

**Locative Media: From Transcendental Technologies to Socio-
Formative Spheres**

An Examination of the Interface between Place, Agent and Locative
Media

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Abstract

This thesis is a *theoretical-empirical* study that investigates the consequences and implications of adopting locative media technologies in everyday situations, paying particular attention to the potential strengthening of relationships between locative media and spatial practices of architecture and urban studies.

Locative Media is a type of media technology that relates information to location/place, provides sites and occasions for the development of new forms of environmental knowing, spatial and cultural understandings, and arguably constructs new spatial relations with place, place-experience and sense of place.

Although there is a vast literature on the socio-spatial and cultural implications of media technologies, social media, social networking sites and other applications accessed through the Internet, there are limited numbers of studies that explore the shift in the ways we understand and relate to virtual materials/information following the emergence of location-based technology, and how those technologies might affect the conventional ways we develop relationships/associations with location/places, or perceive places, or understand spatiality.

Tracing the emergence of locative media and the new implications of map/representation, the thesis takes locative media as the *subject under scrutiny* and investigates the assemblage and interrelationships of the three main ingredients of *place/locative media/agent*.

The interrelationship of those three ingredients and the social and behavioural norms of using Locative media in real time is explored through an empirical lens using two case studies (individuals using Foursquare/Streetmuseum applications), where three main categories of locative media applications (urban annotation/tagging applications, user-generated maps and social networking applications) are explored. The findings of empirical studies, and issues regarding implications of locative media, are then categorized into thematic chapters: locative media and Image of place, Place-making potentials of new media technologies, locative media and alternative flexible forms of sociability, and finally possibilities of relational place-understanding: In-group experiences.

Since the field of locative media is very new, theories and ways of discussing related phenomenon are not yet strongly developed: thus whilst examining existing cases empirically, this thesis also contributes to on-going theoretical discourses regarding place-understanding after new media technologies (tracking the change in place-understanding), and the interconnected issues of spatiality resulting from mediation, embodiment, mobility, technology, and community. Therefore the findings of the empirical studies feed into the process of developing related theories, and construct an argument that locative media could be considered as both *Transcendental Technologies* (technologies that transcend spatiality, geography and territory) and *Socio-Formative Spheres* (technologies that form socio-spatial interactions) based on the frames of observation. It also provides an insight into the possible ways that new media technologies can be applied as tools or mediums for architects and urban planners to rewrite the city, to communicate with communities of users, or to adopt those media platforms as site analysis mediums, tools for collecting and sharing site-related information in new, practical ways.

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I would like to express my gratitude to my parents, for teaching me in life and for always having confidence and belief in me; those who have supported me all through my life mentally, emotionally and financially. I would like to thank my dear friends, for being thought-provoking, encouraging and believing companions, throughout my four years in Sheffield: Sukaina Almousa, Hossein Montazeri, Lakshmi Priya Rajendran, Ruxandra Berinde and Gloria Vargas.

Without the support and encouragement of those mentioned above, this research would not have been possible.

Preface

This research project is the product of a number of particular yet different circumstances. Many motivations and issues have influenced this research. But I can say that the seeds defining this PhD were planted during my postgraduate study at the Bartlett School of Architecture, University College London, where I was exposed to theoretical thinking about technology and how it possibly frames our understanding of reality (for example, by affecting embodiment, temporality and spatiality). Reading and reflecting on theories developed by French philosophers Deleuze and Guattari—in particular their theories of relational understanding of place and their concept of assemblage—fundamentally affected the way I see the world around me. The consequences of that philosophical and phenomenological changed the way I put myself in relation to the world, and encouraged me to look for similar instances and examples in daily life where technologies can similarly frame understanding of place/place-attachement and spatiality. The other issue that encouraged me to explore media technologies was my personal experience with media technologies: as an international student from Iran living in a new environment, I automatically was looking for/exploring new ways and tools to make myself familiar with the new environment, and new media technologies (especially locative ones) enabled me to familiarize myself with the new context, the rituals, costumes, habits, and possibly develop bonds to the place. Both my previous education/training and my background affected the direction of this research.

Having a strong interest in newly developed media technologies, and their impact on place and spatiality, the idea of this thesis formed very gradually, over many coffees and discussions in *Costa* and *Nero*, with my close friend Sukaina. We both started from the same point: an interest in new forms of mediation of urban space and the possibility of perceiving the spatiality of urban space differently through the addition of immaterial entities into the exact moment of experiencing urban spaces. I chose new media technologies not only for their potential to alter individual perceptions of place, distance, and spatiality, but also because certain elements of abstraction and representation are employed within their interfaces that are also familiar elements for the architect, and are the similar ingredients, tools and mediums that we work with, such as maps, mapping tools, visual/symbolic materials, etc.

Over the first year of PhD research, because I was exploring an area of study which I did not know well before, I started to expand on and increase my knowledge of theories of new media technologies, how new media is characterized, and how it differs from old media, and how the two disciplines of architecture and media overlap in research regarding the issues of place (mediatized localities and localized media), essence of place, trans-locality, etc.

I started from the wider context of new media as a discipline outside the normal borders of architecture, and tried to develop theoretical frames and practical methods to understand what could be inserted back into architecture. Through attending conferences and workshops that explored media and architecture as a new emerging field with new issues and challenges, I became more aware of the possibilities of ubiquitous/pervasive media to influence citizens' sense of place. My intention, aligned with other fields that also explore the same challenges brought about by pervasive media (such as human geography, media studies, and very recently urban studies through concepts such as Smart and Ubiquitous cities), is to bring into dialogue those disjointed areas of media and architecture and to combine different ways of thinking about our understanding of place-experience and place-attachment after accommodating those technologies. And since studying the implications of media on place is not a popular and recognized topic, especially within the architectural discipline, and most specifically the new topic of locative media and its relation to place, I had difficulties in finding and examining related theories and studies that explore similar interests. But at the same time as the topic was and still is new, any knowledge or understanding that is contributed is surely well appreciated. That was the positive motive and best encouragement for me to explore this unconventional topic.

Even though the topic of media in general is not a popular discourse among architects, it is undeniable that it has a significant impact on architecture and urban studies, as both technologies and representations.

Media, especially mass media, has always had an influential impact on the field of architecture, especially architectural practice, where image partly defines/conveys/signifies qualities of the design and to an extent represents characteristics/qualities of urban living.

Media has already been discussed in terms of saturating urban life in different ways, where it cuts through diverse aspects of public/private issues, community, surveillance, and control, regeneration, migration, etc, but not many investigations have been conducted on the subject of locative media.

Through my exploration of this topic, I came to the realization that one of the fundamental points where the intersections of media and architecture (or, better, *urban studies*) are raised to another level is locative media. Here, the complexity of the relationship between media and place, particularly after the development of mobile media from 2005, is fundamentally changed.

The development of mobile media/locative media is, I believe, one of those instances which we can view as a fundamental change in the perception of space and spatiality, brought about by the incorporation of tracking systems, mobile people, immateriality (abstract representation/maps) with aspects of materiality. The interconnection between urban place and information is here raised to another level, because of the relevance of information (content) to the particular context/location. In this format, the priority to present data is given to such information that has more relevance to the context. This aspect thus became the main reason to choose locative media as the specific branch of media technologies that deals directly with place/location, to be studied in the thesis.

To clarify the expectations of the reader in terms of the area and scope of the research, and the expected theoretical/ critical positions, I would like to emphasize that the research project is situated within critical geography's spatial turn, and shares some similar concerns and gives attention to important socio-spatial implications of locative media by exploring it as a vehicle for environmental knowing/spatial understanding, as well as exploring some new possibilities offered by developments in the field of networked cities, where locative media can possibly affect/alter the existing spatial practices through developing some forms of network between users (e.g, networked community of a neighborhood). The thesis explores aspects of the accommodating locative media for conceptualizing place/place understanding, similar to other studies that explore the possibilities of locative media to challenge theories of place-attachment, sense of place, place-memory and collective memory. It is concerned with understanding the social practices, institutional forces, and material complexity of how humans and spaces interact, particularly on individual level in relation to place-experience/place-attachment, paying particular attention to the 'front' or visible layer (users interacting with media), rather than negotiating the socio-economic or political forces behind the scenes. This project, although acknowledging the complexity of these factors (social/economical/political factors) involved in the current state of designs and developments of locative media, focuses on the way users interact in an innovative and messy fashion with the applications to make sense of their environment, socially and spatially.

In this light, in addition to documenting how locative media contributes to environmental knowing, the thesis also offers new frameworks for spatial theory, it gives theoretical and detailed empirical attention to place and place-experience, and explores what place might mean in the era where locative media significantly and fundamentally changes the relations of person-to-person and person-to-place, where it contributes to re-configuring not just person-to-place relations but perceptual understandings of place and spatiality.

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INTRODUCTION: LIVE MONTAGE

Live Montage: Setting the Stage

Nowadays, by incorporating GPS systems, mobile media and its related platforms have become increasingly location aware, able to track and detect users' locations, and (based on that location) deliver a wealth of location-related information to users, and possibly contribute to expanding their choices and their awareness of their immediate surroundings. Through pervasive use of *locative media*¹ platforms, places can now be tagged, marked and viewed with different filters (e.g. historical and memorial filters, personal/collective filters, and so on).

In recent years, because of the increased availability of technology and connectivity of people, places and objects, and increasing access to vast data sources and information overflows, the potential to overlay spaces with information, and especially with location-dependent information, is almost constantly available for many physical spaces.

From a critical point of view, new media technologies sensitive to location, location-based applications, or what is commonly referred to as *locative media*, have provided the possibility of establishing different relations, associations and meaning with urban spaces. Mobile media used in every day base, encourages people to encounter urban spaces and “appropriate” them in different ways (e.g. traffic and way-finding applications, to name but two commonly used examples).

Locative media is a term that was coined by Karlis Kalnins during the *Art. Communication Festival*, 16–17 May 2003, in Riga, Latvia,² and encompasses a wide spectrum of practices all including aspects or features of location-based services. This umbrella term covers all location-based practices that generate new potentialities for facilitating social practices and develop forms of social appropriation with different aims and objectives, including artistic, commercial marketing, social networking, travel and tourist applications, and more recently even applications at the service of governing and policy-making.

As the original birthplace of the term suggests, the term *locative media* retains a particular history that is anchored within the field of *new media arts*.³ And the early applications and

¹ There are useful terms that partially address similar concerns and issues regarding new media technologies and issues of location and often are treated as interchangeable, such as, locative media, pervasive media, location-based technologies, location-aware systems and ubiquitous media. Pervasive media is one of the most common terms, commonly used in media studies, that is specifically directed at pervasiveness of media and usages of sensors but does not necessarily deal with location. Locative media on the other hand focuses on location, defines those new media platforms that use sensors and/or mobile/wireless networks, to deliver related information (Images, film, text, game, etc) based on users' locations. Those sorts of location-aware media deliver content into the fabric of everyday life based on the situational context at the moment of delivery. Locative media also refers to the technology that gives prominence to social/cultural and artistic aspects of location-aware systems applied in daily life. Therefore in the following text I will often use locative media as an effective terminology to address socio-spatial practices and issues arising from the usage of those new technologies sensitive to location, and if I need to address how those media are pervasively used (widely used), I will use the term *pervasive media*. In other places, if the aim is to address specifically application (and not the practice), I will refer to it as *locative media application*. Sometimes to avoid repetition I will also use *location-based application*.

² Cited in (Tuters, 2004, 2005; Bleeker and Knowlton, 2006; Galloway, 2008; Galloway and Ward, 2006; Hemment, 2004; Russell, 2004).

³ Wilken, Rowan. 2012. “Locative Media: From Specialized Preoccupation to Mainstream Fascination.” *Convergence: The International Journal of Research into New Media Technologies* 18 (3): 243–47.

For more information regarding the history, bibliography and taxonomy of locative media, reader can also visit: Bleeker, Julia. 2006. “Locative Media: A Brief Bibliography And Taxonomy Of Gps-Enabled Locative Media.” *Leonardo Electronic Almanac*: Vol 14 No 3. Accessed July 23.2015. http://leoalmanac.org/journal/vol_14/lea_v14_n03-04/jbleecker.asp.

preliminary directions of this technology were influenced by artistic movements such as Dérive⁴, and other creative ways of exploring space/cities. Rowan, while discussing the origins of the term, pointed out that, “it is fair to say that the field of new media arts has been at the vanguard of exploring both the creative possibilities and critical implications of locative media”.⁵ Since then the direction and the interests of practitioners involved has changed, and thus the period between 2005 and 2009 can be seen as a significant turning point in the history of locative media, where it shifted towards commercial development/marketing tools and has become the focus of increased consumer fascination.⁶

There is a growing body of studies on locative media discourses⁷ that examines (in different ways) the superimposition of virtual information on real spaces, and by doing so tries to examine spatial, social and cultural influences of such practices or the ways in which those applications might affect physical behaviour and how users engage with the physical world. Locative media establishes a constructive framework within which to comprehend how new media technologies relate to our changing understanding of space and place.

Locative media, since it provides new platforms for communication and making sense of our local areas, our surroundings, and because of its contribution to changing social spatial relations, deserves more scrutiny. Different locative media platforms have their representational principles and organizational systems: they are not merely representations of reality; they are contributing to meaning making and can offer authentic experiences of urban places. Sheller, similar to other scholars, has explained that new media technologies are further reshaping urbanism, generating new forms of urban spatiality, creating new affordance for people to navigate public places and public interactions.⁸ Although there are growing number of studies on the implications of new media technologies (on applications and websites accessible on the internet), there are relatively few studies which notice the emerging condition formed by the superimposition on urban spaces of location-based technologies accessible on mobile devices.

In order for media technology and network communication to be operational within the urban fabric, there are material infrastructure, communication technologies, institutions and other systems and technologies (such as GPS satellite networks, digital cellular networks, data centers, mobile operating) systems that should be built, developed and maintained operational. Those infrastructures are generally referred to as ‘hard and soft’ infrastructure; (both ingredients of the operational system of network communication). Rossiter has explained how those *logistic infrastructures* (manifest as roads, airports, terminals, railways, which differ from communicational infrastructures) let labour/commodities, information/data, technologies and facilities move in space.⁹ Some of those fundamental systems ‘hard infrastructure’ embed into

⁴ Developed based on collection of arts in Paris as a critical tool or as a technique for exploring urban spaces unplanned and more open to create new meanings in a performative and artistic way.

⁵ Wilken, Rowan. 2012. “Locative Media: From Specialized Preoccupation to Mainstream Fascination.” *Convergence: The International Journal of Research into New Media Technologies* 18 (3): 244.

⁶ For more information regarding the history, possible future directions of locative media please see *Convergence: The International Journal of Research into New Media Technologies*, spatial issue on Locative media, August 2012; 18 (3).

⁷ Please see, Gazzard, Alison. 2011. “Location, Location, Location: Collecting Space and Place in Mobile Media”. *Convergence: The International Journal of Research into New Media Technologies* 17 (4): 405–17. Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons; Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons; Silva, Adriana De Souza e, and Jordan Frith. 2012. *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability*. Routledge Chapman & Hall; Hjorth, Larissa. 2013. *Studying Mobile Media: Cultural Technologies, Mobile Communication, and the iPhone*. New York [u.a.]: Routledge.

⁸ Sheller, Mimi. 2011. *Mobility* (Review article). Accessed <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>.

⁹ Rossiter, Ned 2014. “Locative Media as Logistical Media: Situating Infrastructure and the Governance of Labor in Supply-Chain Capitalism.” In *Locative Media*, edited by Rowan Wilken and Gerard Goggin, 208–23. Routledge; please also see: J, Firmino, Rodrigo. 2010. *ICTs for Mobile and Ubiquitous Urban Infrastructures: Surveillance, Locative Media and Global Networks: Surveillance, Locative Media and Global Networks*. IGI Global.

the urban infrastructure, e.g. “transportation infrastructures and spaces of transit which are also spaces of transmission”,¹⁰ whereas others are more visible, such as human institutions and organizations that are referred to as ‘soft infrastructure’, which govern the data distribution/design/development or run the codes/algorithms. Global Positioning System (GPS)¹¹, Geographic Information System (GIS), the mobile phone, User-generated maps, web_map services such as Google Maps, Mapbox, OpenStreet Maps, are among the technologies that enable locative media.

Regarding the authority to run a smart city and to deal with data/codes, Townsend believes that soft infrastructure remains the domain of humans and civic leaders,¹² and if we are aiming for smarter cities, from a bottom-up approach, soft infrastructure ought to be turned over to residents and their civic leaders rather than be operated by engineers who build the systems. An interesting example of such an approach/agenda is proposed by San Francisco-based *Entrepreneurship In Residence*,¹³ where city departments are encouraging the private sector to explore ways that technology can be used to make government more accountable, efficient and responsive, by involving innovative approaches to design—and most importantly function—in the city; “to explore innovative solutions to civic challenges that can lower costs, increase revenue, and enhance productivity”(this topic will be further discussed in chapter 2).¹⁴

In regard to such bottom-up approaches, my main concerns are to investigate the new condition for architecture which arguably is brought about by the emergence of new forms of mediatization of places (the impact of locative media on site), and to explore some implications of locative media applications that have been referred to as the remediation of the material environment with virtual information.¹⁵ By emphasizing the representational medium,¹⁶ I will negotiate the spatiality (spatial understandings and spatial practices) that emerges from the juxtaposition of the representational medium (maps, images, text, etc) with the material-physical world. With that in mind, the contribution of the *Introduction* regarding the whole structure of the thesis is to ground the current PhD with its emphasis on an architectural context in relation to other fields or disciplines that share similar concerns and interests in the relation between new technologies, place-understanding and place-experience, particularly as this has an impact upon urban inhabitation; to survey how media technologies communicate with place; and to survey how aspects of place are represented in those media. The *Introduction* will only point to some of the main theoretical possibilities that best provide understanding and help to make sense of the complexities of urban issues that influence our understanding of the relations between place, the socio-cultural aspects of media-technology, mediation, place-experience, and collective place-understanding. Those theories will then be discussed and built on through three case studies that can be taken to represent a number of media technology platforms.

By pulling together ideas and insights from different disciplines, the current thesis highlights the significance of locative media as one type of media that potentially challenge our understanding

¹⁰ Cited in Rossiter, N and Zehle. 2014. “Locative Media as Logistical Media: Situating Infrastructure and the Governance of Labor in Supply-Chain Capitalism.” In *Locative Media*, edited by Rowan Wilken and Gerard Goggin, 208–23. Routledge.p.217.

¹¹ GPS allows for the accurate detection of a specific device and thus allows to navigate the location of the person who carries the device. GIS supplies arbitrary information about the geological, strategic or economic situation of a location.

¹² Townsend, Anthony M. 2014. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. 1 edition. New York: W. W. Norton & Company.

¹³ <http://entrepreneur.sfgov.org>

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ By representational medium I refer to the ways information is represented within each application and how it interacts with reality. Representational mediums are mainly comprised of a number of elements (maps, images, text, etc). The visual/representational aspects of each interface differ from one application to another.

of place and spatiality, and, furthermore, this thesis raises questions that locative media and mobile technologies pose for architecture, in regard to their proposed potentials, limitations and challenges. The aim is to address a number of forms of socio-spatial and cultural practices, and ways of producing space and spatiality, that are contingent on new media technologies.¹⁷ To do so, and to grasp the emerging condition of the associated urban complexities, I will first discuss the so-called Mobility Turn and through this topic, as a threshold/passage, will begin the discussion and will illustrate the context of the study.

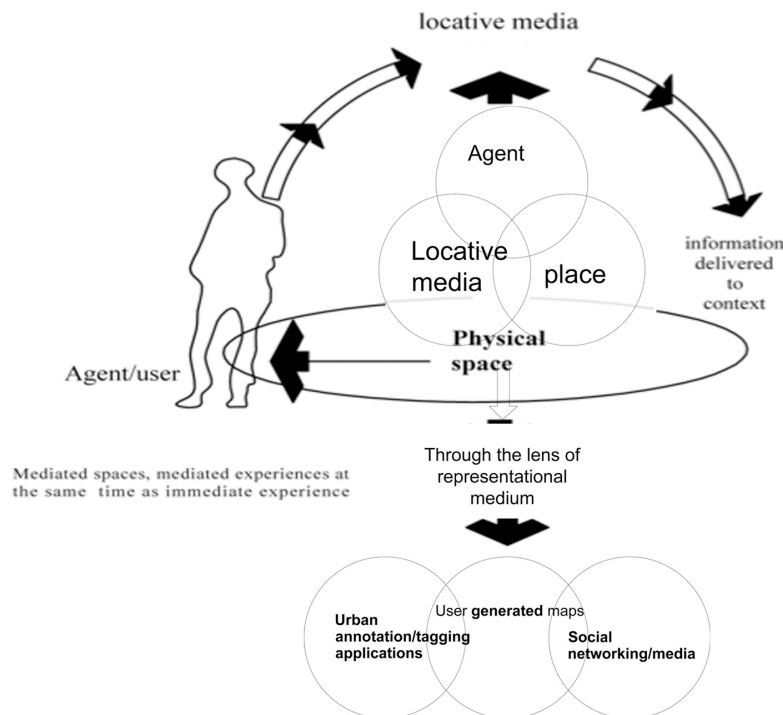


Fig. 1.1 This thesis explores the interrelationship between three main ingredients of place/locative media/ agent through the lens of representational medium, where three main categories of locative media applications will be investigated.

¹⁷ New media is a wider frame encompassing all forms of digital media or what is commonly referred to as Web 2.0 and the related communication technologies, websites, blogs, online, social media, virtual reality, etc. New media is a generic term, covering different forms of electronic media, and is in relation to the old media (print, newspaper, static forms of representation). One of the consequences of new media is empowering users to be more than only receivers of data, and become producers and disseminators of information. This shift in communication stimulates and produces many dramatic shifts in the nature of how we communicate, consume information, and generate new knowledge. Voithofer (2005) specifically contrasts the new media with old media counterparts by addressing the "newness" of the new media in terms of changes in the production process, the possibility of convergence of all forms of media, fluidity of format: transformation from one format to the other, storage (digitization and indexing), presentation (in a video display of sorts), and distribution over telecommunication networks. Voithofer, Rick. 2005. "Designing New Media Education Research: The Materiality of Data, Representation, and Dissemination." *Educational Researcher* 34 (9): 3–14.

Present Context of Mobility (The ‘Mobility Turn’: Immaterial Mobility in Studies of Mobility)

“Increasingly how we think of place [and how we experience place] is connected to mobility.”— Nigel Thrift.¹⁸

One of the key themes and issues that should be brought into play in any discussion of urban complexity and the changes taking place in understanding our relation to place and spatiality is mobility. In the present context, different forms of mobility of material and immaterial entities, flows and circulations of goods or information, are bringing and offering new forms of connections and associations with physical places and objects.

As a human geographer, Thrift argues that mobility must be considered at different scales and in different formats. Sociologist John Urry famously distinguished four different kinds of travel as: *movement of objects, imaginative travels, virtual travels and physical corporeal travels*.

The term *mobility* here applies to the shift in various studies’ concerns with media, communication, geography, globalization, media studies, urban studies and so on. For sociologists Sheller and Urry, who coined and popularized the term in their 2006 article ‘The New Mobilities Paradigm’, mobility now covers all sorts of movement: it is no longer limited to physical and corporeal mobility that is usually equated with the idea of ‘social mobility’.¹⁹ Instead, it encompasses wider cases of cultural circulation, spatial movement, informational mediation (e.g. movements of images, circulation of information), topics that focus respectively on human geography, anthropology, media studies, (and recently, urban studies).²⁰ This umbrella puts an unprecedented emphasis on the mobility of people, goods, information and all their relational dynamics and effects.²¹ It also encompasses all related forms, mediums, and practices related to such movement. Urry argued that urban society is a society on the move, and each mobility, whether it is material or immaterial, shapes specific configurations and relations, and by each reconfiguration of a person’s relation to the outside world, whether it is near or far away, they are exposed to a different perception and understanding of place. Urry et.al suggested a ‘mobilities turn’ in the social sciences,²² to combine studies of individual experience of travel and communication with an interest in broader structural and societal preconditions for, and consequences of, various forms of mobility²³ including also mediated mobility (such as mobile phone communication and all other new forms and platforms of communication).

¹⁸ Mackay, Hugh. 1997. *Consumption and Everyday Life*. SAGE.p.180.

¹⁹ Sheller, Mimi. 2011. Mobility (Review article). Accessed <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>.

²⁰ Sheller, Mimi, and John Urry. 2006. “The New Mobilities Paradigm.” *Environment and Planning A* 38 (2): 207–26.

