships and the structure of a city. This will be achieved through the creation of dynamic computational models, which will allow to simulate urban growth, and subsequently to build up possible scenarios of development. The final goal is the construction of an "interactive planning" tool, that will enable to tackle the complex contemporary urban situations in a flexible way. The aim of the workshop is to attempt to bridge this gap, exploring the emergent ecologies of interaction between socio-economical relationships and the structure of a city. In this search, the use of computational design tools helps in simulating the underlying dynamics of formation and functioning of the contemporary urbanities, maintaining their plurality of interactions and correlations that give rise to their complexity.



The city of Istanbul offers a unique combination of geographical, historical, socio-economical and political factors that shaped its urban structure. In the last century, the city have been involved in an extremely rapid process of urbanization, that totally changed the aspect of the city; this process has been mainly powered from the bottom-up decisions and needs of immigrants, that built extensive squatter neighbourhoods all over the city. Understanding the formation of these unique patterns of settlement requires the construction of a complex set of relational tools. The aim of the workshop is exactly to build these tools, that will allow firstly to simulate the urban growth of these settlements, and subsequently to build up scenarios of development. The final goal is the construction of an "interactive planning" tool, that will enable to tackle the complex contemporary urban situations in a flexible and dynamic way.

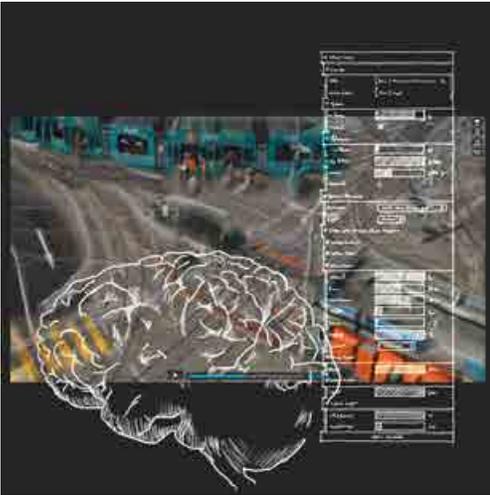
This relational tool will be developed in the coding environment of Processing. The participants will be introduced to simple and complex techniques of urban simulation, and subsequently develop a simulation for a specific neighbourhood in Istanbul. At the end, clues about the adaptation of simulations to different environments will be given. Previous experience with scripting software is not necessary, but preferred. Each participant should bring his/her own laptop with the necessary software installed (open-source and/or demo versions of the software will be available).

### **Lila PanahiKazemi and Andrea Rossi**

Lila PanahiKazemi and Andrea Rossi are two master students at the Dessau Institute of Architecture, where they are developing their thesis "Spatializing The Social" on computational design strategies for informal areas. Lila holds an Architecture bachelor from Leeds Metropolitan University, where she also attended one year of MArch on bioregionalism. Andrea holds an Architecture bachelor from Politecnico di Milano and he participated to various workshops on computational tools. Together they founded Co\_Des, a peerToPeer educational group based in Dessau, organizing workshops on computational tools. Their work have recently been presented at the XIII Venice Biennale and at the EnCodingArchitecture conference at CMU Pittsburgh. For more information: [temporaryautonomousarchitecture.blogspot.it](http://temporaryautonomousarchitecture.blogspot.it)

## NEUROVISION

**URSULA DAMM, MARTIN SCHNEIDER, ELENA GILBERT  
AND JOSEPH REDWOOD-MARTINEZ**



NeuroVision is a web-based sandbox for shader-based video processing. You can use it to transform video streams from mobile devices, webcams and video platforms into generative works of art. We will take you on a field trip and show you how to capture urban motion, colors, flows and rhythms on video. You will learn how to process videos with Neural Networks and use the NeuroVision Sandbox as an artistic tool for your own video-recordings. You will use the OpenGL Shading Language inside the NeuroVision Sandbox. No special skills are required, but some coding literacy is recommended. For more information: [perceptify.com/neurovision](http://perceptify.com/neurovision).