²¹ Sheller, Mimi. 2011. Mobility (Review article). Accessed <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>

²² The mobility turn, spatial turn, material turn, and sensorial turn are terms that have been used in cultural studies to mark what is perceived to be new paradigms in studying those discourses. The idea of those turns is to take into account the significant changes brought about by contemporary complexities such as development in technology, globalization, nomadism, flow, mobility, etc. All of those turns refer to academic moments, where the ways in which to study each of those topics had to change to take into account the significance of thorough changes taking place in society and to highlight the importance of embracing the nature of those changes or complexities in their studies. The mobility turn seems to be the latest of those turns, diagnosing the complexities of modern life; it is concerned with the multiple ways in which economic, social and political lives and practices are formed, organized and affected by mobility (e.g. mobility of systems, people, networks, material and immaterial) over time and space, that make modern life dependent of coordination of those systems in play. Sheller, Mimi, and John Urry. 2006. “The New Mobilities Paradigm.” *Environment and Planning A* 38 (2): 207–26.

Sheller, Mimi, and John Urry. 2006. “The New Mobilities Paradigm.” *Environment and Planning A* 38 (2): 207–26. doi:10.1068/a37268.

²³Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge.p.37.

All different forms of mobility—mobile connectivity, potentials of mobile media with different forms of representational media and dynamic ways of representing, reflecting and tracking people, activities and places— have started to take hold of the ways in which we communicate and make sense of our environment. This is where Sheller and Urry pointed to the potential of an emerging trans-disciplinary gap, which they referred to as the ‘Mobility Turn’.²⁴ The Mobility Turn highlighted a new site of convergence for studies on corporeal and physical movement, imaginary, virtual and informational movement, travel, vehicles and things, at all scales from global to local, and even the micro-scale of human activity and being. The Mobility Turn and studies related to this matter emphasize partly what I am working on as an architect who is interested in knowing the effect and consequences of inserting new media technologies into the modes of experiencing space and spatiality.

While the topic and issues that mobility brings into view are clearly important, surprisingly few studies have been done from within the architectural disciplines. Consequently, the aim of this PhD is to examine and build on theories and discourses regarding this matter; this will be done through close readings of a number of media platforms.

To set the stage for my study, and to give an overview of the various fields involved (with their overlapping boundaries, and similar concerns over and interests in issues of mobility, media technology/practices and place) I should also highlight that there is a growing interest in studies and discourses concerned with the effects and affordance of media practices. With mobile media re/shaping urban experience, the boundaries between public and private, work and leisure, production and consumption (prosumption), individual and collective action, online and offline, networking and autonomy, spatial distance and co-presence, anonymity and knowledge, presence and absence, appearance and disappearance, and visibility and invisibility are blurring, “Social media are an expression of the tendency that in contemporary society boundaries become liquid”.²⁵ Tierney similarly pointed that “[...], mediation and more specifically, social media and the Internet, has contributed to a slippery public, evading a fixed description, flickering between visibility and invisibility [...]”.²⁶ Mediated city,²⁷ Hybrid space,²⁸ Geo-media,²⁹ Smart cities,³⁰ Mediascape,³¹ Technoscape,

²⁴ Please see footnote 12.

²⁵ Fuchs, Christian. 2014. “Social media and the public sphere”. (Presentation at Westminster University: Seminars/Lecture series. Feb 2014). 23 July 2015. Accessed at: <http://www.westminster.ac.uk/news-and-events/events/westminster-talks/2014/social-media-and-the-public-sphere>

²⁶ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge. p.39.

²⁷ McQuire, Scott. 2008. *The Media City: Media, Architecture and Urban Space*. SAGE.

²⁸ Silva A de S e (2006) From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces. 9(3), 261–278.

²⁹ Lapenta F (2011) Geomedia: on location-based media, the changing status of collective image production and the emergence of social navigation systems. *Visual Studies*, 26(1), 14–24. Lapenta addressed how new geo-media ‘regulate social behaviours and coordinate mediated interactions and can be interpreted as the new tools used to cadence the production and exchange of these dominant immaterial commodities, images and information’.²⁹ Lapenta develops the concept of geo-media theorized as a mediating space, in which two entities, or identities, converge. It is mainly a convergence of two spheres: ‘*Geosphere*’: the space of body and objects, physical entities in which media users communicate, with the ‘*Infosphere*’: bits of information, photos images iconic or symbolic representations of physical environments that media uses, produces and shares. For Lapenta, geo-media mainly emerges from a social perspective that becomes a tool used by subjects to navigate their social worlds, to organize and perform their social relations, and to maintain their networks. He also explained that geo-media serves as a tool to make visible, to project social performance and personal identity; it also provides a tool—a social navigational system—to organize users’ participation in the creation and visualization of the imagined community of the *Infosphere*.

³⁰ Hemment, Drew, and Anthony Townsend. 2013. *Smart Citizens*. FutureEverything Publications.

³¹ Sheller, Mimi, and John Urry. 2006. “The New Mobilities Paradigm.” *Environment and Planning A* 38 (2): 207–26. doi:10.1068/a37268.

Netlocality,³² and Spatial ambiguity³³ are all attempts, reflective themes and theories, mostly recently developed, to discuss the two distinctively disjointed fields that have remained separated in scholarly analyses but surely have a significant impact on one another. These themes and theories, regardless of the scale that they are dealing with, all negotiate, explore and discuss the implications of media and information within our built environment, urban context and urban spaces, explore spatiality afforded by communication and media technologies, and discuss the fluidity and the blurring of boundaries between media, place, body and information.³⁴ In consonance with those studies, in much smaller scale, I will discuss aspects of the implication of locative media applications on an individual level and will explore the potentials of those technologies to alter or re-value place-experiences through constitutive links between the representational medium (spatial imaginary,³⁵ symbolic and virtual materials) and the physical-material. Discussing the implications of using those media for the urban explorer, I will explore the possible dialogue that those representational mediums can develop with physical urban places, which can in turn potentially affect spatial understanding,³⁶ place-experience and sense of place.

Lefebvre, whilst theorizing how spatiality is in dialogue with social interactions, asserted that social relations have a spatial existence (spatiality), and that with each social change there is a parallel spatial transformation of social space.³⁷ Here, I would like to acknowledge that Lefebvre has treated space/cities politically, as a multiplicity of processes and practices created socially, and argues that this social production of urban space is essential to the reproduction of society, hence for the survival of capitalism. But still in his exploration he asserts different categories of space, that space could be lived, perceived or conceived; and “according to Lefebvre we should view space in contradictory terms – *difference* being necessarily constitutive of urbanization”.³⁸ That is why it is useful to explore the potentials of locative media from this viewpoint, that they are spaces/sites of production of meaning, values, stories, or potentially a mechanism to change/appropriate social processes of everyday life and accordingly affect the existing social spaces. Both Harvey³⁹ and Lefebvre, as Marxist philosophers, put urban processes, the production of space and spatial configuration at the core of their study of capitalism, and the city as one form/abstraction of capitalism that integrates complex forms of social construction based on value systems, and social production of meaning. Both have highlighted the importance of

³² Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons.

³³ André Jansson, “For a Geography of Communication,” 2005, <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>.

³⁴ ‘Netlocality’ focuses on how relocating local knowledge in the virtual changes the attitude and methods that people initially use to get information about places. ‘*Media scape*’ emphasises how contemporary media-landscapes connect people, places and information, and transforms them into a socio-technical assemblage. Mediascape also takes deeply into account “the disjunctive relationship between all forms of human movement and technological flow”. Lapenta referred to those assemblages of bodies and information as geo-media. His concept theorizes a mediating space in which those two entities, or identities, are converged. It is mainly a convergence of two spheres: the ‘*Geosphere*’ (the space of body and objects, physical entities in which media users communicate), with the ‘*Infosphere*’ (bits of information, photos, images, iconic or symbolic representations of physical environments that media uses, produces and shares). Lapenta addressed how new geo-media ‘regulate social behaviours and coordinate mediated interactions and can be interpreted as the new tools used to cadence the production and exchange of these dominant immaterial commodities, images and information’. De Silva addressed this same convergence as hybrid space. Both people and information, bodies and data, move within and through these technoscapes or software-embedded spheres that are also referred to as ‘smartcities’ or regimes of hyper-space-biased communication [spheres], all embedding a range of spatial ambiguities.

³⁵ This term, as I understand it, highlights the power of imagination to find meaning in symbolic materials and refers to Lefebvre and how spaces are perceived through representation, and it is in analogy with symbolic material: map, image. in: Fisher, Jaimey, and Barbara Caroline Mennel. 2010. *Spatial Turns: Space, Place, and Mobility in German Literary and Visual Culture*. Rodopi.p.10.

³⁶ By spatial understanding I intend that spaces could be interpreted/perceived differently, by means of implying new representational mediums.

³⁷ Lefebvre, Henri. 1991. *The Production of Space*. Wiley.p.129, 385.

³⁸ Charnock, Greig. 2014. “Lost in Space? Lefebvre, Harvey, and the Spatiality of Negation.” *South Atlantic Quarterly* 113 (2): 313–25.

³⁹ Harvey, David. 1989. *The Urban Experience*. Baltimore: Johns Hopkins University Press.p.

social and material constitutions of space, social practices, institutional forces and all the material complexities that produce and reproduce/revalue spaces. They acknowledged the value systems inherent within spaces, as the forces that rearrange social interactions. In a different yet relevant scenario, it is not difficult to appreciate that by applying locative media *that has this potential to create new value systems and social meanings*, we should expect spatial transformation or change in spatial relations, mainly through changes in social relations and social aspects of the production of space. This phenomenon—by which I mean altering social relations—is more palpable in the case of networking communities and social networking platforms, where changing the social forms of interaction, or developing sites for new social practices, could potentially lead to new arrangements of space/power, or issues regarding governing and maintaining power/order. Locative media, in particular social networking, are vehicles or means of production or tools to alter the socio-spatial fabric of urban space, mainly through creating possibilities of new forms of environmental/local knowledge (shared information within communities, communities of neighbourhoods that solve issues of locale), or re-arranging the social hierarchy of social life (proposed and discussed by Meyrwit⁴⁰), or introducing/creating/imposing new values, new temporalities, creating networked cities, and so on.

Those points addressed in the previous paragraph were only a few indications of how locative media could influence/alter the existing social relations / spatial production of spaces.⁴¹ In this thesis, my attention is dedicated to exploring locative media as environmental tools, as tools to create new values, new possibilities for those who explore familiar urban spaces; those who read and write the city through their everyday interactions. With locative media as a lens, in this thesis some aspects related to place and place experience on an individual level will be explored, where the messy yet innovative ways that users adopt and accommodate media are the main interest of the author. But the text is not limited to that, and in chapter 2, in a more broad-spectrum approach, other urban implications will be explored such as the potentials of citizens getting involved in participatory acts to report conditions, and taking action to affect positive changes, where the potentials of locative media are becoming more effectively involved in urban planning/development processes.

Thrift, similar to Lefebvre and Harvey, as one of the leading human geographers of the twenty-first century, also has explored a wide range of topics and discourses regarding the urban complexity of western society such as capitalism and its production of spatial relations, mobility, subjectivity, globalism/localism, and so on. He has recently given attention to discourses on creative approaches to exploring society through performative art, cinema, ethnography, etc in his book, *Nonrepresentational Theory*. Thrift identifies and acknowledges the importance of spatial turn that raises theoretical and practical discourse regarding complexities of what could be regarded as space and proliferation of inhabitation, and the range of spaces that could be produced/reproduced in contemporary social life.

Relevant to the current discussion on space and social production of space, and the power of media to change existing spatial understanding and the social relations, he has pointed to the interconnection and parallel existence of multi-spaces and territories, each of which provides different kinds of inhabitation, and the various encountering of objects, materials and processes accordingly can create different territories and various spaces/relations.⁴²

⁴⁰ Meyrwit, J. 1986. *No Sense of Place: The Impact of Electronic Media on Social Behavior* New York: Oxford University Press, p275_308.

⁴¹ In chapter 2, I address other aspects of the relationship between locative media and space through reflections on the concept of *textural space: textural affordance of space*, developed by Jansson. Jansson, André. 2005. "For a Geography of Communication." available at <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>. Also see: John Forans, 2006, *Media passage in urban spaces of consumption*, Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.

⁴² Thrift, Nigel. 2006. "Space." *Theory, Culture & Society* 23 (2-3): 139–46.

Thrift, in order to illustrate current human society and to demonstrate the capacity of humans to inhabit new forms of spaces, or “being with others”, interestingly uses the example of whales’ society: whales they can live miles away from each other but still feel in relation to others and among others whales, mainly through the act of ‘singing’ or sending signals as tools to communicate from distances. He compared that to human society, where we gradually gaining the same kind of capacity as whales, mainly through accommodating media technologies/technologies of mobility which increase our capabilities to communicate / to inhabit far-reaching spaces: “we are increasingly beings who can live with distant others as if they were close to. The spaces in which humans can be together have progressively increased in scale as new forms of materials, which are also new forms of spacing, have allowed new kinds of social relation to exist”.⁴³

Thrift also contributes to clarifying different modalities of space which are necessary to explore/develop the theory of locative media and how mediation challenges space/place understandings. For Thrift, relevant to other theorists that I will mention later in chapters 2, 4 and 6 (such as Deleuze and Guattari, Latour and network theory, Jansson, Massey), space is not a container which the world proceeds from, but rather a co-product of those proceedings (relations/associations).⁴⁴ Thrift uses four categories of constructed space in human geography:

1. Empirical Construction
2. Unblocking Space
3. Image space
4. Place Space.

The first space is the *empirical construction of space* or physical space; the measurable space of our life that comes into existence through progressive standardization and coordination that took centuries of development in technologies, measuring devices, GPS, GIS and so on. He then explains the second space as *unblocking space*, spaces of flow, spaces of other possibilities, which is also negotiated by many other scholars—those who try to *treat space differently and free it from “the straitjacket of container thinking”*⁴⁵. These are ideas developed by philosophers such as Deleuze and Gatturi (such as event, or other concepts such as becoming rather than being, Latour’s *network theory* and *relational space/place* understandings⁴⁶—*lines of flight* rather than lines—and many other interesting philosophical approaches that all try to explore “all kinds of new spaces of differentiation”; to “occupy other possibilities of spaces”, or to address ‘spaces of others’, and so on).

The third space is the image space where images produce new kinds of spaces. It refers to screens, photos, cinema, projection, and all forms of perverse media that occupy our everyday life and are based on affecting our attention and offering different sign systems or new cultural value. They all produce new kinds of spaces (this type of space is what will be further examined and developed in this thesis, through the case study of Foursquare in chapters 4 and 5).⁴⁷ The fourth space is place-space, where it relates more directly to embodiment/performance of body in space; this space mainly “refers to the process whereby spaces are ordered in ways that open up affective and other embodied potentials.”

⁴³ Ibid.p.142.

⁴⁴ Clifford, Nicholas. et al., 2008. *Key Concepts in Geography*. Second Edition. Los Angeles: SAGE Publications Ltd.p.96.

⁴⁵ Ibid.

⁴⁶ This concept will be discussed in chapter 6

⁴⁷ For more information regarding image and space, please read the theories of Walter Benjamin(concept of aura), or many other postmodern philosophers such as Jean Baudrillard, especially the concept of Simulacra and Simulation.

I mention here these four types of spaces developed by Thrift because in the following chapters, I am going to explore some of those instances that are produced by a combination of a number of those processes and spaces; those instances where space/place relation is altered through accommodation of locative media technologies: whether through symbolic materials or images that are communally shared within media platforms, and new forms of space are produced (chapters 4 and 5); or whether our sensorial experience and sense of embodiment are altered through our bodily movement in the urban spaces that are augmented by image/text (chapter 3). In all of those moments I am negotiating the possibilities of interaction between such different spaces (space-place, space-image, and space-block; I refer to this as relational place/space). Thus this thesis explores the possibility of the production of new forms of spatiality/space and place-understanding that results from the assemblages of “embodiment, bodies on the move, urban context, memory, immediate/mediated experiences, technologies, images, abstract and symbolic material and location-related information.”

Because of these new spatialities offered by codes, media and communication technologies, we are living as doubled, tripled or multiple beings at any one time. Being in several places at once is one of the consequences of using media, especially new media technologies. Hybrid perception⁴⁸ of spaces is no longer a choice; it is becoming more and more a fact that we are dealing with everywhere. We are living in streets and using public buildings that are immersed with visual and virtual reality: we take our phones towards a building and many kinds of information (personal or collective) appear; we sit in a public centre and screens connect us to a natural catastrophe that is happening in some other part of the world (like the last earthquake in Nepal 2015). Since we are exposed to information delivered to us in different formats, at the same time as physically encountering the urban context, it is getting harder to distinguish between mediated experiences and immediate ones, and mediating devices (e.g. smartphones) through material mediums of representation are mediating the experience of space. Hybrid perception of space is no longer a choice: it is becoming more and more a fact that we are dealing with everywhere.

Being in many places at once, being connected and related to other places, being aware of our surroundings (e.g. transit applications, applications that update you with traffic news, applications for way-finding or making the most of your time in places through suggesting shortcuts or by giving useful local information), or being able to keep records of things happening around us, are all examples and consequences of using new mobile media.

Reading the city differently, and taking part in the production of the collective knowledge of a city through sharing personal memories and individual ideas about each neighbourhood/building, is another process that becomes possible through the use of annotation and tagging applications. Through this bottom-up participatory process users can leave traces of themselves behind, they can leave memories on multiple platforms and in multiple formats (e.g. image and annotation in *Flickr*, voice records and images in urban tapestries.). By doing so, by sharing personal memories on collective platforms, buildings and places become part of the whole assemblage of memory, body, media and place.

With the ubiquitous usage of new media technologies, we can memorize events not necessarily within our body medium, but rather now collected and archived in systems that operate outside the entire body. The shifts in the ways we archive personal memories and events following the wide uptake, usage and adaptation of digital media and, before, locative media, have been

⁴⁸ Combination of mediated and immediate experience: virtual information and sensorial interactions.

discussed in terms of the externalization of memory.⁴⁹ This highlights the idea that memory, which was traditionally considered a format attached to or associated with the mind, shifted towards an entity that is recordable, reachable on social media and in general in digital media. As the boundaries between the personal and the collective have blurred due to the usage of new media technologies, memories captured via mobile phones are used and archived via a variety of global networks in which the individual, social, collective and organizational are intertwined.⁵⁰ Now, as architect and media scholar Lev Manovich has already mentioned, “what was hidden in an individual mind becomes public (shared).”⁵¹

Memorizing and archiving events in this way highlights the idea of Hoskins, an interdisciplinary researcher of social science, who discussed the process of trans-positioning memory. This also shows another important point: ‘memory may itself be mediatized’ and it is not stable or fixed, rather, in a sense memory become a process of self-reflective and self-accumulated media-related entities that can be edited, reorganized, and rewritten (customized through new media possibilities).⁵²

The concept of the externalization of memory also brings into view some other aspects and possibilities of archiving shared information about a site, especially *after locative media*, where a user can access those shared memories right on the site, as information attached to a building, made accessible through applications (e.g. a user can alternatively access information or the memory of a place if s/he is in specific proximity to an physical point, through mediating devices and platforms. For instance, by using annotation or augmented reality applications such as Instagram, Layar,⁵³ a user can track all images uploaded in his proximity and even define filters to confine the results.

After accommodating new media technologies and in particular locative media into the ways we memorize things and events, we could say that the memory of a building has departed from the mind of the passer-by or the people experiencing it to a place outside the body of any one individual, becoming re-located in borders and boundaries of buildings, aside from being shared in social networking systems or digital media. Now in a way we can say that a place or a building has got a memory of its own, manifest to people and passers-by through mediating devices.

Mediating devices and the possibilities of accumulating information and memory in media platforms highlight a shift from considering places as passive objects of memory to active objects that not only embed and trigger memory in passers-by, but that also can act as active repositories of memory, manifest to passers-by and users of the space.

Using various smart tracking technologies, mediated devices and annotation applications that keep track of usage and other activities throughout a smart-city,⁵⁴ with the purpose of recording activities or gathering information related to a point, place or location, these are beginning to highlight how places can maintain a kind of memory of their own. Those externalized/archived memories of a place (available through mediating devices) are mainly available to people who

⁴⁹ Garde-Hansen, Joanne, Andrew Hoskins, and Anna Reading, eds. 2009. *Save As... Digital Memories*. First Edition edition. Basingstoke; New York, NY: Palgrave Schol, Print UK. P70-90.

⁵⁰ Garde-Hansen, Joanne, Andrew Hoskins, and Anna Reading, eds. 2009. *Save As... Digital Memories*. First Edition edition. Basingstoke; New York, NY: Palgrave Schol, Print UK.P15-39.

⁵¹ Manovich, Lev. 2002. *The Language of New Media*. Reprint edition. Cambridge, Mass.: The MIT Press.

⁵² Garde-Hansen, Joanne, Andrew Hoskins, and Anna Reading, eds. 2009. *Save As... Digital Memories*. First Edition edition. Basingstoke; New York, NY: Palgrave Schol, Print UK.P.70-90

⁵³ Mediating device referring to media platforms and applications that can detect context-related information, or memories through markers. It also refers to new technology that mediates the conventional ways we communicate and make sense of our surrounding (e.g. smartphone, iPad, etc).

⁵⁴ Hemment, Drew, and Anthony Townsend. 2013. *Smart Citizens*. Future Everything Publications.

are in close proximity to that location.⁵⁵ Users can detect or track such information through their devices and mediated platforms (annotation or augmented reality application). The idea of the externalization of memory and trans-location of memory within places (the mediatizing of place with collective memory) is closely related to understanding media, place, body and information as an assemblage, with less clear boundaries and more fluid connectivity.

Memories of a place have been discussed by media scholars, who chart how this phenomenon has taken a journey from body possession to becoming a possession of digital media. I will take this one step further, and say, based on my observation of the potentials of new media technologies, and locative media in particular, memory could take a journey from being a body possession to becoming a building's virtual medium or quality; from being a memory of a place attached to the mind of a passer-by to becoming a character of the building that stays partly with the building, that is available through mediating devices. Different forms of tag (annotation or multi audio-visual forms) give new dimensions to the characteristics of buildings, and possibly give a new aura⁵⁶ to the building or provide a different auratic experience for users), as well as a unique quality to memory. The idea of *spatiality of memory (externalizing the memory)*⁵⁷ and dissemination of memory in media platforms, and thus potentials of new media technologies in return to reactivate aura of a building/place, or other discussions regarding *mediated aura of place (A new auratic experience)*⁵⁸ are consequences of applying media on site, discussed by scholars such as Hoskin, Melovich, Dijck, Bolter and et al and will be further discussed later (the concept of the *mediatization of place/memory* after new media will be discussed through the case study of *Streetsmuseum* in Chapter 3).

This also highlights how buildings have attained a more complex character, as new forms of media mediatize a building's aura. Media have of course mediatized place/place-memory⁵⁹ and the image of a place for a long time, but now new media are more active in creating and mediatizing the aura of a building, mainly through revealing, divulging and making visible stories, narratives and memories hidden inside a building's physical borders, by making them available and visible for users of the place at the time of encountering the building. By revealing

⁵⁵ The act of manifesting the memory of building (e.g. the activities occurring inside), through the façade of the building has become one of the interests of Media-architecture studies, which explore the affects of new media technologies on the constitution of public places, perception and memory of place.

⁵⁶ Walter Benjamin famously theorizes aura defined as stories and narratives formed/generated around an object: (including all the unique stories that an object holds). Aura also relates to 'the object quality of being part of a context'. In his early writings, every landscape and object had an aura, but in his later text in *The Work of Art in the Age of Mechanical Reproduction* he used aura to discuss some aspects of the act of reproduction, where the act of reproduction or copy would take the aura and uniqueness from the object, and it does so by changing its context and taking it out of its original context. This concept has been applied to architecture, media, tourist studies, etc.

The issues of authenticity and the concept of aura recently again gained attention through readings of traditional theories developed by Benjamin, in contrast to contemporary media practices. These studies seek to explore issues regarding the potential of media to reactivate perception, memory, imagination and thus auratic experience. David Bolter et al applied Benjamin's ideas to the context of new media, and discussed that different forms of media seem to differ in their capacity to evoke aura. Where some create a more unique quality of experience where the user feels distanced from the object, Benjamin referred to this quality of distancing as a specific aspect and quality of aura.

For more information please see: Bolter, Jay David, Blair MacIntyre, Maribeth Gandy, and Petra Schweitzer. 2006. "New Media and the Permanent Crisis of Aura." *Convergence: The International Journal of Research into New Media Technologies* 12 (1): 21–39. Similarly see (Benjamin, 2008, p. 23): where he discusses "Aura as unique value of authentic, is an experience, an engagement, defined as a "strange tissue of space and time: the unique apparition of a distance, however near it may be". Also see Henson's critical reading of Benjamin's concept of Aura available at: http://criticalinquiry.uchicago.edu/uploads/pdf/Hansen,_Benjamins_Aura.pdf

⁵⁷ Garde-Hansen, Joanne, Andrew Hoskins, and Anna Reading, eds. 2009. "Save As... *Digital Memories*. First Edition edition. Basingstoke; New York, NY: Palgrave Schol, Print UK.P.70–90

⁵⁸ Bolter, Jay David, Blair MacIntyre, Maribeth Gandy, and Petra Schweitzer. 2006. "New Media and the Permanent Crisis of Aura." *Convergence: The International Journal of Research into New Media Technologies* 12 (1): 21–39.

⁵⁹ Dijck, José van. 2007. *Mediated Memories in the Digital Age*. Stanford University Press.

the stories of a building, new media platforms can increase the relations, associations and feelings of attachment towards buildings.

This issue of media affecting the aura of a building and the way people associate with place, their place-experience, could also be viewed as user empowerment offered by media to develop subjective/personal readings of the city. The proliferation of applications brings choice for users, and because of this proliferation of a wide range of applications with different filters, users arguably now have more choice in terms of what sort of information and stories they want to read about a place. Annotation applications (e.g. *Urban Tapestries*⁶⁰) and other participatory tagging activities support bottom-up activity to rewrite the city in a more subjective way, bringing hidden aspects of city to light. Media scholar John Barber⁶¹ compares this user empowerment offered by new media technologies with the way a flâneur was able to read and rewrite the city through his choice of places to wander: through freely making sense of the city and filtering out unwanted encounters.⁶² Now users, through diverse filters and forms of choice, in a similar way can enjoy the filtering out of unwanted encounters with information/places, wander in the city, and freely make sense of the city through a collage and montage of fragments of urban narratives, images, and stories of city. Customization and giving users the choice to filter unwanted information and provide specific information is more and more enabled, as applications become more widely used.

There are growing studies of the potentials of the mediatization of buildings/places and the potential of media technologies to remediate the material environment of cities.⁶³ Sociologist Sheller has highlighted the emerging area of research concerning the way cities are being augmented, embedded with technologies and digital media. She has pointed out the emerging ecologies of media-space or assemblages of media and material space that many have started, describing these processes as a “remediation of [the] material environment with digital technologies.”⁶⁴ By having a similar optimistic view towards the potential of media technologies to remediate the physical environment, in Chapter 3 concerning *Streetmuseum*, which discusses augmented reality, I will highlight some aspects and potentials of *culturally aimed incorporation of technology*. By inserting and sharing cultural memories through augmented reality applications, the assemblage of material and immaterial enriches the experience of place. Reconfiguring urban spaces around digitally inserted points, and changing the connection

⁶⁰ This specific application offers its users a different sensory experience of context through telling narratives of the site, in a multisensory format of visuals, sound recordings, films, text, images, maps, etc. Collectively, putting together pieces of personal documentation (in multi-format) can provide a different understanding that one might not see or grasp individually. For further information about this interesting application please see the aims and objectives behind it addressed by the team members in a related paper presented at the Mobile Leisure and the Technological Mediascape seminar as part of the DigiPlay: Experience and Consequence of Technologies of Leisure, 26th April 2004.

http://proboscis.org.uk/publications/SNAPSHOTS_sensingthecity.pdf

⁶¹ Farman, Jason, ed. 2014. *The Mobile Story: Narrative Practices with Locative Technologies*. New York, N.Y: Routledge.p.95-111.

⁶² *Flâneur* is defined as a free explorer of the city who enjoyed making sense of the city with choice, in more alternative way, to be visible or be like a shadow. It is also characterized by constructing a free collage of the city parts, not in the way an ordinary person or a tourist would explore the city, but rather with more significant details, and more choice.

⁶³ Sheller, Mimi. 2011. Mobility (Review article). Accessed <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>

⁶⁴ Remediation is coined by: Bolter and Grusin, 1999. The idea of was remediation originally used to discuss how when a new thing is introduced it tries to improve upon the flaw of its predecessor(s), but this concept transited from its original context and now is used in terms of remediating physical-material environment through incorporating aspects of media. By remediation of media I mean the potential of locative media to create alternative spatiality and spatial understandings of places, for instance by using game applications users can explore a place based on quest and experience the same place totally differently from a user who is not using any mediating devices. Sometimes remediation could also refer to the possibility of giving new characteristics to places: for instance, by revealing narratives and igniting the history of the past, media can create a feeling of closeness, or develop some form of relation to the place.

between the non-physical and physical, the power of new media to produce and re-define practices of place are issues that I will examine in detail throughout the main text.

At another level, all those differential forms of mobilities (mobility of text and context) are “further reshaping the mediated city and mediated spatiality, possibly reaching a stage of ‘spatial ambiguity’.”⁶⁵ Human geographer Jansson used this term to refer to the phenomena that resulted from globalization, the intersection of mobile people and mobile media (the saturation of media text and pervasive usage of mobile media), and the ambiguity of the status of text and context.⁶⁶ Taking media technologies as an example of technologies that have caused doubt in conventional spatial understanding, he explained that because of all the forms of mobility and ambiguity of text and context,⁶⁷ we are getting to a stage where, instead of space, we should speak of spatial ambiguity: “the intersection of mobile people and mobile media raises ambiguities foremost regarding the status of *texts* and *contexts*.”⁶⁸ Jansson also explained that because of the mobility of people and text, and the hybridization of experience,⁶⁹ we should consider the spatial turn⁷⁰ when studying media and communication. This need has also been highlighted by other scholars such as Fisher and Mennel (2006),⁷¹ to indicate the renewed interest in space as theoretical category as well as an interest in discourses on cultural production⁷² and spatial production. Jansson stressed that in related discourses of media and visual studies, scholars should incorporate spatial theories and borrow from them to “approach *communication as spatial production*”.⁷³

Engaging at the micro-level with these different forms of mobility of people and information, locative media studies and mobile media scholars have, through concepts such as a ‘slippery public’,⁷⁴ ‘hybrid or multiple spaces’,⁷⁵ ‘interface-dependent place-making’,⁷⁶ considered the potential of new media technologies to enrich the experience of space, and have approached issues that are more directly related to architectural discipline such as impacts of media on public/private spaces, urban mediation, heritage buildings/sites and the mediated experience, etc. Media architect Tierney has discussed how the ubiquitous usage of social media has put public space, the way it is traditionally interpreted and understood, at stake, causing fluid boundaries to

⁶⁵ André Jansson, “For a Geography of Communication,” 2005, <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>.

⁶⁶ Ibid.

⁶⁷ Media use is intertwined in the fabric of everyday life; the media (referred to as text) pervade the context: culture, politics and the public sphere, etc. It is not possible to distinguish where text finishes and context starts; the effects, and importantly the existence, of text and context is amalgamated. For more information please see: André Jansson. 2006. “For a Geography of Communication.” In *Geographies of Communication: The Spatial Turn in Media Studies*, edited by Jesper Falkheimer and Andre Jansson, 45–56. Göteborg: Nordiskt Informationscenter.

⁶⁸ André Jansson, “For a Geography of Communication,” 2005, <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>.

⁶⁹ Adriana de Souza e Silva, “From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces” 9, no. 3 (August 1, 2006): 261–78, doi:10.1177/1206331206289022.

⁷⁰ The mobility Turn, spatial turn, material turn, and sensorial turn, are terms that have been used in cultural studies, to mark what is perceived to be new paradigms in studying those discourses. The idea of those turns is to take account of more significant changes in academic moments, where the ways in which to study each of those topics had to change to take into account the significance of thorough changes taking place in society and to highlight the importance of embracing the nature of those changes or complexities in their studies.

⁷¹ Fisher, Jaimey, and Barbara Caroline Mennel. 2010. *Spatial Turns: Space, Place, and Mobility in German Literary and Visual Culture*. Rodopi.

⁷² Ibid.p.10.

⁷³ Falkheimer, Jesper, and Andre Jansson. 2006. In *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter for.

⁷⁴ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge. p.39. Tierney stated that: “[...], mediation and more specifically, social media and the Internet, has contributed to a slippery public, evading a fixed description, flickering between visibility and invisibility [...]”.

⁷⁵ Aspects of this concept will be discussed in the following chapters, distributed throughout different parts of the case studies. Silva A de S e (2006) From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces. 9(3), 261–278.

⁷⁶ This concept will be discussed in the chapter on Streetmuseum: there, I will discuss the dependency of media and place-experience in the case study on augmented reality.

emerge between public and private domains of space.⁷⁷ Studying the urban and spatial implication of *Facebook*, Tierney has also asserted that as “social media platforms become increasingly entangled with everyday interactions, it is becoming more difficult to segregate public practices into discretely bounded spheres or spaces.”⁷⁸

Discussing and approaching qualities of place at the micro-scale, the intimate relation to a person, I will also address relevant concepts such as *flexible sociability*, and *elasticity of place-attachment* (chapter five on *Foursquare*). Both of these concepts discuss the potential of new media to overcome physical geographies. Human geographers Barcus and Brunn (2010)⁷⁹ proposed the notion of *place elasticity* resulting from the possibility of new forms of mobility to refer to the way new media technologies enable people who are away from their roots to maintain associations with their former home-places. They discussed *portability of place attachment* to highlight how users, by adopting mobile technologies and through engaging with local events, social networks, mobile phones, etc., can still maintain their personal bonds.

Similarly, with regards to micro-level engagement with media and media effects on place-experience, and place-understanding, this PhD will focus in particular on the representational medium of locative media as sites for producing and appropriating place-associations and spatial relations.

Gaps/Aims/ Questions

There are fast-growing numbers of studies that investigate the intersection between different forms of mobility of immaterial/material, mobility of people, and discourses related to place and place-understanding, but fewer studies with special emphasis on mobility of immaterial, representational mediums and new forms of mediation. These issues have consequently been little understood despite the recent renewal of interest in related questions of media and city, spatiality, geography and location in fields such as media and communication, cultural studies, sociology, human geography, urban studies, and so on.⁸⁰

It became clear that through the different viewpoints from which I examine the relationship between the three main ingredients of place / new media / agent, the nature of the study as well as the amount of focus on each of the ingredients might be accordingly affected. So by defining locative media as the main lens, and representational medium as the main frame of enquiry, I narrowed down the scope of the study to a size that is achievable (possible to be completed), in three years.

By underlining specifically the quality of the *representational medium*⁸¹ and *medium*

⁷⁷ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.p.101.

⁷⁸ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.P.96.

⁷⁹ Barcus, Holly R., and Stanley D. Brunn. 2010. “Place Elasticity: Exploring a New Conceptualization of Mobility and Place Attachment in Rural America.” *Geografiska Annaler: Series B, Human Geography* 92 (4): 281–95.

⁸⁰ Wilken, Rowan, and Gerard Goggin. 2014. “Mobile Technology and Place (Hardback) - Routledge.p.4.

⁸¹ Representational medium, as the term suggests, deals with representation, and how information is represented, and respectively how information is transferred to the user through the interface (which includes both aspects of software and hardware). It also relates to how the user communicates through the interface (aspects of the software and visual material). For each application, the aspects and properties of representational mediums are different, thus the way that platform communicates with place/spatiality is different and so is its impact. Representational mediums are mainly comprised of a number of visual materials, and visual elements of interface (maps, images, text, etc) that affect the environment of communication. I would like to emphasize that representational medium is used here with a different intention from how Lefebvre applied this term. I am applying this term to signal that representational medium is not an abstraction of reality, but instead is in relation to reality, mainly by creating potentials to explore and understand

specificity,⁸² I have examined the relation of place and new media technologies (locative media, but mainly I will discuss this through examining qualities of the medium itself) and the agent. I have negotiated how representational medium communicates with place, and how place is represented and reflected in a medium. I have undertaken detailed studies of a range of different mediums and platforms (applications), each of which has a different specificity, and each of which was selected for study based on its quality of medium representation and communication, and which consequently offered different practices and understandings of place. The significance of the representational medium, how information is represented and accordingly how it interacts with physical space, or how each locative media, through its medium of representation, interacts with place (including the physical space and multi-sensorial perception), was highlighted and referred to by media scholar Dourish and anthropologist Bell as *literacy*.⁸³ Dourish coined this term⁸⁴ to place emphasis on how spaces are produced, appropriated, and represented in locative media. In this study, *literacy* is particularly relevant, as it helps in understanding the medium specificity of locative media, hence making it possible to examine how the representation of spaces—spaces that exist virtually within a medium—reflect, communicate and help users to appropriate social interactions. Aligned with Dourish and Bell and the emphasis they put on representational medium, this thesis brings into focus the effects of locative media as the site for the construction and formation of practices that produce different place-understandings (discussed in detail in Chapters 4 and 5 on *Foursquare*), place-experience (discussed in detail in Chapter 5 on *Foursquare* and Chapter 3 on *Streetmuseum*) and place-associations (discussed in detail in Chapter 3 on *Streetmuseum*).

In this light, this thesis gives special attention to place, place-understanding, place-experience, the place-making potentials of new media, new forms and modes of practices that emerge from juxtaposition of place, locative media, and the specifics of the representational medium. It

the world differently. Here representational medium produces possibility or ‘actualizes some other possibilities’; it could possibly change spatial/social awareness, and create new potentials and thus new spaces. I would like to emphasize that representational medium is in relation to other entities (e.g. in relation to the material world; to our sensorial body, in relation to collective memory and many other elements that all together make an impact on how we perceive/conceive of space and place); it is part of the experience; an extension added to our multisensorial mediums to sense the world.

⁸²In this thesis, in some places, the term *media* is used where it often refers to broader categories of the general idea of channels of communication (TV, newspaper, etc), whereas if the term *medium* is used, the purpose is to emphasize the properties of communication: visual aspects/structures of the interface, or the way those visual materials and features communicate with a bigger frame (that encompasses agent/place/interaction). In this study, medium also refers to how information interacts or represents aspects of place. If the plural form, *mediums*, is used, the intention is to emphasize more the multiplicity of choices/channels, and it is not interchangeable with media; however, in other places, if the objective is not to draw attention to the multiplicity of channels, then the general term, media, could replace mediums. Medium could also be understood as an assemblage of a series of elements (bodies, interface, material and immaterial properties and the produced space, with various socio-spatial aspects). Medium in film studies mainly acts like a package comprised not of a set of physical elements but rather all types of relations/spaces between spectator, apparatus, screen and all social cultural understanding, and the complexities it produces, where each medium exerts a different set of understanding and mechanisms to engage with place. It has been discussed that displacing the elements of medium, from attached to physical place to detached and mobile, challenges the conventional ways people deal with place and spatiality (for further details please see: Silva, Adriana de Souza e. 2006. “From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces” 9 (3): 261–78.)

Some similar explanation can be found in the deconstruction approach of the Avant Garde artists of the sixties. During the sixties the Avant Garde film-makers such as Anthony McCall became involved in examining the filmic properties (medium-specific projects) where they re-examined the relation between properties of a medium. McCall challenged the prefix relations of projector, film and viewer. And through this shift the spectator’s role changed from passive to active. He addressed that the act of displacing elements of a medium can change the interaction of agent with place from passive to active. Cited in, Branden W. Joseph, Jonathan Walley and Christopher Eamon, 2005, Anthony McCall, The solid light films and related works.

⁸³ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

⁸⁴ *Ibid.* pp.192–200.

became increasingly clear that through the different frames that I adopted to examine the relationship between the three main ingredients of place/media/agent, the nature of study, as well as the amount of focus on each of the ingredients, might be accordingly affected.⁸⁵ Consequently, medium specificity helped increase awareness of how each representational medium implies different forms of understanding of place and defines different forms of environmental-knowing.⁸⁶

To build up a clear position as an architect towards the issue of place after locative media, I want to bring together insights from different areas of scholarship (particularly from sociology and human geography, cultural studies, and urban studies) in an attempt to give an overview of their approaches and contributions to the issues concerning the interface of new media technologies with place, and how the essence of place and place-experience has been reinterpreted (if it ever had a pre-ontology or essence) through the application of new mobile devices. To explore this area from the position of an architect, my PhD will address the following questions:

- How might the pervasive usage of media change the perception of space? In particular, how do hybrid or multiple connections change our perception or image of physical space? (These questions will be explored in detail in Chapter 6 on transcendental technology, and also in Chapter 4 on *Foursquare*.)
- How do new media technologies with their representational mediums⁸⁷ increase or change the quality/modality of associations with place and spatiality? (This question will be explored in detail in Chapter 3 on *Streetmuseum*.)
- How can we think of the remediation of the material environment with virtual/mediated information? (This question will be explored in detail in Chapter 3 on *Streetmuseum*.)
- How has the meaning of place changed in relation to new pervasive media? (These questions will be explored in detail in Chapter 6 on transcendental technology, and also in Chapter 3 on *Streetmuseum*.)
- How could architects benefit from and/or incorporate locative media technologies? What are the implications of those media for architects and urban designers? (Tools to communicate with users? Tools to test ideas? Generative tools to produce different spatialities?)

The structure of this thesis describes the journey I took through the PhD, which sets out the concerns and questions through a *theme-based approach*. In response to the initial concerns and research questions, and because of the choices of case studies, I developed key themes that best describe those initial concerns and later findings of case studies: these are either theoretical discourses or empirical findings that resulted from the close observation of case studies. Although those themes can be read as discrete studies, juxtaposing them reveals insights into the implications of locative media from different angles and perspectives covering issues of communication through representational medium (Chapter 5) / representational medium and image of place (Chapter 4), and representational medium and inserted values (Chapter 3).

This PhD engages with the relations between newly introduced forms of media, place-experience, and place-understanding, and investigates the socio-spatial implications of new media technologies using the terms introduced previously under the broad heading of mobility (mobility of information, image, text, and the mobility of people) with a specific focus on representational medium (how represented information on locative media platforms communicate with place). This study gives a detailed examination of how different, newly

⁸⁵ Medium in its nature is like a package comprised not only set of elements rather all types of relations between spectator, apparatus and all social cultural

⁸⁶ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

⁸⁷ 'Mediums' in plural form is used to emphasize multiplicity of choice/channels of communication /representation, and it is not interchangeable with media.

introduced locative media technologies remediate existing material environments or possibly provide alternative understandings and experiences of place and spatiality. Here I will study the integration of a number of locative media into physical-experience, discussing how abstract spaces communicate with physical/lived experience without being detached from everyday space.

In a broader frame, by bringing together a number of theories related to spatial experience, mediated experience, place, and media studies, this PhD contributes to the ongoing exploration of the potential of virtual media to remediate architectural material-space and place-experience.⁸⁸ In regard to the potential of media to create different spatiality or to remediate existing material environment, Matsuda has predicted how the architectural discipline is going to be divided into two main branches, one that will continue to deal with the material environment and one that will explore the possibility of virtual media for creating different place-experience.⁸⁹ His observation and prediction is provided here not only to remind the reader of the significance of mediation and possible directions and effects that might impose on the architectural discipline in future, but to bring up issues concerning the remediation of the physical environment with new media. In this respect, in the first case study (*Streetmuseum*), the potential of locative media to construct an alternative experience of the city (in this case London) and change the perception of places will be discussed.

I would like to underline here that the current text does not intend to contribute to unmasking the surface of locative media in order to explore political, socioeconomic, or governmental factors, nor marketing aspects and strategies, or other layers operating behind the scenes, all of which contribute to determining the current state or the future directions of locative media. Neither does this study cover issues such as privacy, security, networked community or the decentralization of power,⁹⁰ activism, civic rights, or hacking. Although I acknowledge the importance of, and increasing interest in, those operational factors/or aspects, the scope of this thesis—influenced by time limitations, the interest of the researcher, and the choices of applications available for detailed study—and the range of discussions therein is different, dominantly centered around place understanding. This study in particular looks at the generative effects of locative media from the individual level, and only the front visible layer, in relation to place-experience/place-attachment. I also should mention here that, although the discussions on locative media presented in this thesis *are relevant to and clearly have overlapping areas with social networking*, it does not concentrate on social networking or communication networking, and as the term *locative media* suggests, it deliberately focuses on location/place, and deals with media information that is functionally bound to location.

I would like to differentiate the core of this study from other interesting studies that work specifically on the potentials of networked communities/sites. Although those studies are relevant (both to this study and to architectural discipline in broader terms), and although I give these topics some attention in chapters 2 and 4 and explore some of their implications—such as the potentials of networking as a vehicle to change the structure urban practices, and “playing

⁸⁸ By remediation of media I mean the potential of locative media to create alternative spatiality and spatial-understanding of places. For instance, by using game applications users can explore a place based on a quest and experience the same place in a totally different way from a user who is not using any mediating devices. Sometimes remediation could refer to the possibility of giving new characteristics to places: for instance, by revealing narratives and igniting the history of the past, media can create a feeling of closeness, or develop some form of relation to the place concerned. Remediation of the built environment by media could also relate to the possibility of designing an experience, not through material environment but rather through adding virtual layers: the base case scenario is augmented reality applications that define an alternative stage for interactions.

⁸⁹ <http://www.dezeen.com/2014/10/15/keiichi-matsuda-architecture-augmented-reality-architects-become-game-designers-filmmakers/>

⁹⁰ For more information in this field please view: Hemment, Drew, and Anthony Townsend. 2013. *Smart Citizens*. FutureEverything Publications.

the leading role in conceiving, designing, building, maintaining our cities of the future”⁹¹—the main purpose of this study is to explore only those implications of locative media that relate to place-experience, sense of place and place-attachment. This is why I chose methods such as ethnography/walking, and video recording/interview that directly deal with users’ experience at the time of encountering place/interface. And, while I was exploring/observing at this level the user interacting directly with urban place/interface, I noticed, suggested and marginally explored other possible implications of locative media applications specially for the field of architecture, and whether they could be seen as site analysis tools/tools to create opportunities to engage citizen more creatively/effectively in the development of the cities.

There is an equal contribution to empirical studies and theory building on discourses regarding media and place. To discuss and illustrate the process of developing and doing this PhD, I started with theory: theories related to media in particular, plus theories of ‘place and spatiality’. *Place-making potentials of media, spatial-transcendental technology, image of place, and live montage* are the themes of those theories that this PhD has either empirically tested or has helped to develop.

I found empirical data to support existing theories: aligning, testing and substantiating discussions that either had only been set out theoretically, or had little empirical studies associated with them. Moreover I developed and tested a number of innovative tools (a methodological tool) to produce new knowledge about under-studied applications. By developing those tools, a detailed study of those applications was conducted/provided and the knowledge gained from those close studies then fed back into the development of theory and the existing discourses concerned with the place-making potential of media and the spatial implications of locative media.

With that in mind, in the following I set out the structure of the chapters of this thesis, where each chapter has a theme running through it, and based on its theme I pulled together related theories and topics. Each chapter contributes to either testing theory (through empirical study) or building on existing theories of concern with place after locative media.

Chapter 1: Live montage

This chapter, as the setting-up section, sets out to ground the main text in relation to a wider research context concerned with media and place, studies that circulate and discuss related interests and concerns. Live montage was a way of exploring aspects of contemporary urban space and practices, a way of setting a wider understanding of the current state which is an amalgamation of media practices and visual technologies in all forms—including screens, projections, video projections, game hubs, etc.— and the urban mobilities of bodies and information.

Chapter 2: Urban implications of locative media

Moving on from the setting of the study undertaken in the introductory chapter, by emphasizing the representational medium, the second chapter also negotiates the potential spatiality (spatial practices) that emerges from the juxtaposition of representational medium (e.g. maps, images, hypertext, etc.) with the material-physical world. By discussing a number of categories of application (Urban Tagging, user-generated maps, and social media applications), it also sets out what we can expect from a representational medium in terms of altering spatiality and

⁹¹ Hemment, Drew, and Anthony Townsend. 2013. *Smart Citizens*. Future Everything Publications.

appropriating existing urban spaces (e.g. urban transit space), or defining new experiences (augmented reality applications).

Chapter 2 is effectively the opening of a discussion of how spatiality could be produced through integrating some aspects of representational medium, and how by applying different forms of representation we can expect the development of new forms of understanding of physical spaces through the juxtaposition of representational media and physical space. It is becoming hard to distinguish the extent to which spatiality perceived by an urban traveller results from the on-site potentials of the material environment or is brought to the site through possibilities of technology. Since we are exposed to information delivered to us in different forms of media at the same time as physically encountering the urban context, it is getting harder to distinguish between mediated and immediate experience. Hybrid perception of spaces is no longer a choice: it is becoming more and more a fact that we are dealing with everywhere.