### **Ursula Damm**

Ursula Damm is media artist and professor for Media Environments at the Bauhaus University in Weimar, where she is also involved in establishing the Digital Bauhaus Lab. She envisioned the Neurovision Sandbox and uses it as part of her artistic process.

### **Martin Schneider**

Martin Schneider is a freelancer with a background in media technology and cognitive science. He works at Bitcraft Lab at the intersection of science, craft and computation. In collaboration with Ursula Damm he created the Neurovision Sandbox as a tool for generative video processing.

## NEO-PROVINCIALISM: NEW LIFE IN DEAD AND DYING URBAN MILIEUX

ELENA GILBERT AND JOSEPH REDWOOD-MARTINEZ



We would like to propose the term “neo provincialism” to characterize a tendency within recent developments that maneuver in such a way so as to ameliorate the supposed problems of urban life by way of implementing something of a pre-industrial provincialism within the urban psyche and/or urban fabric. We will host a knowledge-share workshop at MediaCities with the intent to chart out and complicate the terrain of neo-provincialism. This workshop will make possible a line of inquiry connecting cybernetics, urban agriculture, and neo-provincialism in relation to their adjacent spatial and xeno-spatial implications. [neoprovincialism.tumblr.com](http://neoprovincialism.tumblr.com)

### **Elena Gilbert**

Elena Gilbert is an American-German artist and curator based in Berlin, Germany and Bordeaux, France. She is currently an assistant curator of the Maldives Pavilion at the 55th Venice Biennale on the theme of ecological romanticism.

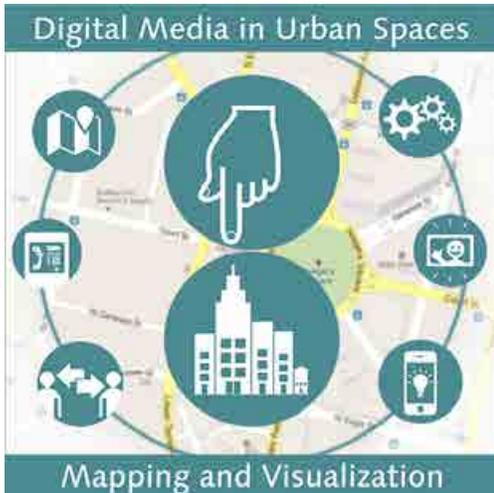
### **Joseph Redwood-Martinez**

Joseph Redwood-Martinez is an artist, writer, and filmmaker from the United States. He recently finished a feature-length documentary about an ecological restoration project in Haiti and is currently working on a documentary looking critically at the implications of urban agriculture in various cities around the world. [onedayeverythingwillbefree.com](http://onedayeverythingwillbefree.com)

## DIGITAL MEDIA IN URBAN SPACES – MAPPING AND VISUALIZATION

**JOATAN PREIS DUTRA, IVANA RAQUEL EBEL AND GABRIEL RAUSCH**

This workshop looks into the urban scenario in order to identify the presence of digital media in public spaces, based on a methodology for empirical research using GPS and geo-tagging techniques to categorize items under similar characteristics and functions. Categories allow an understanding of the role on digital media in urban scenarios, based on concepts of communication theory, soft urbanism, mediatization and new media. The practical part takes the participants to selected areas of Buffalo. After collecting data, there will be an introduction about how to prepare, visualize and analyze the data in interactive applications.



### **Joatan Preis Dutra**

Joatan Preis Dutra is a PhD candidate in Media at the Bauhaus University Weimar. He holds a Masters degree in Digital Media (Bremen, 2011) and a Masters degree in Multimedia Production (Kiel, 2006). He is currently lecturing courses for Masters students in the Faculty of Media.