In Chapter 2, I set out the spatial implications of a number of locative media platforms discussed in three categories (Urban Tagging, user-generated maps, and social media applications), where each has specific representational mediums (image, maps, text, notifications), and detail how they effectively mediate spatial experience or become platforms that communities can employ to communicate with policy-makers. Going through different examples of locative media and their implications on urban experience from different perspectives, the aim of Chapter 2 is to serve as an introduction to the key concepts and terms or references deployed in the following case-study chapters. I address a number of applications that represent aspects of place through their visual-representational mediums, in which the representational medium itself becomes part of the experience of urban space. I discuss the possible urban-technological implications of locative media from an individual/personal level through to that of governance and planning. The potential spatiality of those three categories, and issues related to them, will later be examined and discussed through the case studies. Those three main categories (Urban Tagging, user-generated maps, and social media applications), and issues raised from studying them, determined the selection of case studies.

Intrinsic⁹² case studies:

Case studies not only act as sites in which to pursue empirical studies, but also as instruments to test and understand theory. Here, case studies work at different levels: they provide a set of lenses to refine the initial research questions I had, and polished those questions based on the context; they also act as generative sites to explore, produce and test socio-cultural knowledge of current technological use of locative media.

In the sections exploring case studies, after moving from the setting-up stage of the study', which helps to illustrate complexities and potentials of media, and after discussing existing theories and discourses of media, I examine the grounds of theory introduced in earlier chapters. The structure of each case study features a theoretical framework, a methodological approach and empirical studies.

Chapter 3 (first case study): *Augmented reality applications (Streetmuseum)*

The first case study is of the *Streetmuseum* application. Through this particular case study, socio-spatial implications and patterns of using an augmented reality application (which negotiates the social and behavioural norms of using this application in real time and promotes the discovery of associations between the contents of locative media and physical urban context) was explored in parallel with developing theoretical discussion and concepts of *place-making*

⁹² Stake, Robert E. 1995. *The Art of Case Study Research*. SAGE Publications.

and *remediation potential of locative media*,⁹³ based on the close reading of relevant theory. Besides examining theories of hybrid spaces, this case study helped to develop the theory further. Remediating the material-environment, the *Streetmuseum* application provides evidence of how new media, by overlapping urban materiality with immaterial layers of images or films (collective-shared stories), can affect place-experience and associations of users with that place. I discuss how media could alter the spatial experience of places by bringing aspects of culture of the (urban) context into play in real-time, making narratives of space alive and perceivable. Based on findings of this case, I will discuss how those media, by linking memory and personal subjective opinion with collective memory, connect users to the materiality of urban spaces and construct stronger associations with the context.

The idea is, through close observation (zooming in), to see the spatial implications of media, and establish the correlation of observed behaviour of users of locative media technologies against the existing theories. By having a theoretical frame, this allowed focus to be placed on existing theories related to the particular case under study, and to examine aspects of those existing theories: by doing this I was able to develop a clearer review and to discuss whether those theories were applicable or not in my cases, and if so to what extent.

Through discussing relevant theories, and based on the findings of this specific case, I discuss the concept of ‘place-making potentials of locative media’ to emphasize the inter-dependency of place and ‘on-site media’. I also show that through the usage of media in urban contexts, the borders and values of familiar places could be (re-)defined according to the practice of interface-dependent place production, or, in other words, through the potential of interface to offer different types of place-making.

To capture aspects of an emerging condition which is the superimposition onto urban spaces of virtual information available at the point of encountering places, and to observe some aspects of mobile participants’ behaviour and their way of interacting with urban-mediated places, I adopted, developed and conducted a multi-method approach, and developed tools and analytical techniques that responded to the particular needs of each case study.

Regarding the first case study, which negotiates aspects of augmented reality through looking at *Streetmuseum*, in order to gain an insight into the social and individual aspects of interacting with media in real physical situations, and to figure out the interplay between context, new media and users, I needed to grasp the *precise dynamics of use of this application at an exact time and on the exact point of its real context*. Therefore an ethnographic walking video-recording arrangement was developed. This method is in alignment with broader Mobility approaches. The proposed methodology is constructed using the methodologies⁹⁴ “on the move” and “walking with”⁹⁵ as methods of walking, observing and capturing patterns of moving and making sense of places.⁹⁶

⁹³ By remediation of media I mean the potentials of locative media to create alternative spatiality and spatial-understandings of places, for instance by using Game applications users can explore a place based on quest and experienced the same place in a totally different way from a user who is not using any mediating devices. Sometimes remediation also could refer to the possibility of giving new characteristics to places: for instance, by revealing narratives and igniting the history of the past, Media can create a feeling of closeness, or develop some form of relation to the place. Remediation of the built environment by media could also relate to the possibility of designing an experience, not through material environment but rather through adding virtual layers: the base case scenario is augmented reality applications that define an alternative stage for interactions

⁹⁴ Büscher, Monika, and John Urry. 2009. “Mobile Methods and the Empirical.” *European Journal of Social Theory* 12 (1): 99–116.

⁹⁵ Sheller, Mimi and Urry, (2006) ‘The New Mobilities Paradigm’, *Environment and Planning A* 38(2): 207–26.

⁹⁶ This method of close observation of movement/mobility is also referred to as an “action-oriented research method”.

Chapters 4 and 5 (both of which investigate the application of *Foursquare* but cover different socio-spatial aspects):

Discourses and findings related to this specific application will be developed in two related chapters.

Firstly, in Chapter 4, through the notion of *image of place*, I will investigate the influences of representational medium (e.g. applications as platforms) on image formation, or the construction of image of place. I will focus on the potential of locative media mainly in terms of making sense of the urban environment (environmental-knowing⁹⁷), enabling people to appropriate social interactions, and increase the functionality and legibility of urban places/spaces.

In the second part of this case study, set out in Chapter 5, the focus will shift towards predominantly emphasizing the social aspect of this application. The aim is to address the necessity of embracing the change in relations between social media technologies and socio-spatial aspects of place-experience, and discuss the potential of the representational medium (here provided by a case study of *Foursquare*). I will discuss how being in constant contact through representational medium -is becoming an important aspect of place-experience for users of such an application. By acknowledging that theories of place-experience do not deliver the essence of the situation in which social media enters urban experiences, I will discuss the concept of *Mediated social co-presence*: and through that I will examine alternative and *flexible forms of sociability* offered by new media technologies, which has place-related implications. Adaptation of tracking systems coupled with accommodating representational medium enables place and place-understanding to be perceived *in a more relational nature* and is more dependent on medium, where medium is becoming *actively involved in the practice of place-experience and sense of place*. By capturing the complexity of the juxtaposition of the representational medium and GPS tracking systems, I will discuss how representational media do not act separately from lived space for users of such applications, and how users are practising being with physically absent yet present others. Those representational mediums, by offering mediated experiences, affect the experience of urban space, and related discourses regarding place attachment (sense of place). I begin the chapter by providing a theoretical framework and overview of issues related to the theme relevant to the application under scrutiny, and then in the second part of Chapters 4 & 5, after discussing the adopted/developed methodologies, I move on to study that particular theme within empirical frames.

Chapter 6: Spatial-transcendental technology (main discussion)

In this chapter, some theoretical and empirical findings of case studies are summarized, discussed and supplemented with a number of discourses regarding place-understanding after new media technologies. The bulk of material for this text was drawn from a number of disciplines involved in exploring the consequences of media technology on place-understanding; across various studies, including media studies, communication, human geography, globalization, , urban studies, sociology and so on. In this chapter, I argue that there is a necessity to re-conceptualize place after new media technologies, in a similar way to that which had to be undertaken in a previous era influenced by the new technologies of mobility (automobile, train, and so on) when they significantly affected place and place-understanding. To do so, first I introduce a few analytical and conceptual tools to develop my argument. Through borrowing architectural tools and bringing conceptual-analytical methods of viewing to the discussion, two main sets of understanding will be provided.

The contribution of Chapter 6 is to discuss and develop two sets of views regarding new media technologies and place. Firstly, mobile media technologies could be discussed as transcendental

⁹⁷ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

tools⁹⁸: that is, tools that change the understanding of place by transcending geographical territory and spatiality, and seeing over and above the physical limitations, thus allowing our understanding to go beyond the barriers of physical borders. Secondly, by zooming in and seeing things from within, the chapter discusses technologies such as Socio-Formative spheres that could reconstruct our knowledge from within particular social and cultural threads.

Chapter 7: Summary and contribution chapter

The final chapter is dedicated to identifying issues and concerns that deserve more attention and further discussion. In this chapter, a summary and the main contribution of this thesis will be provided in a different configuration, by dividing it into broad categories of: *Identifying and examining theories related to locative media; developing tools; developing theory*. Then to draw to a close with a forward-looking approach, some suggestions and ideas will be proposed for further studies.

⁹⁸ 'Transcendental technologies' is a concept coined by geographer *Kellerman* to refer to all technologies that help to overcome physical and perceptual borders of understanding (airplane, aerial photography, transportation, information transportation, automobile, telephone, internet, and mobile communication devices). Cited in Kellerman, Aharon. 2006. *Personal Mobilities*. Routledge.p.72.

CHAPTER TWO: SPATIAL AND URBAN IMPLICATIONS OF REPRESENTATIONAL MEDIUM

Negotiating the Urban/Spatial Implications of New Media Technologies

“New Technologies inspire us to dream up new ways of living”¹

Abstract

In this chapter, which works as an introduction to the main case studies that follow, I will mention three main categories of locative media application, in order to establish a discussion through examples and evidence concerning how representational medium interacts with aspects of spatiality and place. These three categories (Urban electronic Tags, user-generated maps, social networking platforms) will provide the underlying focus for the following case study chapters. The main reason to study such applications is their capacity to construct spatial relations with place and place-experience or place-understandings mainly through their visual materials or their representational mediums (e.g. maps, images, text, films, sound recordings, etc.) By that I mean a possible dialogue that those representational medium can develop with physical urban places, which can in turn potentially affect spatial understanding,² place-experience and sense of place, or collective understandings of place, and so on.

As an architect with an interest in maps, mapping, visual materials, and representational medium, I was looking for new implications of maps and other forms of representation, which now become integrated parts of and strong features of new media platforms. Thus the choice of these categories and consequently the subsequent case studies was based on my interest to explore new usage/adaptations and implications of accommodation of visual materials/abstract representation and particularly maps in a new context: Locative media technologies.

By discussing a number of categories of application, this chapter sets out what we could expect from representational media (maps, images, multi text) in terms of altering spatiality, appropriating existing urban spaces (e.g. urban transit space), becoming intermediary platforms, or linking tools between communities, architects and policy-makers. The latter issue will be discussed mostly to give an insight into how such newly introduced platforms work and might act in relation to architecture, as links between communities of users and planners, or as site-analysis tools and mediums.

Introduction

Place is no longer only the setting where activities take place. The experience of spaces has now been mediated with different types of technological devices that we use in sites, such as mobile phones, moving images and screen projections. Since we are exposed to information delivered to us in different forms and via different media at the same time as physical encountering with the urban context, it is getting harder to distinguish between a mediated experience and an immediate one, and consequently the representation of space becomes part of the experience of space. Hybrid perception of spaces is no longer a choice: it is becoming more and more a fact that we are dealing with everywhere. Since the introduction and widespread take-up of the mobile smartphone, people move differently around the city: their presence in space is divided between the real, the virtual and the social. It challenges their simultaneous attention to context, themselves and other people, offering new

¹ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.p.17

² By spatial understanding I highlight that spaces could be interpreted/perceived differently, by means of implying new representational mediums.

potentials of experience, social behaviour and a reinvigoration of content and context, past and present.³

Locative media, as a type of location-based “information technology, provides sites and occasions for the development of new forms of environmental knowing.”⁴ The role of the representational mediums as the medium of communication between real space and mediated information has been hinted at by Dourish and Bell (2011) as *literacy*.

Acknowledging that spatiality (spatiality/spatial understanding and spatial practices) that is created from juxtapositions of representational medium (e.g. maps, images, hypertext, etc) with the material-physical world cannot be known, or mapped, without knowing how the representational mediums themselves are interacting with urban [real] spaces and how they are involved in practising space and spatiality; thus I place my emphasis on the representational medium (how information is presented), and accordingly how it interacts with physical space.

Although there is extensive literature on virtual and social media, social networking sites and other applications accessed through the Internet, there are very limited numbers of studies which have aimed to examine aspects of the shift in the way we understand virtual information that is underway with the emergence of location-based technology.⁵ Raley (2008) asked an interesting question, one that to a degree represents parts of my frame of enquiry in this PhD: *what are the cultural, artistic, and literary possibilities of locative media, specifically [in regard to place and spatiality] in light of the uncertainties that have been raised about the capacity of locative media itself to resist capture by military, commercial, and policing operations?*⁶

Locative media as a term—or, better, as an umbrella—includes different forms of practices (engaged with location-based services) that can generate new potentialities for facilitating social practices and develop “forms of social appropriation”⁷ or decoding and showing/representing/tracking aspects of the production of space.⁸ Locative media has evolved from its original field as an artistic practice: nowadays, locative media comprises a wide spectrum of art, commercial marketing, social networking, travel and tourist applications and recently even governing and policy-making, socio-cultural aims and objectives. Lemos (2010) categorized locative media applications into four main domains: electronic urban annotations, mapping and geo-localization, location-based mobile games, and flash and smart mobs.⁹ Here in this chapter, following Lemos’s categories, I will study a number of applications that represent aspects of place, limited only to those application that have place-relevancy.

I will cover only three main categories, two of which were mentioned by Lemos (electronic urban annotations and user generated maps) to which a third (social media applications) will be added, arising from concerns and theoretical issues related to how representational media interact with physical spaces. Social media applications, unlike some augmented reality applications, do not directly

Jakob Borrits Sabra. 2014. “Hybrid Cemeteries: Dealing with Death – Exploring 50 the Connections between People, Places and Social Mobile Media.” In *Non-Refereed Proceedings of the 2nd Media Architecture Biennale Conference: World Cities*. Copenhagen. <http://mab14.mediaarchitecture.org/wp-content/uploads/sites/8/2014/04/MAB14-Non-Refereed-Proceedings.pdf>.

⁴ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press. pp.130–131.

⁵ De Souza e Silva, Adriana, and Daniel M. Sutko. 2011. “Theorizing Locative Technologies Through Philosophies of the Virtual.” *Communication Theory* 21 (1): 23–42.

⁶ Raley, Rita. 2008. “On Locative Narrative.” *Genre* 41 (3-4): 123–47. P.130 emphasis added.

⁷ Rowan Wilken. 2012. “Locative media: From specialized preoccupation to mainstream fascination”. *Convergence: The International Journal of Research into New Media Technologies* 18(3) 243-247.

⁸ Raley, Rita. 2008. “On Locative Narrative.” *Genre* 41 (3-4): 123–47.

⁹ Lemos, Andre. 2010. “Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society” 13 (4): 403–20.

represent or deal with aspects of place but can communicate strongly with everyday life actions and interactions (maps in this format are used to initiate and maintain social interactions). In present-day mediated urban experiences, social co-presence has become an integrated aspect of many applications (e.g. game applications, social applications), and for this reason it is necessary to mention it as a group of applications employed during the experience of urban places.

The main reason to study such applications is their capacity to construct spatial relations with place and place-experience mainly through their visual materials or their representational mediums. By that I mean a possible dialogue that those representational media can develop with physical urban places, which can in turn potentially affect spatial understanding, place-experience and sense of place, or collective understanding of place, such that spaces could be interpreted or perceived differently, by means of employing new representational mediums.

Here I will also address a number of location-based applications that either become part of the urban place-experience at the level of each user, or that possibly have urban implications (e.g. socio-cultural implications, or governing and planning purposes). The former are those applications that influence the experience of spatiality at the level of the user (each user) by becoming part of the urban place-experience; this group of applications mostly operates by forming and framing our interaction with urban spaces. The latter group become practical mainly for groups (e.g. marginal groups, activists, people from a particular community or neighbourhood, etc.), by becoming platforms for developing dialogue, by connecting urban users to policy-makers or those with urban renovation and planning purposes, those that enable users to share their viewpoints, concerns, and thus break lines between personal/collective understandings.

By doing so, some examples of these three categories will be addressed and some possible spatial implications of each category sketched out: these will be fully examined later through the specific case study analysis.

The first category that will be introduced is Urban Electronic Tags:

1. Urban Electronic Tags/ augmented reality applications

Tracing back tagging applications to previous modes of practice that augment urban space with information, it follows graffiti, tags, stickers, posters or other forms of practice and genres that augment physical places with indexical information (e.g. *Sonic City (2002-2004)*,¹⁰ *Urban Tapestries (2002-2004)*,¹¹ *Yellow Arrow (2004)*, *GeoGraffiti (2007)*, *Murmur (2003)*¹²). Electronic annotations are new ways to write and read the urban space with mobile devices, and render the city and its narratives visible. The new electronic locative media has mainly been discussed in terms of being a new way of making visible previously invisible aspects of urban space: they have been discussed as “cartographic attributes of the invisible”,¹³ “[...], gestures towards a cartography of the intimate and the quotidian, with users navigating the landscape [...], that renders the ephemeral”.¹⁴ Some others

¹⁰ For more information please see <http://www.lalyagaye.com/archive/?p=12>.

¹¹ This specific application offers its users a different sensory experience of context through telling narratives of the site, in a multi-sensory format of visuals, sound recordings, films, text, images, maps, etc. Collectively, putting together pieces of personal documentation (in multi-format) can provide a different understanding that one might not see or grasp individually. For further information about this interesting application please see the aims and objectives behind it addressed by the team members in a related paper presented at the Mobile Leisure and the Technological Mediascape seminar as part of the DigiPlay: Experience and Consequence of Technologies of Leisure, 26th April 2004.

http://proboscis.org.uk/publications/SNAPSHOTS_sensingthecity.pdf

¹² Developed by CFC media lab, 2003, Toronto, which annotates urban space with audio documents. <http://sanjose.murmur.info/about.php>

¹³ The term was used by (Gibson, 2007,19), cited in Raley, Rita. 2008. “On Locative Narrative.” *Genre* 41 (3-4): 123–47. P.123.

¹⁴ Raley, Rita. 2008. “On Locative Narrative.” *Genre* 41 (3-4): 123–47. doi:10.1215/00166928-41-3-4-123.

refer to the potential of igniting the past¹⁵ through connecting past and present, or, as practical or supportive platforms, applicable for purposes of individual support because of representing context-related information.¹⁶ There are examples of annotation applications¹⁷ that detect users' locations and unfold additional, context-related data to users: *WikiMe* (2008), *Geopedia* (2008), *Layar* (2009), etc. Those applications with socio-cultural purposes, by tagging (attaching) cultural or historical information to places, eliminate the need to leave the place to look for such information.¹⁸

In another view, by providing users with articles and information about each physical location, similar to other applications (e.g. *Geopedia*(2008), *People Make Glasgow*(2014), *London travel Guide*(2009), *Streetmuseum* (2010)), this type of application gives users notice of the presence of landmarks and iconic buildings and may increase the chances that a user notices those places¹⁹ (this aspect is not only explicit to this media, and it was provided to some degree by prior mediums: guidebooks or mass media/digital media). But the distinctive aspect is, instead of having to access supplementary information from locations physically removed from the place concerned (e.g. from home computers, libraries), accessing this information based on location changes or redefines the relation between virtual and physical as separated domains.²⁰ In this specific example, this is done by relating and defining a dependency between virtual information and physical location: the virtual information provided by such an application gives significance to physical places, makes them noticeable, and respectively makes some other places less visible. This aspect is not only limited to the new media technologies; in fact, the old technologies (such as printed media) also partially offered similar effects in terms of giving readability to cities or making visible buildings/places. This particular quality could be seen as an effect that overlaps between old and new media, but a difference could be the interactivity and possibility of feedback that is only provided in new media: where everyone has the right and ability to give his/her opinion in regard to what experience s/he had, and whether to recommend that place to others or criticize it (this will be discussed further in Chapters 4&5). The difference between old and new media which interestingly has an impact on architects and architectural practice is the opportunity to hear the real voice of users/visitors of a place; in old media, once a new building was designed/built in a city, the right to give review or criticism only explicitly belonged to elites/critics, and the ordinary people's voice was rarely heard or conveyed to the designer. But in new interactive media (by interactivity, I mean the possibility of giving feedback, writing comments and interacting with sender/receiver, designer/user), users/visitors of the space can give their opinion to the architect (e.g. put their comments behind the image of the building, present them on any website that discusses features of building/design, or for example on the architect's Facebook page or the firm's website), and the architect of the building can hear opinions and criticisms without any filter. This way of direct feedback was previously unlikely to be possible.

Another interesting difference (between old and new) is: filtering unwanted information related to a location/place. This aspect is highlighted in locative media applications, where information is directly related to location. *WikiMe*, for example, uses cellular positioning functionality that locates and detects a mobile phone's position in physical space, and based on that location, provides Wikipedia feeds and place-related texts. But unlike the experience of browsing the Wikipedia website, because of the geo-tagged articles, *WikiMe* searches and filters out unrelated articles, to provide or push only

¹⁵Ibid.

¹⁶ Bechmann, Anja, and Stine Lomborg. 2013. 'Mapping Actor Roles in Social Media: Different Perspectives on Value Creation in Theories of User Participation'. *New Media & Society* 15 (5): 765–81. doi:10.1177/1461444812462853.

¹⁷ Tagging applications also are referred to as annotation applications.

¹⁸ De Souza e Silva, Adriana, and Daniel M. Sutko. 2011. "Theorizing Locative Technologies Through Philosophies of the Virtual." *Communication Theory* 21 (1): 23–42.

¹⁹ De Souza e Silva, Adriana, and Jordan Frith. 2010. "Locative Mobile Social Networks: Mapping Communication and Location in Urban Spaces." *Mobilities* 5 (p.491): 485–505.

²⁰ De Souza e Silva, Adriana, and Daniel M. Sutko. 2011. "Theorizing Locative Technologies Through Philosophies of the Virtual." *Communication Theory* 21 (1): 23–42.

those articles that are related to that location. Closer feeds come first on the list provided on screen, and those farthest away come last on that list. In this example, location becomes essential (a determining factor) in deciding what sorts of information are delivered to the user. In a way, location becomes the interface or the trigger for delivering virtual information. In another sense, physical space becomes the virtual repository (library) for virtual articles. If you are within a specific proximity, the chances of getting certain articles are higher.

Providing personal/customized place-experiences

Locative media applications are discussed from many different standpoints: one interesting approach is to see the potentials these applications have to make place-experience more personal, customized and subjective. People can explore the city with different layers/filters based on their different interests: for an individual who is interested in films, movies or games, compared to someone interested in history or rituals, different filters are suggested, and users can filter information respectively. Customization and giving users the choice to filter unwanted information and provide specific information is more and more enabled, as applications become more pervasive and widely used.

Layar (2009) is an example of an application that provides a customized view of information. With *Layar*, “widely popular Geo-layer technology allows location-based information to be displayed in a heads up augmented view of the real world.”²¹ The difference between this application and the previously mentioned apps is the possibility it provides for layering and customizing data: this application, with more than 150 filters,²² categorizes the information (geographically tagged data), making it available as layers, some of which are available in the ‘recommended’ section as shown in the screenshots below (Fig. 2.1). A user can search for examples in the layer “archINFORM, which displays architectural information for nearby buildings”²³. This application can also combine both a scannable data search with location-based geo-data, which “opens up exciting new possibilities: Imagine scanning an ad for a shop to see a Geo Layer of nearby locations, or viewing the locations of nearby events by scanning an event calendar.”²⁴

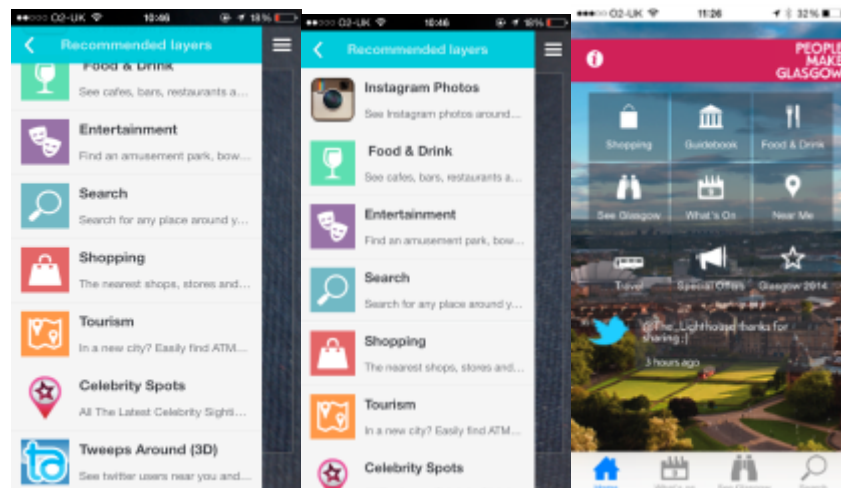


Fig. 2.1. Screen shots of two different applications of: *Layar's* application and *People Make Glasgow*. In the case of *Layar*, these screen-shots show the customization of information related to each place. Although some of these filters

²¹ Application's main website: accessed at <https://www.layar.com/news/blog/2013/10/24/introducing-the-new-layar-sdk-with-geo/>

²² Ibid.

²³ Main website of the application, <https://www.layar.com/news/blog/tags/geo%20layers/>

²⁴ Ibid

have not developed fully yet, mostly because they are based on crowd-sourced data, and when the number of people incorporating is small, the information is consequently limited. But for most of the filters, the user can decide what form of information s/he is looking for, and based on relevancy, the application delivers information. (The filters cover a wide range of information from those that enable searching with the purpose of fulfilling daily needs, such as shopping, foods, etc., to others that filter information regarding to tourism, entertainment, celebrity spots, etc.)

Making visible narratives of the city

Tagging applications (whether the tags exist on a map or pop onto the screen when a user gets close to points in space) all *make visible narratives of urban spaces* which were previously hidden. *Urban Tapestries (2002-2004)* is an example of locative media that becomes an archive of collectively authored personal information and narratives of people from the UK, that besides creating a collective understanding of places, based on the vision of its developers, is becoming an “anthropology of ourselves[UK users]”,²⁵ through sharing personal stories in multimedia formats. But besides making visible the invisible narratives of space, or becoming an anthropological platform, these kind of recently adapted applications are a means for cultural bridging and meaning-making. Tourist studies and heritage organizations are developing an interest in such applications, to ensure technology could be used to foster a cultural connection with past histories by representing aspects of the past and cultural/social issues, histories and rituals, making heritage accessible as a layer (of information) that could enhance our knowledge of urban places. Karimi & Hammad (2004) noted that those groups of services that incorporate location information with contextual data provide a value-added experience to users’ ordinary experience.

Streetmuseum (2010), *Streetmuseum-Londinium (2011)*, and *cinemacity (Paris)*²⁶ are other examples of applications that operate by adding extra information to physical places, and as a consequence of the juxtaposition of representational medium and corporeal bodily experience, they unfold different levels of narratives, provide different understanding of urban space for users, and consequently give a different sense of place. De Certeau points out the possibility of re-interpreting urban spaces by re-valuing everyday practices when a subject transforms existing space through use and interaction.²⁷ When a user employs these mediating platforms, through the combination of representation and reality and through interpreting space with new information and understanding, space is thus transformed, even if only partially and temporarily.

Defining a stage, and providing a designed engagement with urban space, is evident in those applications which are designed for providing playful experiences: gamifications of theme parks²⁸ and of tourist walks (e.g. *urban tapestries*,²⁹ *Londinium application*)³⁰. One of the interesting aspects of experience of these types of application, especially the augmented reality applications, is being a form of *playful activity* that operates by connecting real situations with virtual representations. They thus form a new situation, one that engages the user in co-experience of mediation simultaneous with reality. In some augmented reality applications, especially the ones that represent cultural aspects of urban spaces such as *Streetmuseum*, representational spaces produce an authentic experience of place, mostly because they set up a stage for representation and reality to coexist and enrich place-experience.

²⁵ Quoted by developers of the application http://proboscis.org.uk/publications/SNAPSHOTS_sensingthecity.pdf

²⁶ This application geo-locates clips/movies around city of Paris, in the very locations where they were shot, <http://cinemacity.arte.tv/balade/la-bas/>

²⁷ Certeau, Michel De. 2011. *The Practice of Everyday Life*. 3rd Revised edition. University of California Press.

²⁸ Feifei, Xu, Jessika Webber, and Dimitrios Buhalise, 2014. “Gamification In Tourism.” In *Information and Communication Technologies in Tourism 2014: Proceedings of the International Conference in Dublin, Ireland, January 21-24, 2014*, by Zheng Xiang and Iis Tussyadiah. Springer Science & Business Media.

²⁹ In the description of this application the developers explain that: the context that this application aims for is community, to record layers of histories, experiences and events related to familiar places and link that to the context and the locations and make them accessible to everyone. “As the name suggests, it aims to knit together many layers of narrative and discourse over the topography of the city”. Cited in:

http://proboscis.org.uk/publications/SNAPSHOTS_sensingthecity.pdf

³⁰ <http://www.museumoflondon.org.uk/Resources/app/Streetmuseum-Londinium/home.html>

This discussion will be developed in Chapter 3, which discusses the detailed case study undertaken on Streetmuseum. By appropriating space and providing a unique experience for users of such applications, at least for their first encounter, these types of locative media apps with electronic tags and other related artistic practices provide evidence of new forms of hybrid place-experience by providing content about places—bringing content to context—through the unfolding of informational layers.³¹

Inserting different values/different forms of interactions

Being exposed to such an experience, users of these kinds of applications do not experience urban spaces the same way as previously. For example, in augmented reality applications or those designed for tourist gamifications³² / tourist walks, the space of a walk is not neutral: rather, it is altered and reconfigured around inserted interface-points, and these interface-points become the defining armature of the walk. Accordingly, the surrounding spaces of those points also will be re-valued and reconfigured relationally. We are getting to the point where we can say that media is becoming deeply involved in access to and use of spaces,³³ not least in its new forms and practices. For such spaces, new means of value and power are introduced or added to place-experience that derive from and come with imported information (added to the site-experience), which would also define the boundaries of interactions. One of the findings of this research is that for a user of such applications, the combination and relation between screen, space, information and urban landscape as the stage is altered, due to the virtual bringing new possibilities, new meaning, and new interactions. At this form of interaction, locative media acts as a possibility (virtually) that conceivably enriches, alters or defines a different stage for interaction. (I will discuss findings related to this observation in detail within Chapter 3 on Streetmuseum.)

These applications are also making room for certain types of activities that are not part of the norms of behaviour that are accepted in the street, such as walking and holding one's phone up towards buildings while looking for emerging images on screen, or walking towards and standing on no obvious physical point while one tracks the virtual point on one's phone. These are simple examples of how these new media applications are finding their way into the behaviour we now frequently witness on our city streets, and asking for different attitudes and forms of interacting.

How representation alters spatiality of place/space

The impacts of locative media technologies on place could be seen from the angle of spatiality (where it is explained how spatiality of a place/space is altered through adding or using applications and through the significance of representational medium). The ability of representation to construct spatiality or to alter the pre-existing spatiality of a place or a situation is discussed and developed by human geographer Jansson,³⁴ through his readings of Lefebvre, as *texture space*. Jansson (2005) used the term and addressed how each space has a textural affordance: “The texture of space can be understood as the material structure of behavior and communication”³⁵ when the textural affordance changes the space and offers different levels of communication, and thus interactions. This implies

³¹ Lemos, Andre. 2010. ‘Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society’. *Space and Culture* 13 (4): 403–20. doi:10.1177/1206331210374144.

³² Term used in Feifei, Xu, Jessika Webber, and Dimitrios Buhalise,. 2014. “Gamification In Tourism.” In *Information and Communication Technologies in Tourism 2014: Proceedings of the International Conference in Dublin, Ireland, January 21-24, 2014*, by Zheng Xiang and Iis Tussyadiah. Springer Science & Business Media.

³³ Jansson, André. 2005. “For a Geography of Communication.” available at <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>. Also see: John Forans, 2006, *Media passage in urban spaces of consumption*, Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.

³⁴ Ibid.

³⁵ Stina Bengtsson, 2006, Framing space, page, 191, Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.

that the textural dimension of space determines communication and behavioural affordance of that space, imposing certain behaviours and social interaction. Communicational and representational medium, by providing different levels of textual affordance, effectively changes the communicational structure of space, thus offering different levels of spatiality.³⁶

Texture of space helps to theorize a better understanding of how representational mediums become spatial factors forming and framing our interaction with urban spaces, especially these days in its different forms of mediation and communication. If we understand that space (and spatiality) has textural affordance (referring to the communicational dimension of space), by extending or changing the communicational affordance of space, spatiality accordingly will be experienced differently. Here textural space acts as linking concept that helps to connect media and spatiality. The material construction of our everyday life could be easily changed by adding or changing the media environment.³⁷ Bengtsson refers to this matter through an example, explaining how the materiality of a situation can be subtly changed through an action or practices (for example by using an application that makes us familiar with a site, our knowledge of site alters). Thus, the possibility to act or interact in that situation changes.³⁸

There are different accounts (explanations) describing how the spatiality of a situation, and the experience of space by a user, is altered by inserting and using locative media. The above-mentioned theoretical discussion (the textural affordance model set out by Jansson) helps us to understand that representation alters and affects spatiality, mainly changing the textural affordance of space. Since all forms of representation occur in space, and all spaces are produced through representation (forms of communication),³⁹ it is not hard to grasp that representational mediums, by extending or changing communicational affordance of spaces, change spatiality or experience of spatiality. For instance, what new augmented reality applications do is, on one level, by reframing the site they are developed for, or through changing the textural affordance of those spaces (by providing possibilities for people to communicate beyond the borders of a location), change the characteristic of that location in which they exist and the place they experience. For users of such applications, media changes the situation of interaction and accordingly brings about different norms of behaviour. Similarly Thrift and French also hint at spatiality created from placing technology and the digitalization of everyday scales and argued that the “technical substance...of... societies has changed decisively as software has come to intervene in all aspects of everyday life,[...] altering social ontology creating a new and complex form of automated spatiality.”⁴⁰

Inserting and using media technologies and its effects on spatiality could be discussed from other angles, such as from the viewpoint of the visual, or multi-sensorial, effects and impacts that media could have/bring to the experience of place. Multi-sensorial change, and visual and spatial impact provided by locative media technologies will be discussed in Chapter 3 on Streetmuseum. That case study will examine how visual and spatial characteristics (borders) of every day urban spaces could be perceived differently, due to re-valuing urban spaces based on mediating urban spaces by media, where points of space are superimposed by virtual information.⁴¹ There I argue that, for users of such

³⁶ Ibid.

³⁷ Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.p.192..

³⁸ Lefebvre discussed how “the texture of space affords its opportunities not only to social acts with no particular place in it and no particular link with it, but also to spatial practice that it does indeed determine, namely its collective and individual use: a sequence of acts which embody a signifying practice even if they cannot be reduced to such a practice”. Cited in Giesecking, Jen Jack, William Mangold, Cindi Katz, Setha Low, and Susan Saegert. 2014. *The People, Place, and Space Reader*. Routledge.p.293.

³⁹ Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.p.491.

⁴⁰ Ibid. 572,

⁴¹ Referred to as superimposition interface points.

an application, different layouts of city and different values of each point in space are perceived. Moreover in Chapter 6 (Transcendental Technology) where I discuss socio-formative spheres, I will mention other types of applications that interact indirectly with physical spaces (mostly through several conceptual chains), but that still do influence the experience of physical space. For example, in the chapters dedicated to Foursquare, we will see how this application changes the image of urban places by providing users with information about their neighborhood, thus changing a user's knowledge of their surroundings, and thus affecting the way users interact with/perceive the physical place.

2. Maps (as forms of representational medium) in communication with reality and materiality of urban spaces

The widespread use of mobile phones integrated with GPS tracking and monitoring systems in everyday movement and mobility of urban users makes feasible the possibility of tracking people's movements, activities, and even personal opinions, feelings, and memories and sharing them with wider audiences on maps.

The possibility of implementing maps and other forms of visual materials with tracking mobility and monitoring systems has opened up new ways of interpreting the map as the medium of representation. The map, in its new formats, does not serve only as an abstract representation of the physical-material world. Rather, it communicates with place-experience in new ways, and it represents other aspects of place-experience and therefore could facilitate new forms of social interpretations, and socio-spatial understandings.

Maps in general allow us to see relations and associations between things, places, and—more recently—humans as actants⁴². They allow us to see collections of integrated or scattered places, and track the change and alteration of objects, spaces and processes, but they are also artefacts that are associated with the culture, politics and society of their creator at the time of their construction.⁴³ For a long time, we have used maps for way-finding and navigation. The implication of maps has recently developed to another level, particularly after the adaptation of GPS systems for mobile phones that integrates information about physical places, representable on maps, and respectively puts things in new forms of relation, which to a degree frees us from the Cartesian representation of space: it makes users traceable, catchable, or even predictable (e.g. mapping in new formats enables some—although who and how these others are able to access such data is a much bigger debate—to follow patterns of users' behaviour, and thus makes them more understandable and potentially predictable; this will be hinted at in the second part of Chapter 5 on Foursquare). In the following section, some implications of using maps and new representational mediums will be addressed.

User-generated maps integrated with open data

One particular application of maps is for the purpose of tracking users and monitoring users' movement over time and within spaces. Global positioning systems (GPS) on mobile devices are allowing the spatial movement of people, complete with all their personal attachments (emotions, expectations and people's everyday experiences, feelings, images, etc) to be monitored, uploaded and shared by individuals⁴⁴ (e.g. *Bio mapping project*⁴⁵). But the application of map/mapping is not only limited to individual purposes, to project one person's movement in an urban space, but rather it

⁴² In relational thinking of space and place, offered by Deleuze and Guattari to discuss elements of any assemblage, they use the term *actant* to refer to entities, regardless of their nature; whether they are natural, social, material or immaterial, they are all considered actants. Cited in Introduction Ek, Richard. 2006. "Media Studies, Geographical Imaginations and Relational Space." In *Geographies of Communication: The Spatial Turn in Media Studies*, edited by Jesper Falkheimer and Andre Jansson, 45–56. Göteborg: Nordiskt Informations center.

⁴³ Gazzard, Alison. 2011. "Location, Location, Location: Collecting Space and Place in Mobile Media" 17 (4): 405–17. doi:10.1177/1354856511414344.

⁴⁴ Wunsch, V. (2007). Participative web and user-created content web 2.0, wikis and social networking. OECD 2007.

⁴⁵ More information is available at <http://biomapping.net>

becomes a collective source, showing groups of users' movements in that space. Most likely those maps are integrating in a collective-interpersonal manner, via social networking services and websites such as Twitter, Facebook and Foursquare, and become a collective user-generated map, that from another viewpoint could be considered as a repository of images and a site to develop image/identity of cities (this will be discussed in Chapter 4 on Foursquare). For example, if a user installs *geo photo explorer*, or geo shots, which are both universally usable, s/he can track photos taken of his/her own surroundings on a map also accessible on augmented reality mode. Geo shots, for example, uses photos shared or generated by other applications such as Flickr, Instagram, or Facebook. Christian Nold's Bio Mapping (2004), as another example, creates a map of feelings and emotions based on a person's reaction to the environment. People were enabled to re-explore/re-create their local area through the lens of emotions and feelings. By walking through the neighborhood with the device, a map was created upon their return home which illustrated the user's "high and low arousal" and his/her responses to the neighborhood.⁴⁶



Fig. 2.2 Geo shot application is becoming a collective source that lets users track photos taken by other users of the same place. It feeds images from other visual platforms such as Instagram or Facebook.

Platforms for interactions/networked communities

"We are witnessing the birth of a new civic movement, as the smartphone becomes a platform for reinventing cities from the bottom up."⁴⁷

User-generated maps provide tools and ways of inquiring that give insight into how people live, perceive and act in urban spaces.⁴⁸ Maps have always been considered tools for archiving data, navigating and finding patterns. The current ways of implementing mapping tools and techniques affect the way we view, interact with and possibly govern a city's structure. Maps could be part of new media platforms employed as tools to project territories, to make visible territories of space and

⁴⁶ This project basically maps the emotional changes of each user, and visualizes them on a map. By incorporating Biometric sensors with a GPS tracking system, it enables people to create/build their own fluctuating emotional maps and link them to geographical locations. It also could become a crowd-sourced map, linking each user to others who experience the same place. Examples are available here: <http://www.mapperaperte.net/cartografiasistente/cited> in Eckardt, Frank, Jens Geelhaar, and Laura Colini, eds. 2008. *MEDIACITY. Situations, Practices and Encounters*. Berlin: Frank & Timme GmbH.p.100.

⁴⁷ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.P.xiv.

⁴⁸ Lupi, Giorgia, Paolo Patelli, Luca Simeone, and Salvatore Iaconesi. 2012. "Maps of Babel. Urban Sensing through Text Analysis on User Generated Content." <http://dspace.mah.se/handle/2043/14021>.

represent the relation of those territories, before they become actual/fixed.⁴⁹ Open forums, created and centred around maps (as their main platform of communication), are becoming in many cases an integral part of design and decision-making processes. There is in this the possibility of *editing the environment*, through the potentials of networking and communication formed around media platforms, that is, by anticipating the outcomes of an action, new media technologies have the possibility of editing an environment, before plans are being completely actualized. Editing the environment is a way of allowing the users of a community to take charge of their own environment by sharing problems and taking charge of solving those issues, partially or completely. “What was once the sole preserve of builders, architects and engineers, falls into the hands of everyone: the ability to shape and organize the real world and the real space.”⁵⁰ Through incorporating communities and linking communities and policy-makers, there are potentials of developing more organic (flexible and responsive) urban cities, governed by communities. Alexander famously discussed cities as a process, where people could channel the process of development into a healthier course, by empowering each user and changing the way we see and govern the city: and if instead of city we focus on the process, there is still a hope that the city becomes more organic.⁵¹ This gives communities and citizens the right and authority to take charge of their city, rather than only being passive consumers of space. He later went on to define the process, and emphasized the importance of allowing users of the communities to take charge of their environment.⁵² Townsend similarly discusses how, if we are planning to make smarter cities, we must seriously start with the people—the human capital side of the equation—rather than blindly adopting and believing that IT can automatically improve cities.⁵³ One relevant key element to achieve an organic yet smarter city is the use of social networking technologies to tackle issues more directly, to provide immediate reflections, to engage and build around natural communities and boost local social capital,⁵⁴ and to do so by incorporating location-based applications that tackle community issues is a practical step. Issues regarding linking communities to planners and decision-makers have recently come to the attention of many other scholars as well.⁵⁵ User-generated feeds could have a specific audience (e.g. policy-makers or general people) or could only follow social awareness and supportive purposes. There are a number of applications with the role of *monitoring and tackling urban complexities, which have the purpose of city planning*, “targeting urban issues or addressing their effects on urban planning, decision-making, problem solving, and governance in mind.”⁵⁶ Anthony Townsend,⁵⁷ in his book *Smart cities: Big Data, Civic Hackers, and the Quest for a New Utopia*, discusses the challenges and potentials of urbanism in relation to big data, smartphones and the potential of new technologies to track the problems and provide immediate reflections, and the necessity of adaptation of the city with information technology, by policy-makers. He stated that the reason why “mayors across the globe are teaming up with the giants of technology industry [...], [is to], by reprogramming the city[...] [through using new media technologies, take] away local problems”.⁵⁸ For example, problems such as abandoned buildings in a neighborhood could be reported to governments by applications such as

⁴⁹ Eckardt, Frank, Jens Geelhaar, and Laura Colini, eds. 2008. *MEDIACITY. Situations, Practices and Encounters*. Berlin: Frank & Timme GmbH.p.99.

⁵⁰ Cited in Raley, Rita. 2008. “On Locative Narrative.” *Genre* 41 (3-4): 123–47. P.127

⁵¹ Alexander, Christopher. 1987. *A New Theory of Urban Design*. Oxford University Press.p.4

⁵² *Ibid*.p.5.

⁵³ Deakin, Mark. 2013. *Creating Smart-Er Cities*. Routledge.p.4.

⁵⁴ *Ibid*.p.4-6.

⁵⁵ In creating smarter cities a number of scholars discuss models of smarter cities that seek to go beyond conventional city-governing models and instead use social, shared community based models of “of doing things together”, as replicable and more sustainable models. For more information please see: Deakin, Mark. 2013. *Creating Smart-Er Cities*. Routledge.

⁵⁶ Lupi, Giorgia, Paolo Patelli, Luca Simeone, and Salvatore Iaconesi. 2012. “Maps of Babel. Urban Sensing through Text Analysis on User Generated Content.” <http://dspace.mah.se/handle/2043/14021>.

⁵⁷ Townsend specializes in research on the implications of technology on cities and public institutions.

⁵⁸ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.p.xii.

HeyGov.⁵⁹ Townsend further explained that the raw materials and the means of producing smart cities—those pervasive technologies that are widely used by ordinary people: smartphones, social software, open-source hardware and cheap bandwidth—are widely democratized and inexpensive. Those pervasive technologies are the foundation of how citizens “can evaluate potential solutions to problems, share feedback on events and policies, and even engage in collaborative discussions about governance and planning issues.”⁶⁰ There is a wide range of issues that could be addressed through implementing these mediums, such as solving public transport problems, e.g. with the *Citymapper* application; other examples are applications developed to solve neighbouring issues: *FixMyStreet*, and *FixMyTransport* (both developed for London).

All over the world, developers and civic hackers, by combing and recombining user-generated data, are seeking to amplify and accelerate the natural sociability of city life. They create digital interfaces for people to see, touch, and feel the city in completely new ways.⁶¹ Some of the applications are trying to solve the problems of a city or create awareness about a particular problem, whilst others try to aggregate citizens’ opinions on a given problem.⁶² *Maps of Babel* is an example of such a communication and interaction platform developed by Lupi Giorgia, Paolo Patelli, Luca Simeone, and Salvatore Iaconesi with the aid of the architectural department of the Polytechnic de Milano.⁶³ The specific integration of this map, with the aim of aiding designers and urban planners to get a better understanding of relations between public spaces and patterns of social activities, tries to produce meaningful urban design strategies based on users’ ways of engaging with spaces. Their strategy is not only to collect data from urban spaces or users’ patterns of behaving; rather, by providing a feedback loop for users, it provides a platform for citizens to reflect their opinion on any issue that matters to them (for example, users can reflect if in their neighbourhood, a pedestrian area is positive or not). *Map of Babel* presents multi-cultural patterns using the city of Milan (e.g. ethnic distribution), thereby providing a platform which addresses a number of public questions and concerns (e.g. users can discuss whether in Milan there should be a mosque, and if so, where it should be. E.g. Where do people talk more about God? E.g. Does a newly introduced building correspond to the needs of neighbourhood? etc).

Kevin C. Desouza & Akshay Bhagwatwar (2010)⁶⁴ studied 20 different applications that tackle urban issues, and categorized them as follows: their first group identified applications that are mainly developed to seek Citizen Opinion without having the ultimate purpose of resolving any issue, more as a social forum. A second group covers applications aimed at identifying problems in local communities and conveying those problems to the appropriate government agency. Their third group recognized apps with the aim of Problem Resolution, by reporting the issue to concerned agencies or authorities (e.g. *FixMyStreet*, which was launched by the United Kingdom Ministry of Justice, developed in the UK by the Ministry of Justice and aiming to help people report, view, and discuss local issues such as graffiti, unlit streetlights, potholes, broken roads, street cleaning issues, and litter). The last category of applications mainly tried to create awareness of social problems (e.g.

⁵⁹ Similar to Open311, HeyGov, Fix- MyStreet, and FixMyTransport also give citizens and government agencies a platform to communicate information. Citizens can submit service requests regarding problems such street cleaning, graffiti, etc.

⁶⁰ Desouza, Kevin C., and Akshay Bhagwatwar. 2012. “Citizen Apps to Solve Complex Urban Problems.” *Journal of Urban Technology* 19 (3): 119.

⁶¹ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.P.9

⁶² Desouza, Kevin C., and Akshay Bhagwatwar. 2012. “Citizen Apps to Solve Complex Urban Problems.” *Journal of Urban Technology* 19 (3): 107–36.

⁶³ Ibid, also see <http://www.artisopensource.net/network/artisopensource/2012/03/20/maps-of-babel-at-human-cities-symposium/>

⁶⁴ Their study is one of the first attempts to address categorically applications that tackle urban issues. Please see: Desouza, Kevin C., and Akshay Bhagwatwar. 2012. “Citizen Apps to Solve Complex Urban Problems.” *Journal of Urban Technology* 19 (3): 107–36. doi:10.1080/10630732.2012.673056.