### **Ivana Raquel Ebel**

Ivana Ebel is a PhD candidate at Leipzig University, with a Masters degree in Digital Media (Bremen, 2011), researching visual rhetoric, data visualization and mobile media. In the journalistic field, she collects almost 20 years of experience in several media, such as radio, television, printed media and internet content.

### **Gabriel Rausch**

Gabriel Rausch is a graduate designer (Weimar, 2011) and lectures at the Bauhaus University Weimar, Faculty of Media, under the Chair of Interface Design as a staff member and as an associate lecturer at FH Arnstadt college, within the sector of web development and web applications.

## EXHIBITION

MEDIACITIES will feature commissioned urban works, results of an international call for proposals. The conference program features an opening reception for the works at a pop-up gallery in downtown Buffalo.

It is by now commonplace that urban life has become entangled with a range of mobile, embedded, networked and distributed media, communications and information technologies. From local interactions between online worlds and those of the street, sidewalk and storefront; to large-scale participatory media events distributed across the space of the city; to regional infrastructural conditions that contest and conflict with national boundaries; to global flows from the developed to the developing world carrying potential for significant local impact: our interactions with and through these technologies increasingly shape how we experience the city and the choices we make there. This exhibition presents four artworks that address these entanglements across local, regional, national and global scales – spaces of appearance, of exchange, and of identity.

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Border Bumping
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Street Ghosts
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The Garden of Virtual Kinship
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City Lights Orchestra

## BORDER BUMPING

JULIAN OLIVER

Border Bumping is a work of “dis-locative” media that situates cellular telecommunications infrastructure as a disruptive force, challenging the integrity of national borders. As we traverse borders our cellular devices hop from network to network across neighboring territories, often before or after we ourselves have arrived. These moments, of our device operating in one territory whilst our body continues in another, can be seen to produce a new and contradictory terrain for action. Running a freely available, custom-built smartphone application, Border Bumping agents collect cell tower and location data as they traverse national borders in trains, cars, buses, boats or on foot. Moments of discrepancy at the edges are logged and uploaded to the central Border Bumping server that generates maps of these fluctuating border conditions.

**Julian Oliver** is a New Zealander, Critical Engineer and artist based in Berlin. His projects and the occasional paper have been presented at many museums, international electronic-art events and conferences, including the Tate Modern, Transmediale, Ars Electronica, FILE and the Japan Media Arts Festival. Julian’s work has received several awards, most notably a Golden Nica at Prix Ars Electronica 2011 for the project Newstweek.

Julian has given numerous workshops and master classes in software art, creative hacking, data forensics, computer networking, object-oriented programming for artists, augmented reality, virtual architecture, artistic game-development, information visualisation, UNIX/Linux and open source development practices worldwide. Julian is an advocate of Free and Open Source Software in education.



## STREET GHOSTS

PAOLO CIRIO

Street Ghosts examines what happens when fragments of life online are transposed to the space of the city street. Life-sized pictures of people found on Google's Street View are printed and posted at the same spot where they were taken. The posters are printed in color on thin paper, cut along the outline, and then affixed with wheatpaste on the walls of public buildings at the precise spot on the wall where they appear in Google's Street View image. Street Ghosts reveals multiple aesthetic, biopolitical, tactical and legal issues that emerge when the real and the virtual take place in the city.

**Paolo Cirio** works as a media artist in various fields: net-art, street-art, video-art, software-art and transmedia fictions. His primary inspiration is in corporate and state interventions through the tactical use of information power, which is depicted and interpreted in his radical and controversial art works. Paolo carves information flows through the re-contextualisation, manipulation and dissemination of data via various media. His artistic work explores the social, political and economic influence of information, through the media and techniques necessary for spreading it. He received the Ars Electronica Award of Distinction, Interactive Art in 2011 and a Transmediale 2008 award. His controversial projects have been covered by CNN, La Fox, The Age, Der Spiegel, Libération, and Apple Daily HK.