*MyEdinburgh*⁶⁵) by acting as a medium for easy access to a particular piece of information. This series of platforms provides an awareness of urban and social issues that urban dwellers might not generally otherwise be aware of.⁶⁶

The other group of applications that is closely related to the citizen awareness category includes those mainly aimed at giving services to users (such as The Train Line, BusMapper, National Rail, Train Time, etc). These sorts of applications help users to arrange and organize everyday practices, and manage meetings, urban travel and commuting-related activities such as parking (e.g. Parking Finder), restaurant and food-finding apps (e.g. *Fidilio*(2015), *UK Restaurant Finder*(2011), *Nearby Food*(2013)), and money points (e.g. Nearest ATM).

Participatory mapping: user-generated maps as a form of site analysis

Apart from those implications of user-generated maps, social media platforms, and open-data that were mentioned in the previous section, (such as policy-making aiding tools/platforms, giving a voice to the people and incorporating them in city-developing processes, or those that empower the user and communities to present their needs), a combination of maps and open data can also be used as participatory mapping tools, to conduct site analysis and support the reimagining of a site. By highlighting this issue it becomes clear that architecture and built environment professionals can implement new tools and techniques to develop more creative ways of doing research in architecture and in regard to design for and with communities and users, and with regard to issues of consulting communities on their needs, on the qualities of their built environment (by knowing the ever-changing and lived quality of the site, practices and activities of users of the site), and on proposals before they are planned. In the Sheffield School of Architecture, Mark Meagher and Philip Langley teach a *Studio for open data*, where they work on documenting some participatory mapping techniques that implement and incorporate open data, user-generated maps and social networking sites as tools for alternative ways of doing site analysis. Students are asked to document architectural sites including all forms of activities and practices occurring in the site or in relation to the site, ranging from social, economic, material, physical and urban fabric, commerce and mobility concerns, where they are asked to accumulate and document those data through open data sites, geo-located texts, images and social media sites such as Twitter; and then later visualize this information and generate maps (Figs 2.3&2.4). The idea behind this creative way of site analysis besides empowering and representing the site from within and in response to the needs of communities is to use media platforms, mobile media and open data in order to multiply documentation and representation of site analysis data in various levels or layers: from people's personal tweets or personal maps of walks done by students to big data sources available online, provided by organizations. The courses/modules that are provided, especially for the purpose of visualizing data and using open source maps, have helped me to visualize Foursquare check-ins of users of university campus that will be later discussed in Chapter 5.

⁶⁵ <http://www.myedinburgh.org.uk> . 'myedinbrough' is an example of the platforms that provides an infrastructure for citizens to learn about city planning, city development, or the design of cities and engage in local decision-making processes made about the neighbourhood and for sustainable communities. Cited in Deakin, Mark. 2013. *Creating Smart-Er Cities*. Routledge.p.7. Also see page 17, same reference, where it discusses: Intelcities Community Of Practices. A project developed by Manchester City Council and with the incorporation of the City of Siena (Italy), and 36 other research groups.

⁶⁶ Ibid.

Locative Media From Transcendental Technologies to Socio-Formative Spheres: An Examination of The Interface between Place, Agent and Locative Media

Data Visualization (source: Group Work) (csv documents + codes → data visualization : csv documents + upload → google my map + google fusion table)

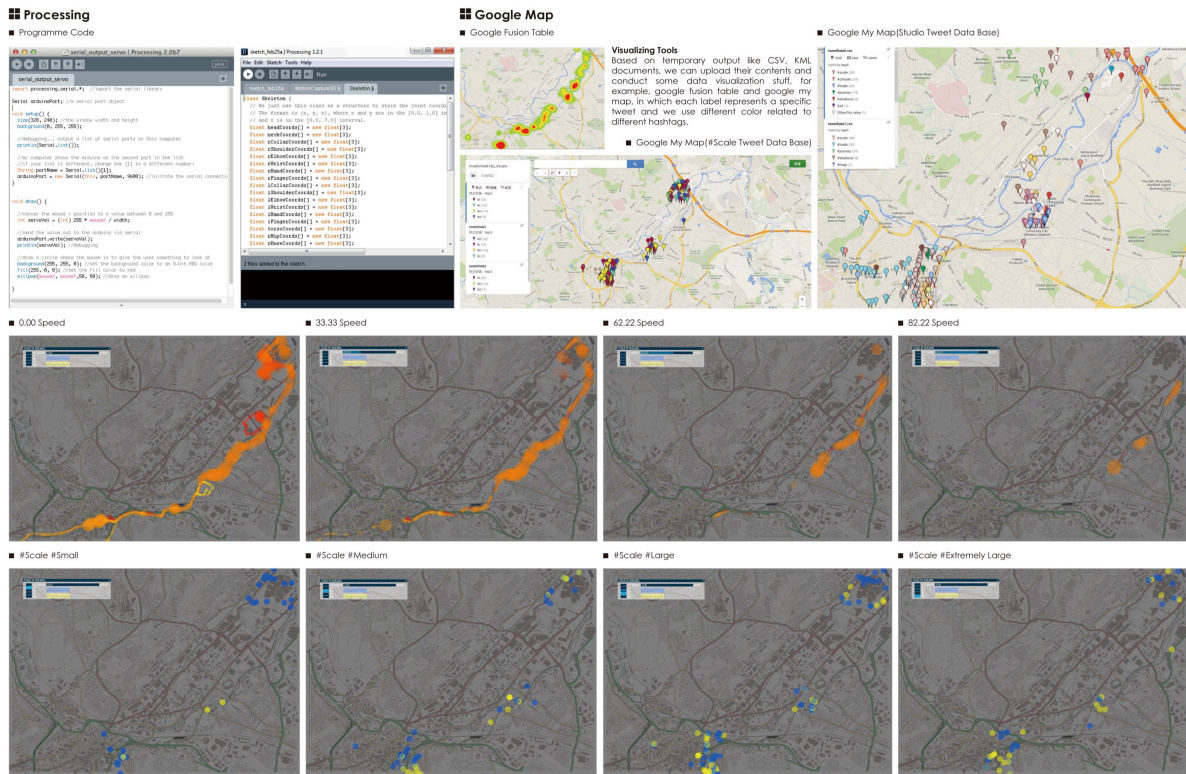


Fig. 2.3 The act of site analysis could be based on mapping tools such as one that allows mapping of pedestrians' walks coupled with their opinions/tweets along the walk/related to their observations at/of the site. Image © Mark Meagher.

RIDEGE-BRIDGE
BY Ranran Wei & Rui Hou



DATA COLLECTION FROM PUBLIC & ANALYSE

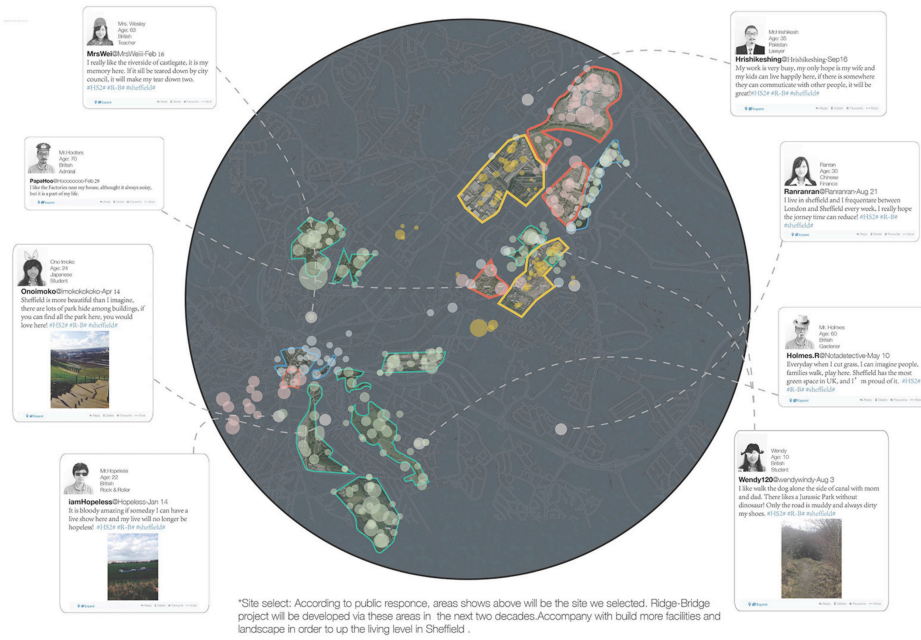


Fig. 2.4 Open access data sources such as Twitter can become part of site analysis; e.g. sites for collecting general information and public opinions about physical locations. Image © Mark Meagher.

Individual scale

Since the focus in the following chapters is on the implications of locative media on the scale of each individual, here I will point to some socio-spatial and cultural implications of those media on urban place-experiences. Moving on from the implications of new media technologies on government and planning, towards individual and personal levels, at the scale of each user, the three categories of urban tagging, user-generated mapping, and social media will be covered in the case studies, but not from a governing perspective rather from bottom-up views. I will discuss how the accommodation of locative media with various forms of representational medium has provided vehicles to change urban place-experience, place-attachment or sense of place, image of place, and so on.

One implication of employing tracking systems and representing information on a map simultaneously with exploring the urban materiality is provided by social site media applications, those that accommodate mapping in their interface. In Chapter 5 (Foursquare: part two), I will discuss *mediated social co-presence*, through which I will give an insight into socio-spatial and communicational changes that those media can bring to place-experience and place-attachment. By providing users with location-specific information, those applications allow users to feel the presence of others while they could be located in a different physical space. We are learning to feel the presence of others through mediated channels and mediums. In case of Foursquare, for example, users of this application can know about their contacts' locations and what they are doing at any time by checking them on the map, or through getting notifications of their location. They can get the life routines of friends by following their check-ins, the places they visit, and even the times and rhythms of their activities. For instance, the map of Foursquare, because it provides the possibilities of tracking, becomes a medium that reflects and projects the social co-presence of others consistently through their regular check-ins. This medium constructs and defines new forms of understanding of being-with-others, new forms of sociability, which is only enabled through mediation: monitoring the presence of others on maps or through notifications. Users of such applications experience social co-presence, but not corporeally; rather, this

is reflected and presented on the medium of a map. Loopt, another example of a geo-social networking application, also works in the same manner as Foursquare, where if a friend is logged into the application, they appear on the map where their movement is trackable, and it is thus possible to follow others' activities or what they do via status updates. Moreover, if a selected friend comes within a certain physical distance, the phone sets off an alert.

Appropriating urban spaces

The other role of such new media technologies is that they are appropriating urban spaces, especially urban transit points, for new forms of engagement, communication and new senses of place and connection, and probably offering different levels of experience. Everyday mobile media use also encourages people to encounter and "appropriate" existing urban spaces in different ways—interactions that suggest a subtle but increasingly rapid process of "spatial hybridization"⁶⁷, where experience is formed through combination of physical material and virtual information. As I hinted at in the introduction, further will be further discussed in Chapter 6, the intersection of mobile people and mobile media, and saturation of everyday experiences with immaterial and symbolic information, is getting to a point that Jansson 2005, referred to it "spatial ambiguity",⁶⁸ that is, a state where the clarity of the experience is blurred. In other words, the transparency of knowing/feeling to what extent a user's experience is a result of materiality of the location/place and to what extent it is a matter of being exposed to virtual information is becoming unclear.

Usage of existing public urban spaces has definitely been challenged by media devices, especially in terms of "erasing spatial boundaries"⁶⁹ of space, and increasing the levels of communication, and increasing the possibility of interacting with others or chances of encountering strangers. For example, Richardson et al (2012), in one piece of research which studied the creative adaptation of media devices by teenagers in Korea and Japan, inferred that when a user of the same application in transit spaces or public spaces encountered strangers represented on their mobile map, s/he could invite that person to play. Hjorth, Burgess, and Richardson (2012) approached the issue of pervasive technology and examined 'new urban game applications' that change urban spaces to be perceived as interactive platforms, in which the user's perception of urban places is changed towards a *goal oriented place-experience (vertigo)*.⁷⁰ That means that the movements of users and the way they interact with urban spaces, because of approaching urban spaces with game-quest intentions in which the mission dictates the movement, was significantly different and affected by game-tactics.⁷¹

Media technologies not only have playful functions for users of transit spaces (increasing the chances of interacting with strangers), but also they are redefining transit spaces, and transforming them from mere waiting spaces with weak readability into more functional spaces with more readability. Dourish

⁶⁷The term is used by Silva, Adriana de Souza e. 2006. "From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces" 9 (3): 261–78. Also see, Anne Galloway's PhD. Available at : <http://www.purselipsquarejaw.org/dissertation.html>

⁶⁸Jansson 2005 used spatial ambiguity to refer to the phenomena that resulted from globalization, intersection of mobile people and mobile media, saturation of media text and pervasive usage of mobile media and finally the ambiguity of status of text and context. By that, he explained that immaterial/symbolic mobility of text may be transformed into a context, and vice versa: and thus the separation of text: referring to symbolic and visual materials from, context: [activities and practices] is blurred.

Jansson, André. 2005. "For a Geography of Communication." Accessed at <http://www.ep.liu.se/ecp/015/040/ecp015040.pdf>.
Jensen, Ole B. 2008. "Networked Mobilities and New Sites of Mediated Interaction". *First International Conference on Critical Digital: What Matters(s)? - 18-19 April 2008, Harvard University Graduate School of Design, Cambridge (USA)*, Pp. 279-286. http://cumincad.scix.net/cgi-bin/works/Show?cdc2008_279.

⁶⁹ Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.493.

⁷⁰In similar discussion Jane McGonigal argued that those media are "transforming everyday objects and places into interactive platforms" and "activate players by making them more responsive to potential calls to interaction" because of "previously unperceived affordances" (McGonigal, 2007, p. 236).

⁷¹Hjorth, Larissa, Jean Burgess, and Ingrid Richardson, eds. 2012. *Studying Mobile Media: Cultural Technologies, Mobile Communication, and the iPhone*. New York, NY: Routledge.

(2006) has argued that technologies such as the mobile phone are already fundamentally a part of how we encounter urban spaces and places⁷². Mediating urban transit spaces will definitely enhance traditional service functions such as providing guidance and information about the functional properties of the environment, but as we will study later, in Chapter 4 (first part on Foursquare), it surely has exceeded the simple provision of better readability and functionality of spaces.

3. Accommodation of mapping tool/medium to social media applications

New media has the potential to be applied as an influential source of generating spatial practices or altering existing practices or spatialities. As we have been witnessing, the increase of social physical actions facilitated through social media has affected the way people execute, perceive or appropriate urban spaces. The consequences of usage of collective social media could be discussed in terms of how it affects the act of agents in action (movements of a user in space). The Iranian Green movement provides an example of how media becomes the source of moving bodies in space, becoming the source of agents in action. In regard to that specific event, protesters managed to incorporate media into their interactions, thus spatial public and networked publics were not separated spheres; rather, they were bounded into a complex assemblage of human actants, technology, media platforms, urban elements/potentials of an urban public. This assemblage presented a significant intervention that dealt with tactics and strategies to move agents in space, occupy spaces, escape from guards, and many other socio-spatial formations. During the protest, protesters organized their interactions through the social media platform of Facebook and by texting. They arranged their actions and plans to occupy spaces through social media. Users were constantly getting updated about which streets or urban areas of a city were less occupied with police guards of the regime and which places were safer. The potential of media platforms to move agents in space and, in respect to this, the issues that boundaries between public and private are much more blurred than before, is also discussed by De Waal, where he argued, “Mass media brought the public sphere into the private sphere, the homepage and mobile media brought the private sphere into the public sphere”; Every day spatial practices are no longer solely connected to specific places (the house, or public places like the piazza or coffee house), and those locations have become attitudes rather than places.⁷³

Media architect Tierney (2013), studying the urban and spatial implications of Facebook, has asserted that as “social media platforms become increasingly entangled with everyday interactions, it is becoming more difficult to segregate public practices into discretely bounded spheres or spaces.”⁷⁴ She has pointed to diverse effects that could swing between only providing social portable community (transient portable communities), through to a mechanism that moves people in space (an example of this spatial implication is the Arab spring/uprising, where social media supported the organization and coordination of activities and enabled its members to act with collective agency). She highlighted the contribution of social media in the production of alternative public spaces, which she referred to as “slippery public[s]”.⁷⁵ “The flexibility creates a resilient public sphere, [...] a full spectrum of expressions with varying levels of engagement and intimacy”.⁷⁶

Internet activists and marginalized groups could be considered as active users of social media. Social media provides opportunities for marginalized people to create tactical communities, finding modes of survival by using or subverting the media infrastructures and creating space of discourse. By employing media, such users suppress the limitations of location and power, and by bridging between

⁷² Dourish, Paul. 2006. “Re-Space-Ing Place: ‘Place’ and ‘Space’ Ten Years on.” In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work*, 299–308. CSCW '06. New York, NY, USA: ACM. doi:10.1145/1180875.1180921.

⁷³ Waal, Martijn de. 2007. “No More Bowling Alone? Locative Media and Urban Culture.” In . Universität Siegen.

⁷⁴ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.p.96.

⁷⁵ Ibid.P.30,39.

⁷⁶ Ibid.P.99.

virtual medium and physical actions, situate themselves in between.⁷⁷

From another viewpoint, employing social media enables people to make ‘actions’ and change the place in a way that not only introduces new uses but also augments the existing ones (sense-making and personal value creations⁷⁸). Social media in developing countries enables minorities to create new territory on the boundary line of established public⁷⁹ and by acting as an alternative public, with agency and effect, impose new spatial implications⁸⁰. In a simplified description, online interactions and conversations might lead to real-world interaction. For example, an Iranian journalist set up a page on Facebook called ‘stealthy freedom,’ where by setting up a question, she asked her fans to share their personal photos taken without wearing the traditional headscarf, as an action asserting that not all Iranian women agree with the obligatory hijab, and that they seek the basic freedom which is the right to express themselves. The replies were (and still are) so enormous that the page became famous worldwide, and people from everywhere are sending supportive comments, sharing their photos to show they back the movement. In order to reply and participate, people are going out and taking photos of themselves without their headscarf, especially in public places. In this example of media campaign which won a human rights and democracy award in 2015, media becomes the platform to represent the majority of Iranian women who for many years have never had a voice, but now are able to be heard and present their ideology. Media, as an organizational space, became an influential mechanism, and causes actions in a physical place, encouraging users to move and act offline, dissolving the boundaries between online and offline spaces (between physical and media-space), and encouraging the fan-users to act intentionally in public and in a way respond to their tendencies.⁸¹

As Andrea Mubi Brighenti and Cristina Mattucci⁸² have discussed in *Editing Urban Environment: Territories, Prolongations, Visibilities*, new media technologies could also be employed as technologies that project territories, to make them visible before they become actual. This is what is proposed by some participatory design projects, (such as open forums for many big governmental projects) that propose participatory design projects which incorporate communities through social networking to respond to local issues or to avoid any possible future conflicts. It is possible to think of the potential adaptation of social media as part of the design processes, thus changing the role of designers towards *designing a ‘process’* rather than a final product, and by taking advantage of these new social practices giving significant value to non-designers in fulfilling the local processes. Those platforms also can offer more flexible ways of communicating.

From a different viewpoint, since social media nowadays could be present during the experience of physical and temporal spaces, mainly because of GPS-integrated technologies, and because of the accommodating aspects of mediums of representation, the assemblage of social media, with the potential of tracing users’ activity, is now going to suggest another type of presence that influences people and their behaviour. These issues will be specifically discussed in Chapter 5 (second part on Foursquare).

⁷⁷ Ibid.P.101.

⁷⁸ Bechmann, Anja, and Stine Lomborg. 2013. ‘Mapping Actor Roles in Social Media: Different Perspectives on value creation in Theories of User Participation’. *New Media & Society* 15 (5): 765–81. doi:10.1177/1461444812462853

⁷⁹ Ibid,101.

⁸⁰ Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.P104.

⁸¹ Ibid.P.102.

⁸² Andrea Mubi Brighenti and Cristina Mattucci. 2008. “Editing Urban Environment: Territories, Prolongations, Visibilities.” In *MEDIACITY. Situations, Practices and Encounters*. Berlin: Frank & Timme GmbH.p.100.

Conclusion

As we know, meanings are made out of the visual, aural, and textual world of representations and the ways those representational mediums and related practices are engaged in symbolic and communicative meaning production is a multi-level arrangement/engagements.

In this chapter, I have set out the spatial implications of a number of representational mediums and discussed how they effectively mediate spatial experience from an *individual level* through to the governing of cities. Going through different examples of new media technologies and their implications on an urban scale from different perspectives (from personal to collective), the aim of this chapter was to serve as an introduction to the following case study chapters, where I will work with the same categories of *urban tagging, user-generated maps, and social media* from bottom-up views. These studies operate only at the scale of each individual, and at the personal level. In those studies, I will discuss how the accommodation of locative media, with various forms of representational mediums, has procured a vehicle to change urban place-experiences, place-attachment or sense of place, and image of place. Zooming out from the frames that operates on the individual level, the broader implications of locative media is a vehicle that changes urban perception by supporting greater environmental knowing, which ultimately, may contribute to changing the built environment.

By discussing a number of categories of application, this chapter also set out what we could expect from representational medium (map, images, multi-text) in terms of altering spatiality, appropriating existing urban spaces (e.g. urban transit space), or becoming linking tools and platforms.

The first category that was mentioned here was augmented reality application. Some augmented reality applications represent cultural or social aspects of physical place; that is exactly where, by juxtaposing images of reality with reality itself, this group of applications creates authentic staging points for users' perception of spaces (this will be developed later in Chapter 3 on Streetmuseum).

I discussed how, in order to examine theoretically the ways in which locative media alters spatiality, we have to incorporate the textural affordance of space, as a theory developed by Lefebvre and expanded by scholars such as Jansson (2006). This theory, by considering that each space has textual space—communication affordance—helps to define how the representational medium can change the communication levels of spaces; and how the upgrading of the communicational levels of space might extend the borders of perceived space beyond physical borders. Some locative media applications, by providing new forms of representation, alter communicational affordance of spaces and thus understanding of spaces, exceed the available informational communicational and social resources on the site (e.g. Streetmuseum, Foursquare).

The other category that I discussed was user-generated maps and the implications of user tracking/monitoring maps. I showed through some examples and cases the potential of those platforms for linking government and communities, and for involving users in the processes of decision-making offered by the governments. I also brought a few examples of how user-generated maps could possibly become tools for architects and urban planners for the act of site analysis. Exploring other functions and architectural/spatial implications of this category, in the following chapters, from an individual level, I will investigate the potentials of using maps and other forms of representational medium. Through the empirical study of a number of applications, I will specify some other socio-spatial changes that locative media can bring to the experience of space, where for example I discuss connectivity and availability as ways that those applications potentially affect our experience, by the possibility of constant connection with physically absent others while experiencing physical places, or what I refer to as *mediated social co-presence*.

This term describes the potential closeness and presence that a person could experience through mediated platforms. Experiencing this form of presence is possible, due to the integration of tracking

systems and the possibility of representational mediums. Through applying representational medium in all forms, it is palpable to understand that the physical boundary of space is not limited to the physical boundaries, and that the possibility of being in a physical place whilst experiencing it with physically absent others (mediated co-presence) is now possible.

The other outcome of applying representational medium on a daily basis within a large community of users lies in establishing an image of places that a user can develop towards a place that s/he has not yet visited, through information shared via a representational medium (this will be discussed further in Chapter 4 on Foursquare).

The last group of applications whose spatial implications were discussed is social media. I felt the necessity to discuss this group of applications—especially since they accommodate maps into their representational medium and their interface—because they are becoming an undeniable part of everyday life, and in particular becoming a leading cause of actions in physical places, encouraging users to move and act offline, dissolving the boundaries between online and offline spaces. In other words, it is becoming a motive to encourage some sort of physical action in space, or as Jansson explains, those media can produce spatiality or spatial practices.⁸³ There are examples of such spatiality or spatial actions supported or even defined by social media that will be discussed later in Chapter 5: second part of the Foursquare case study).

What I have reviewed here helps to open and frame a discussion of how spatiality could be produced through using locative media application, and through integrating some aspects of representational medium with physical space, and how by applying different forms of representation we can expect the development of new forms of understanding of physical spaces, and possibly new spatial understanding. It is becoming hard to distinguish to what extent spatiality is perceived by an urban traveller, or to what extent it is a result of onsite resources such as sensorial information or the offsite possibilities supported by technology.

By emphasizing the representational medium, this chapter negotiated the potential spatiality (spatial practices) that emerges from the juxtaposition of representational medium with the material-physical world. I mapped a topology of applications that represent aspects of place through their visual-representational mediums, in which the representational medium becomes part of the experience of urban space. Then, through categorizing the findings into three main themes, I discussed the possible urban-technological implications of locative media from an individual/personal level through to that of governing and planning.

In the following chapter, through the case study of Streetmuseum that belongs in the category of augmented reality applications/urban tagging applications, some of the discussions mentioned here, such as how new media technologies could afford a different spatial-understanding of urban space, will be discussed in more detail. In that chapter, some aspects of mediatizing urban spaces with representational medium, in personal levels (in particular), will be discussed. I will explain how the accommodation of the representational medium enables users to develop associations with place, and how it could become a cultural tool to ignite memories of place.

⁸³ Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter.

**CHAPTER 3: URBAN ELECTRONIC TAGS/ AUGMENTED REALITY APPLICATIONS (CASE STUDY OF
STREETMUSUEM)**

Socio-Cultural Implications of an Augmented Reality Application (Main Scenario: Streetmuseum)

Since GPS technology has become more pervasive, more sophisticated and more widely adapted in different contexts with various purposes (such as the recent adaptation of locative media applications for cultural or tourist purposes) many possibilities and questions regarding the implications are raised: how can new media technologies collaborate to (re-)define context? How can the integration of those technologies hypothetically enrich the quality of experience?

In the following sections, I will highlight some aspects and potentials of a *culturally intentioned incorporation of technology through the case study of Streetmuseum*. By inserting and sharing of collective memories through augmented reality applications, the assemblage of location-based, culture-aimed media with urban spaces would potentially alter or re-define place-experience, and possibly change the relation of users with space. These issues will be examined in detail throughout the main text.

In a more particular frame, my concern is to investigate the new conditions that emerge along with the new forms of mediatization of place. I will be focusing on the specific location-based applications of Streetmuseum, and exploring how the interface of such media offers new types of interaction and negotiation with familiar spatial contexts, and how we have moved from the separation of 'representation of space' from the 'lived experience' (as were theorized by Lefebvre) into a more fluid concept that merges them into one unity.

This chapter is based on an in-depth study of the Streetmuseum application as an example of similar locative media applications, and it will explain how this sets up negotiations between the social and behavioural norms of using this application in real time, finding associations between the contents of augmented reality application and physical urban context. In addition, the analysis will investigate *what new media might bring to a place* (by overlapping urban materiality with immaterial layers of images or films) and how this might affect the place and the associations of users with that place, and explore some implications of mediatization of place-experience that is referred to as remediation of material environment with virtual information⁸⁴.

This changing notion of context has been researched using an ethnographic approach, observing how a number of participants behaved when *Streetmuseum* framed their encounter with information in real time, and how they negotiated associations between locative media and the physical urban context. The findings of this case study are categorized in 6 main parts: **Complementarity effect; Generating effect; Temporal place-making potentials; Revaluing spaces, Embodiment and Micro alignment; and Mediatory stage Authenticity.**

In the latter section, by zooming out from the detailed study of Streetmuseum to cover/introduce broader issues emerging from that detailed study, the focus will be on the constitution of new social/spatial functions and the perceptual implications of reconciling representation and its object of reference (in the form of augmented reality), and to understand what specific socio-spatial functions this reconsolidation serves for authentic experience and authenticity of a building.

The chapter will also identify and discuss how locative media could provide a lens through which to read the city differently, and engage in generating value through assigning meaning and memory to objects and places. From a different viewpoint, regarding interaction and behaviour of users, the aim is

⁸⁴ Sheller, Mimi. 2011. Mobility (Review article). Accessed at <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>

to examine points in space-time at which the urban structure of spaces (nodes, junctions, streets, etc) puts constraints on the way we interact with the virtual medium.

Introduction

Locative media applications and their related practices cannot be taken as just an entity introduced into our everyday experience of spaces, nor do they operate by removing us to a remote site of computer interaction: since they have entered into users' daily activities and practices, they have been affecting the ways that users make sense of their surroundings, and thus need more attention and exploration from different angles and disciplines, including architecture.

There are media-architecture fields and studies that are emerging: new branches and disciplines within architecture that explore the possibilities and potentials of media technologies to re-create or alter architectural place-experiences or those that examine new spatial understanding and spatial possibilities as a branch of architecture. Matsuda⁸⁵ is an example of an architect who believes that the architectural discipline will be divided into two main branches, one of which will still deal with the material environment, the other of which will explore the possibility of virtual media for creating different place-experience. Thus, locative media, in the wider frame, provides a lens through which the spatiality of urban spaces can be viewed, experienced, or possibly altered/produced. And as Dourish and Bell pointed, these technologies do not simply operate within a specific environment; they are implicated in the production of spatiality and spatial experience.⁸⁶

Dourish and Bell also hinted at the socio-cultural implications of locative media in the production of spatiality and spatial experience, noting that our knowledge of the environment is shaped through the way we encounter space, and is mainly framed by cultural logics (or what is often referred to as a series of collective understandings), which help to shape and frame particular meanings. These logics themselves are a product of socio-cultural encountering, based on action-reaction in our everyday life. Thus they argue: 'Information technologies provide sites and occasions for the development of new forms of environmental knowing'.⁸⁷

From a critical point of view, locative media provide an interesting framework within which we can begin to understand how these technologies frame our understanding of space and place more broadly. These might be considered as legibility lenses (Dourish and Bell, 2011). Places mediated through technology do not stand apart from our everyday life, but as Dourish argues, they provide a new set of ways for the physical world to be practised and understood.⁸⁸ Moreover, they do not create a distinctive sphere of practice, but rather open up possibilities of interaction in the context of our everyday world.⁸⁹

Many studies have approached locative media from the perspective of hybrid space as a form of spatiality that is created when virtual mediums (with layers of information) are incorporated with the medium of walking (as a form of production of space with alternative spatiality). In particular, De Silva, (2006, 2009) developed the term to explain the change in perceiving familiar spaces with locative media, arguing that familiar physical spaces transform into a hybrid space. She defines this

⁸⁵ <http://www.dezeen.com/2014/10/15/keiichi-matsuda-architecture-augmented-reality-architects-become-game-designers-filmmakers/>

⁸⁶ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press. p.120

⁸⁷ Ibid. pp.130-131.

⁸⁸ Dourish, Paul. 2006. "Re-Space-Ing Place: 'Place' and 'Space' Ten Years on." In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work*, 299-308. CSCW '06. New York, NY, USA: ACM.

⁸⁹ Ibid.

space as being created by constant movement in space while carrying a portable device which is always connected, “always on”.⁹⁰ Locative media can renew the experience of space through integrating two mediums and two ways of exploring urban space: the medium of the body in the space incorporated with the new perspectives offered by information. Since the whole activity happens ‘on the move’ within an urban context, locative media integrate the practice of walking as a mode of actualizing many possibilities of context with new layers of information that enfold the spatio-temporal understanding of the context along with the practice of mobility.

In a mediated experience with augmented reality applications, we communicate with our surroundings and make sense of the world in a collaborative act, which is a collaboration of moving bodies in material space, potentials of technology to actualize other possibilities of space (for instance, the possibility of inhabiting spaces of memories or other’s narratives), and lastly the possibilities and constraints exerted by the built environment (which is the third element of the whole assemblage that directly or indirectly affects the mediated experience of spaces).

It was this shift in perceiving familiar spaces after new media that become the main focus of investigating Streetmuseum, addressing how locative media might transform context by enfolding digital information not just as remote data (disconnected from reality) but rather as virtualities (potentials⁹¹) that could be actualized, and could possibly help in creating different realities or different relations to reality, all of which still occur ‘on the move’ in the built environment.

Technology has always affected the ways we interact with place/space/reality. Tools and mediums we have used prior to the emergence of locative media technology have all shaped (and new technologies have reshaped) our understanding of reality, and it is not new to discuss the effects of technology (e.g. media technologies) in shaping reality, or what Paul Virilio referred to as having a *reality effect*.⁹² But each technology frames reality differently, based on its specificities; each manipulates or forms different environmental knowledge. The understanding of urban life has long been constructed and shaped through technologies that we have used in our everyday lives, which has in turn been mediatized by technologies that shape our knowledge of our surroundings.

In the case of newly introduced mediums and technologies (here, locative media), the *reality effects*—how a different medium interacts with reality/material of the environment and how it alters/appropriates spatiality—could be discussed in many different ways and on many levels. Here, through the case study of Streetmuseum, I will only cover those aspects related to augmented reality applications. These effects will be discussed in terms of:

- Creating and revealing spatial narratives of space and affecting users’ patterns of engaging with the materiality of urban spaces (environmental knowing).
- Giving value to certain places by encouraging users to explore them and thus respectively discouraging to explore other locations (proposing and inserting values in space).

⁹⁰ Silva, Adriana de Souza e. 2006. “From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces” 9 (3): 261–78.

⁹¹ The Deleuzian concept of virtual as a “potential” suggests a different way of thinking about virtual: Virtual is not opposite to real, rather, it could be actualized as reality (actual); in this way of thinking, he considered virtual as a potential that has not yet been actualized but could be; something that could become actual. Cited in: Deleuze, Gilles. 2005. *Cinema II*. A&C Black.p.70-83

⁹² Beard’s reading (virilio vision machine) mentioned how transportation technologies enabled this shift in our perception of space: “mental mapping evolves with the transportation revolution and the communication revolution. The faster I travel to the end of the world, the faster I come back, and the emptier my mental-map becomes” (Virilio,1994, *Vision Machine*, 42). Cited in: David Beard, Joshua Gunn. 2002. “Paul Virilio and the Mediation of Perception and Technology.” accessed at http://www.researchgate.net/publication/239925767_Paul_Virilio_and_the_Mediation_of_Perception_and_Technology

- Affecting the association of users with place through enriching the ways users connect to place (place-attachment).
- Creating an authentic experience, developing and designing the stage for visitors and tourists.

Streetmuseum also provides a good opportunity to explore some of the broader concerns regarding how locative media is changing our perceived spaces. It helps in examining the concept of *place-making potentials of media on site, or the possibilities of shaping experiences*.

To begin, *Streetmuseum* will be introduced.



Fig. 3.1 This application uses a screen-based mobile interface and provides the superimposition of hundreds of images of old London onto the present materiality of the central part of London.

Streetmuseum

Streetmuseum's background

Streetmuseum is a locative media application sponsored by the Museum of London and developed by Brothers and Sisters. It is considered an augmented reality application in which information is attached to physical places (HCI workshop, 2007). This application uses a screen-based mobile interface to provide the superimposition of past events (hundreds of images from London Museum's collection exhibiting old London and its history from the "Great Fire of 1666 to the Swinging Sixties"⁹³) onto the present materiality of certain streets in central London and to provide an accurate picture to users with a geographical information system (GIS) and geo-tags. It works by recognising particular locations and through the use of computationally enhanced viewing screens, superimposes the historical images over physical space. In terms of how the application shapes interactions and in regard to Superimposed Information Interface Points: since it uses GPS technology, application brings images of the surroundings to the user based on location. Thus the choice of images delivered in 3D mode depends directly on the user's location.

⁹³ Description is provided and available on the original website: <http://www.museumoflondon.org.uk/Resources/app/you-are-here-app/home.html>

In this case, the system of virtual information (annotations plus images) depends upon the ‘accurate’ positioning of the viewer and the portable device (iPad or smartphone (iPhone or Android)).

Streetmuseum is organized around a network of points/locations that I will refer to as SIIPs (Superimposed Information Interface Points). Each of these points involves the superimposition of a virtual image, and the points are scattered around the centre of London. Each virtual image can be detected and seen through a smartphone or an iPad. These each have a virtual boundary within which the user can see the image on the screen of their smartphone. Additional geo-tagged information text is provided, relating to each image and made available both on the map representation as well as in 3D mode: by clicking on each photo that the user spots on the screen, the extra information regarding that specific point will be presented. *Streetmuseum* provides a direct and tangible connection between virtual information (old images/narratives of the same place with annotations and their stories). The unique aspect of this specific augmented reality application lies in its representational medium, how the information is represented and the way the user interacts with the medium. Information is represented in three distinctive representational mediums shown in Figure 3.3, which the user can toggle between in an intuitive way.



Fig. 3.2 Streetmuseum is an example of location-based applications that potentially unfold new ways of socio-temporal engagement with familiar spaces and new ways of interaction with/in an urban context. This image shows a user in action, where she explored urban context based on the quest of finding a SIIP.



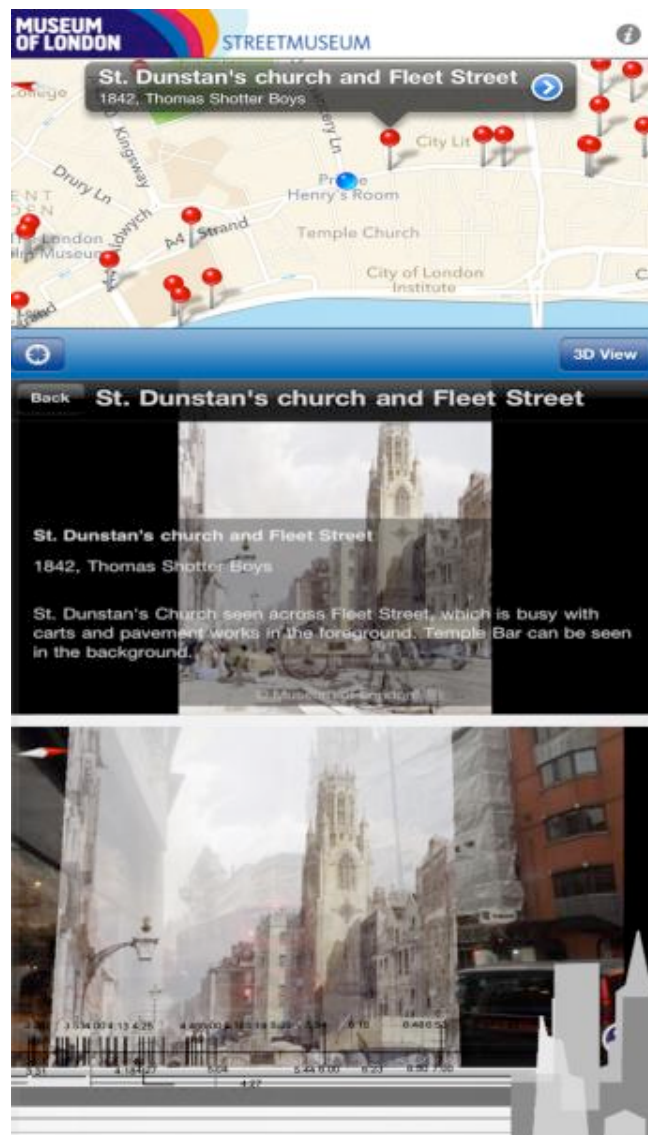


Fig. 3.3 Streetmuseum offers three different modes/representations: map, image-text and 3D mode.

How it works, who might use it

Streetmuseum provides multiple modes of mediating urban-spaces with virtual information. In use, it offers three different modes, three different types of representation of space—3D view, Map and Text-image—each mediating the experience of space in a different way (Fig. 3.3) It is possible to switch easily between these different modes, each of which can be used very intuitively. By choosing *map mode*, a user can see a map of all SIIPs scattered mainly within the centre of London. The map mode also shows the location of the user in regard to the points.

By clicking on any one of the SIIPs highlighted in red on the map, the user can also see the superimposed image on that point without necessarily being at the location to which the image refers. For a user who walks around the centre of London, and explores each SIIP, there is an area around each point, based on parameters defined by the developer of this application, within which the user can see images in 3D mode. This zone I will refer to as the affordance zone of the SIIP.

The strongest mediation arguably comes through the 3D mode (see Fig. 3.3: bottom image) in which the participant could hold her phone in front of her face and see historical images being placed into her phone screen whilst she can still see the (physical) background streets. By running the application in

3D mode, the back camera projects what is behind the phone whilst at the same time, if she is close to any SIIP, she can see images spotted by her phone.

Having selected an image of a place on their phone in this way, they can walk towards that SIIP (navigating using Map or 3D view if required); once they arrive at the SIIP, they can adjust their precise position and view in order to align the old image with the materiality of street viewed in front of them, effectively regaining the original point from which that photograph was taken. At this moment, the user is also able to click on the image given on her screen, and she can read more information about that scene provided in text format (Fig. 3.3, central image).

Streetmuseum mainly provides interfaces of this type, where a virtual layer of information (here, this extra layer comprises images presenting old London, supplemented by a second layer of detail given in the call-up texts) is superimposed over real space. The new types of interaction it thus provides will be discussed in detail later, but it can be taken at the outset to be a successful attempt to show the potentials of locative media in delivering content into a present context at the time of encountering.

Methodology: Trans-medium Methodology

Trans-medium methodology, inter-dependency of medium, and meaning production

Acknowledging the existing diversity of representational regimes and visual mediums, tools and techniques used in visual studies, while responding to fragmented detached ways of analyzing and negotiating visual study, here an interconnected method is developed that blurs the boundaries between conventional separated mediums and methods of *documenting/analyzing and representing* information regarding studying a context. This emerged based on my tactic of employing overlapping and transiting between mediums, which I have referred to as a ‘trans-medium methodology’.

With trans-medium methodology I do not propose a new method; rather, it is a framework that keeps an interrelated approach to the way we employ visual mediums in the process of negotiating and studying a context. This can highlight the potentials of shifting in between different mediums (of documenting, analyzing and representing) applied in all steps of a visual study, addressing the varied and dynamic interrelationships of mediums of representation and their embedded potentials of transforming information collected as a matter of ‘medium specificity’.¹ The contribution of this methodology is to raise attention to the potentials of transiting between mediums that conventionally are used (separately) to collect data, analyze data, and represent data, and by acknowledging the specificity of each medium (with potentials and constraints), and by shifting and transiting between those mediums, overcome those constraints and thus provide complementary understanding of the context of the study. Moreover, by transiting between mediums and exploring the gaps/potentials each has, it will thus negotiate the potentials of gaps in-between as productive and generative spaces.

To clarify, I will deconstruct the whole process of how I conducted the study into steps, and based on the stages/steps that I took, I will construct the whole image. To do so, I will start from the first step that was to record the context, where I used the mobile method.

Mobile method

To capture aspects of an emerging condition which involves the superimposition of urban spaces with virtual information available at the point of encountering urban places, and to observe some aspects of

¹ By medium specificity I refer to the significant qualities that each medium has: its unique capabilities and affordance with (its constraints). And by acknowledging these aspects and by moving from one medium to the other, an exploratory space is created that overcomes those constraints, which provides a more complementary understanding of study.

mobile participants' behaviour and their way of interacting with urban mediated places, I adopted an ethnographical/mobile methodology. This section presents only the methodology developed for the close studying of a user's patterns of using the augmented reality application of Streetmuseum.

Mobility research, and its related mobile methods in the broadest sense, are concerned not only with physical movement, but all different forms of mobility (material/immaterial/virtual information, mobility of people, goods, information and all their relational dynamics and effects²). This umbrella encompasses all related forms, mediums, and practices related to such movement, and the possible ways different forms of mobility interact. Mobility has a strong relation to embodiment, potential movement, human interaction with space, immobilization and forms of dwelling and place-making.³ Mobility studies also contribute to the development of mobile methods that can capture some aspects of the urban complexities, dynamic processes, interactions of various forms of mobility, lively experimentation, and of material/immaterial movements of entities.

Because of the nature of the current study, that included and overlapped with different types of travelling that were happening at the same time as physical travelling (corporeal urban exploration) intertwined with flows of information, personal and collective memories, and images, a research method that is "on the move"⁴ and could reflect the nature of the context was adopted. The methodology adopted is constructed using mobile methodologies (mobile methods).⁵ This specific method and similar methods of "Walking with",⁶ walking/interviewing/video recording, "Participation while interviewing",⁷ video-ethnography, Sarah Pink⁸ action research, arts-based urban interventions, and being 'mobile-with',⁹ are all forms of methodologies that map and trace movement or activities over time, and observe users' patterns of moving and making sense of places. These methods all require the researcher to participate in patterns of movement and space-making, and then interview people (individually or in focus groups) as a method to know how their diverse mobilities constitute their patterning of everyday life. The similarity between all these methods is that at their core, they have potential to examine on-site embodied experiences.

² Sheller, Mimi. 2011. Mobility (Review article). Accessed at <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>

³ Büscher, Monika, and John Urry. 2009. "Mobile Methods and the Empirical." *European Journal of Social Theory* 12 (1): 99–116.

⁴ Büscher, Monika, and John Urry. 2009. "Mobile Methods and the Empirical." *European Journal of Social Theory* 12 (1): 99–116. **They suggested Mobile methodology as it remediates the neglecting of various flows of people, objects, memory flows... occurring in social political context of urban spaces.**

⁵ Mobile methods also are adopted for explaining, and formulating assemblages of fragmented and mobile geographies. Büscher, Monika, and John Urry. 2009. "Mobile Methods and the Empirical." *European Journal of Social Theory* 12 (1): 107.

⁶ Sheller, Mimi, and John Urry. 2006. "The New Mobilities Paradigm." *Environment and Planning A* 38 (2): 207–26. doi:10.1068/a37268.

⁷ Bærenholdt, Jørgen Ole. 2004. *Performing Tourist Places*. Ashgate.

⁸ Pink, Sarah. 2009. *Doing Sensory Ethnography*. SAGE.

⁹ Cited in Sheller, Mimi. 2011. Mobility (Review article). Accessed at <http://www.sagepub.net/isa/resources/pdf/Mobility.pdf>.p.4.

Trans_Medium Methodology

PhD student: Maryam FAzel
Supervisors Stephen Walker
Mark Meagher

Defining two Observational Frames
Mobile Phone Screen recording
Gestural/Postural video recording
of Participants plus background

Screen shots of video-redording
which trace participant's interaction
with media in urban context

Decoding the information:
Transforming the Visual documents
into verbal/action-time diary

Abstracting the whole activity into
action based path diagram. To do so,
Architectural Medium of AutoCAD
was applied in the process of data-
abstraction. By doing so (By abstract-
ing the whole event into
actions/time), tracing repetitive pat-
tern of actions, were possible.

Each action or shifting between ac-
tions or spaces has a unit described
by an extra layer of text (information)

Referring Back to the initial medium
of documentation (video recording)
in order to negotiate hidden aspect
of the work

Time -based interaction diagram also
enabled to look for points in space time
in which physical spaces put constrains
on the way participant interact with
virtual medium, or the points in which
they act as complimentary elements and
enhance our association with space.

By Spatializing the abstract informa-
tion into Map format, It become pos-
sible to assign each of
action/interaction to its physical
counterpart on the map. By doing so
-by connecting abstract data with
physical space- tracing the behavioral
patterns of use and realizing the
forces behind any change become
achievable.

Modification process
By shifting back and forth between pre-
vious abstract diagram and this spatial
format, patterns of behavior that pre-
viously were indescribable in abstract
format, now, become more understand-
able. Referring back to previous
medium justifies actions and interac-
tions of participant, since it revealed
hidden forces or motives exerted from
the context, modifications of physical
behavioral patterns was more negoti-
able.

Trans medium methodology and Interdependency of medium and meaning production
Acknowledging the existing diversity of representational regimes and visual mediums, tools and techniques used in visual studies, while responding to fragmented detached ways of analyzing and negotiating visual study, I applied also suggest an interconnected method that blurs the boundaries between conventional separated mediums and methods of documenting This suggestion is based on my tactic of employing, overlapping and transiting between mediums, called 'transmedium methodology'.
By Transmedium methodology I do not propose a new method; rather it's a framework that keeps an interrelated approach to the way we employ mediums. This can highlight the potentials of shifting in between different mediums of representation applied in all steps of visual study, addressing the varied and dynamic interrelationship between mediums of representation and their embedded potentials of transforming information as a matter of 'medium specificity'.

In order to get an insight into Social and individual aspects of interacting with media in real physical context of interaction and to figure out the interplay between context, new media and user, I needed to grasp the essence of use at exact point of use in real context. Therefore I developed a Ethnographical Walking video recording of user in two main Observational frames in order to cover a holistic negotiation of informants behaviour in real time. I was hoping that through specific frames of observation and expanding the visual ethnographical method from just (mobile phone screen recording) to Gestural_postural video recording of participant plus its surrounding more layer of information will be unfolded. Therefore a sensory user_oriented methodology was developed to navigate users of locative media on the site of engagement in real time.