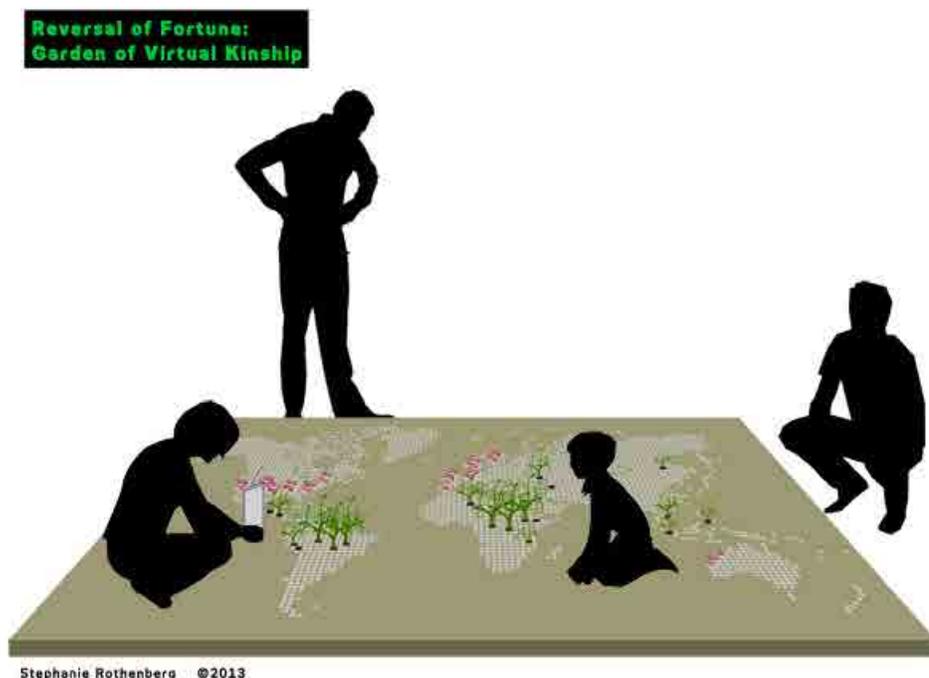
## THE GARDEN OF VIRTUAL KINSHIP

STEPHANIE ROTHENBERG

A garden existing in both the physical and virtual worlds is situated on a walkable platform with a digital irrigation system underneath. The amount of water and light the plants receive is dependent on investment information received from popular microfinance websites such as Kiva.org. Successful entrepreneurial ventures trigger appropriate nourishment, while failed ventures may lead to dying plants, making visible the circulation of finance as it is exchanged from the developed to developing world. QR codes beside each plant allow visitors to access internet information feeding the irrigation system. Through the poetic gesture of a garden, the complex relationships between human life and economic growth within these new alternative economic models are brought to the forefront.

**Stephanie Rothenberg** is an interdisciplinary artist engaging participatory performance, installation and networked media. Through provocative interactions her work explores new models of outsourced labor and the power dynamics and structural relationships between contemporary visions of utopian urbanization and real world economic, political and environmental factors. Her work has been exhibited at venues including Whitney Museum Artport, Sundance Film Festival and Transmediale.

Irrigation system design and fabrication: Byron Rich and Bobby Gryzynger.



## CITY LIGHTS ORCHESTRA

ANTOINE SCHMITT

City Lights Orchestra is an open visual symphony for the windows of the city. At night, each computer connected to the Internet illuminates the window of its office or of the home, and blinks, pulsates, beats, fades in and out, each according to its own score, but all in rhythm with all the others. The smartphones in the street do the same. Anyone can participate at anytime: the symphony is composed to accept an unlimited number of participants. The whole city becomes the orchestra: both spectator and interpreter of the visual symphony that is playing. It is a global city experience.

Visual artist **Antoine Schmitt** creates installations to address the processes of movement and question their intrinsic problematics of plastic, philosophical or social nature. Programming is his main material. His work has received several awards and has been widely exhibited in international art festivals. He is represented by Galerie Charlot (Paris).



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