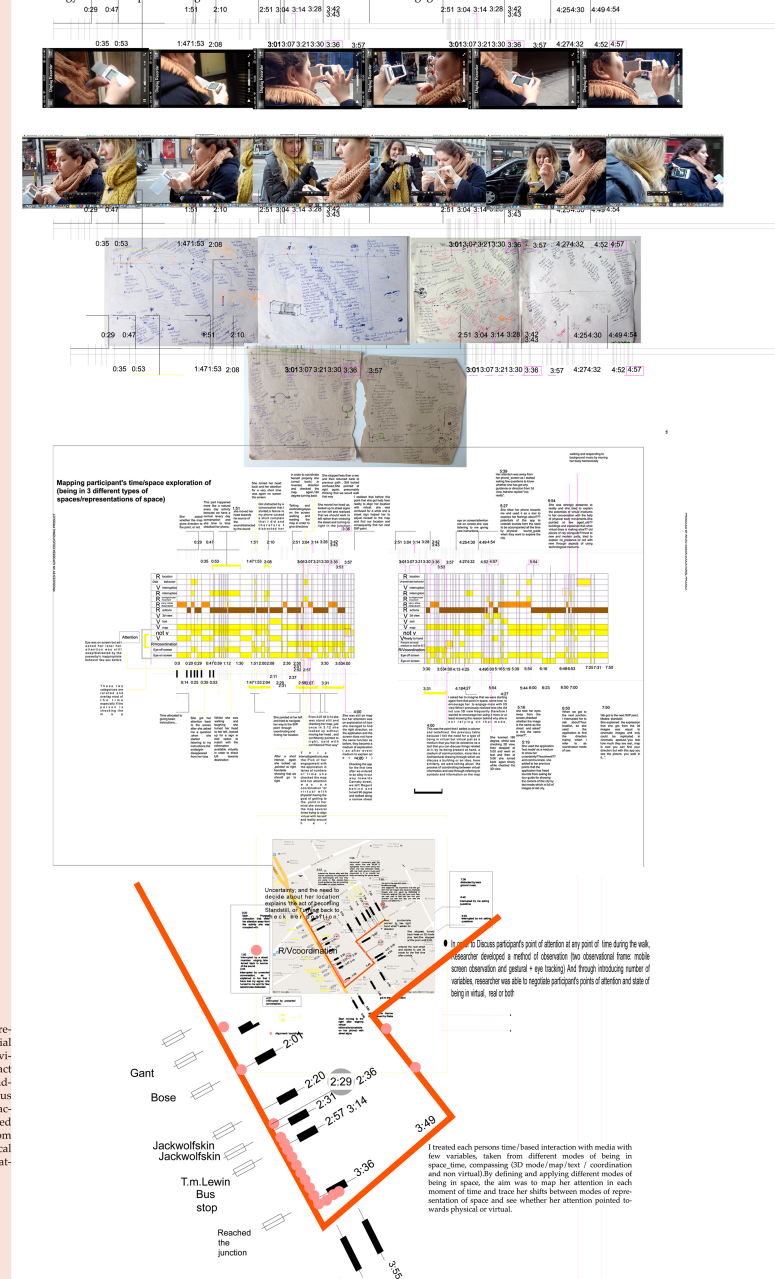


Fig. 3.4 This caption is a summary of the processed methodology. Please see the list of the sequences defining the process provided as a column in the left hand side. All steps of the process are explained in the following sections.

Trans-medium methodology is applied here to offer an insight into the interconnected relations between mediums and meaning-production to show how this transiting back and forth between mediums can generate new meaning. Following the aims of the case study as an empirical/ethnographical field study seeking to understand how people interact with new locative media¹ applications in the context of everyday life, I used number of mediums and shifted between various frames of *observation* (mobile screen recording plus gestural recording), then I translated the information I collected from the site into time-based word diagrams (Fig. 3.7), where all the interactions were recorded. In terms of *analytical/investigative mediums*, I used the visual medium of Architectural AutoCAD to abstract the interactions into time-based diagrams and the outcomes of those abstractions were reflected back into the medium of Map (Fig. 3.10).

Ethnography/observations/walks

I undertook ethnographical walks with five participants who were not familiar with the *Streetmuseum* application in advance of the experiment. Since we are new to augmented reality applications, and these technologies have only recently started to become inserted into our urban life, I wanted to record the ways participants used the application for the first time, their challenges, the way they communicate with their environment, and to observe how urban streets, or the material world around them more broadly, affected the way they dealt with the virtual information that was inserted into the city via *Streetmuseum*.

In order to gain an insight into the social and individual aspects of interacting with media in real physical situations, and to figure out the interplay between context, new media and user, I needed to grasp the precise dynamics of use at the exact point of application in the real context. Therefore I developed an ethnographic walking video-recording arrangement: this took place in *two main observational frames* in order to provide a cross-referenced capture of each participant's behaviour in real time.² *Two recordings were happening simultaneously. First: recording a user's screen activities, and secondly, observation conducted to grasp her interactions in a bigger frame, one that captured her gestures/posture and in general her interaction within the urban context*³ (Fig. 3.5).



Fig. 3.5 I conducted ethnographical walking video-recording in two different frames. First: recording the user's screen activities and second: observing her interaction in a bigger frame that captured her gestures/posture and in general her interaction through the urban context.

¹ By locative media I refer to location-based applications that can detect the location of a user and deliver related information to the site through devices such as a mobile phone at real time.

² Sarah Pink has developed this method of walking video-recording but I adapted the method. I am suggesting that we observe the interaction in a few simultaneous frames of observation within a few different mediums.

³ Italics for emphasis



Fig. 3.6 This caption shows two frames of observation: screen-recording/screen-activities plus gestural/postural recording.

Through specific frames of observation, and by expanding the visual ethnographical method from just the mobile phone screen to include gestural and postural video recording of participants in their surroundings, more layers of information were gained. In this way, a sensory user-oriented methodology was developed to navigate users of *Streetmuseum* on the site of their engagement in real time (see Figs 3.5 & 3.6).

Experimental walk

I chose three points (SIIPs) whose virtual images overlap reality, close to Regent Street in the centre of London (Fig. 3.7). These had overlapping borders and they were all visible in the 3D model. Each participant could spot them on her phone since they were located close together. To walk to and pass all three points would take approximately ten minutes. For each walk, first I gave the participants instructions about how to work with *Streetmuseum*, and let them familiarize themselves with the application. I then asked them to get to the third point by first passing by the first and second points. On completion of the walk, each participant undertook a short structured interview on site. For each participant the whole experience would take about 40 minutes. This was followed by an in-depth interview conducted seven days after the walk.

Following the desire to negotiate the relation of virtual information and physical spaces, fields of influence and patterns of interaction, and how each domain of space use affects the other, I developed the technique of *trans-medium space-time path*, which was a method of recording physical and virtual activities over a period of time. This initially involved the application of different frames of observation; and, subsequently, moving back and forth between mediums of representation and analytical mediums. A space/time map is a structure used to record, analyse and represent visually the 'territories of influence' which refers to the ways in which virtual and physical *beings* affect each other, how they influence behavioural patterns of use, physical context or virtual mediums.

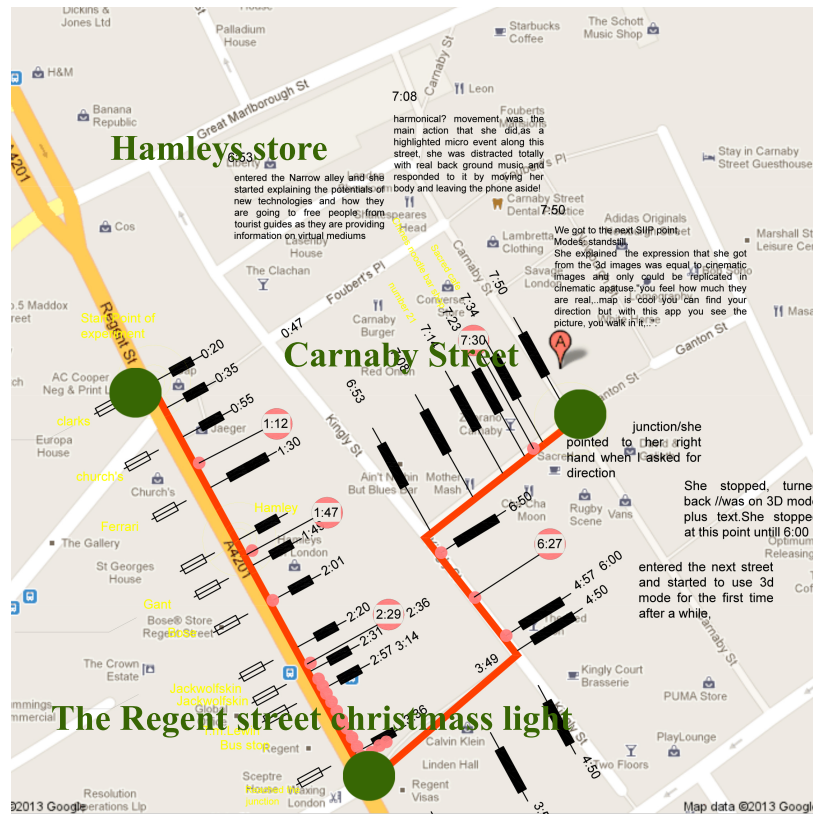


Fig. 3.7 The map in this figure represents the location of the 3 SIIPs where participants were asked to take the journey, from Hamleys to Carnaby Street by passing the Regent Street point.

Word/action time diagram

The visual information collected (video documents) provided the base for the next phase of analysis. This crystallization of the activity and sequential approach to video documents was very helpful here, where information the videos contained was translated into time-based word/action diagrams (Fig. 3.8).



Fig. 3.8. The information provided from video-recordings was translated into words/action time-based diagrams.

By watching the video several times and pausing each time the participant changed her attention and moved her eye away from screen, or changed from one screen mode to the other, or if she was distracted for any reason (e.g. physical distractions, such as getting close to a junction), all of her interaction/distraction that was previously recorded by two cameras were now translated into the word/action diagram. I watched the video several times and extracted the data according to the following codings: *any action, interaction, any pause in movement, any disturbance even eye contact/distraction patterns of participants.*

AutoCAD as the medium of abstraction

I used AutoCAD to draw the time-based map of the user's interaction with the application. The data that I extracted from the word/action diagram was then transformed and visualized into abstract time-based diagrams in Autocad . I treated each person's time-based interaction with the application within the context of urban space, according to a few variables taken from different modes provided by the application: whether her attention at any point of time was on the virtual or the physical (Virtual/non-virtual) or if she was trying to coordinate between information provided in virtual and real urban material (coordination points), and if a participant's attention was on virtual, which mode of representation she was using (3D mode/map/text).

If a person's attention was on the virtual, it could be on map, text/image, or 3D: holding up the phone to see virtual images popping up on the screen. Alternately, her attention might be on finding directions and coordination. By defining and applying these different modes of being in space, the aim was to map her mode and focus of attention at each moment of time, and to trace her shifts between modes of representation, observing whether her attention was directed towards the physical or virtual at each shift. By introducing a number of variables, I was able to chart each participant's points of attention and states of being in virtual, real or both, as well as the points of shift and the main causes of this shifting. The time-based interaction diagram that this produced also enabled me to look for points in space-time at which physical spaces put constraints on the way a participant interacted with the virtual medium, or the points at which they acted to complement elements and enhance their association with space.

For each shift or change/shift in interaction (e.g. from virtual to real, or any change in her habit of walking (slowing down, stopping, eye off the screen/eye on the screen, any turning, etc)), there is a line in the diagram that represents those alterations in her interaction.

Variables defining patterns of use and the user's point of attention at any moment in time.

R: represents real spaces – urban space

V: represents the virtual

There are 3 different representational mediums or modes of virtual information delivery, which means that each user at any moment in time can engage with any one of the modes. V map/V text/ V 3D-view

R/V: the user is trying to coordinate between virtual information and physical space. Since the information in the virtual was related with physical setting, the user sometimes needed to get the right direction to associate virtual information with physical; thus I added this variable to previously defined categories.

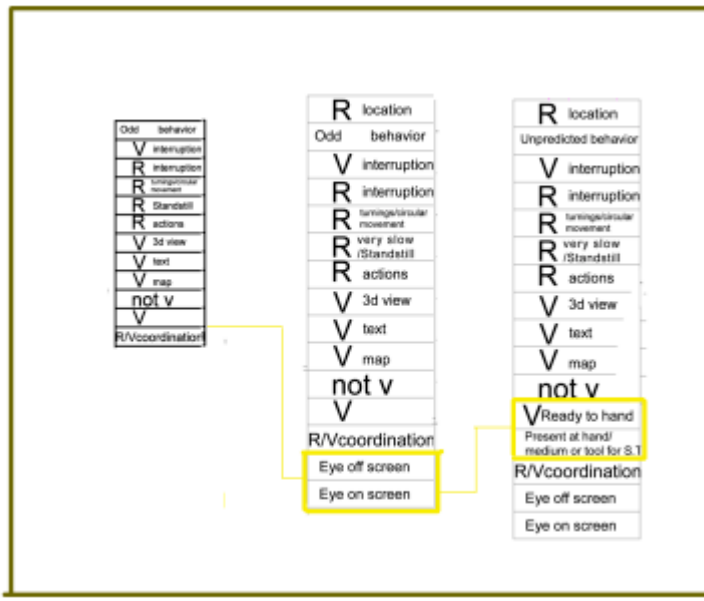


Fig. 3.9 Variables defining patterns of use and points of attention

R: represents real spaces – urban space

V: represents the virtual

Not V: which means her phone showed she was using virtual but her attention was not on the virtual

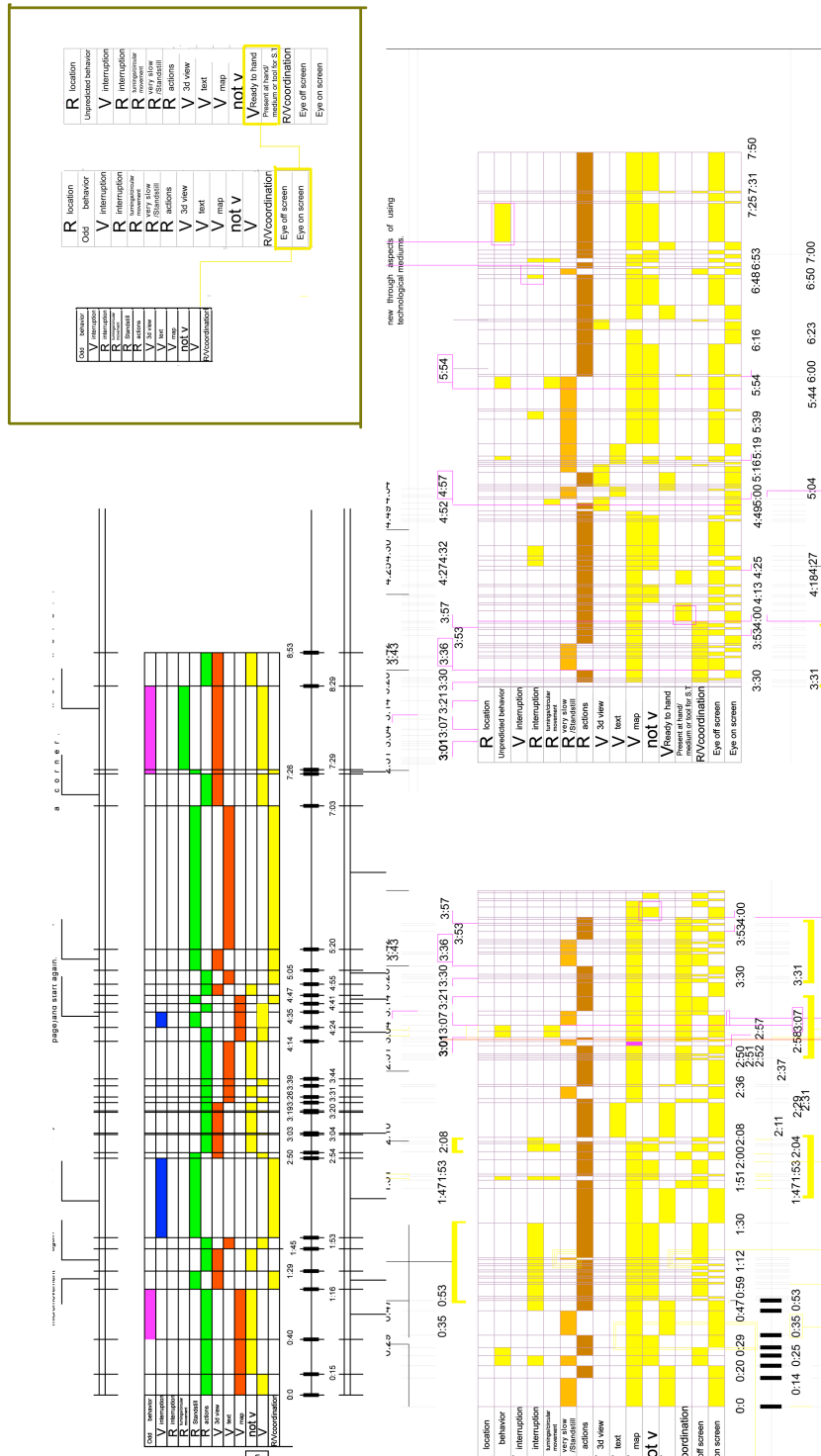


Fig. 3.10 The number of variables I defined to describe the user's point of attention increased due to the need to explain her interaction in the urban space. I defined *eye off the screen/ eye on the screen* to count the frequency of shifts between the virtual and reality. It becomes obvious that the frequency of shift shows uncertainty of the user in her interaction, which means either she struggled to adjust information provided in the virtual to reality, or she had difficulty in finding her location in relation to such information. There were points where the participant was getting close to a junction and she was not sure about her location or her next destination; thus she shifted more frequently from real to virtual and back.

Locative Media From Transcendental Technologies to Socio-Formative Spheres: An Examination of The Interface between Place, Agent and Locative Media

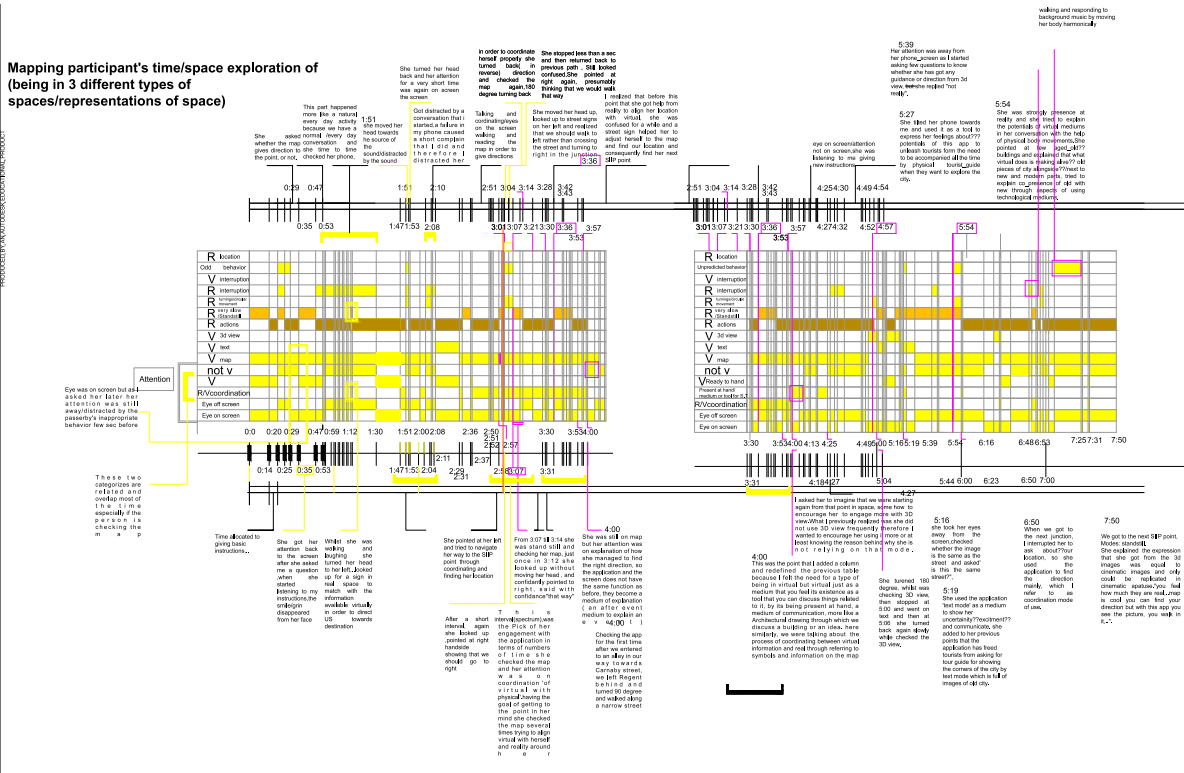


Fig. 3.11 Mapping the participant's time-space diagrams.

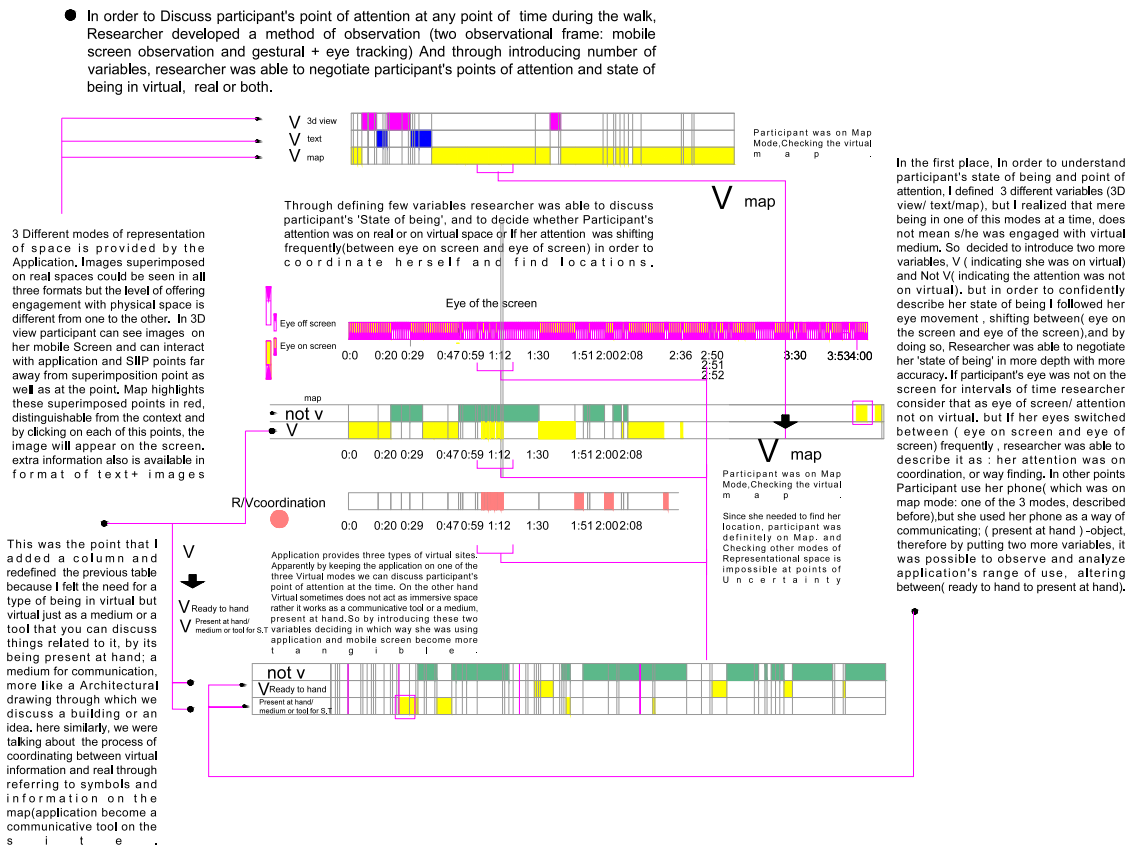


Fig. 3.12 The figure shows the variables that define the participant's point of attention at any moment in time. Three different modes of interaction with information are provided by the application. The user can easily switch between those modes of representation. This caption illustrates the process and frequency of shifting between eye movement (where the user's attention is at any point in time). I needed to know which mode of virtual she was using, thus the three forms and modes were added as the basic variables. But then I realized there were times that the user was on the virtual but her attention was not; thus, I added the variable: Not V, indicating that although she is using the virtual her attention is not on the virtual. For more information please read the text provided within the Figure.

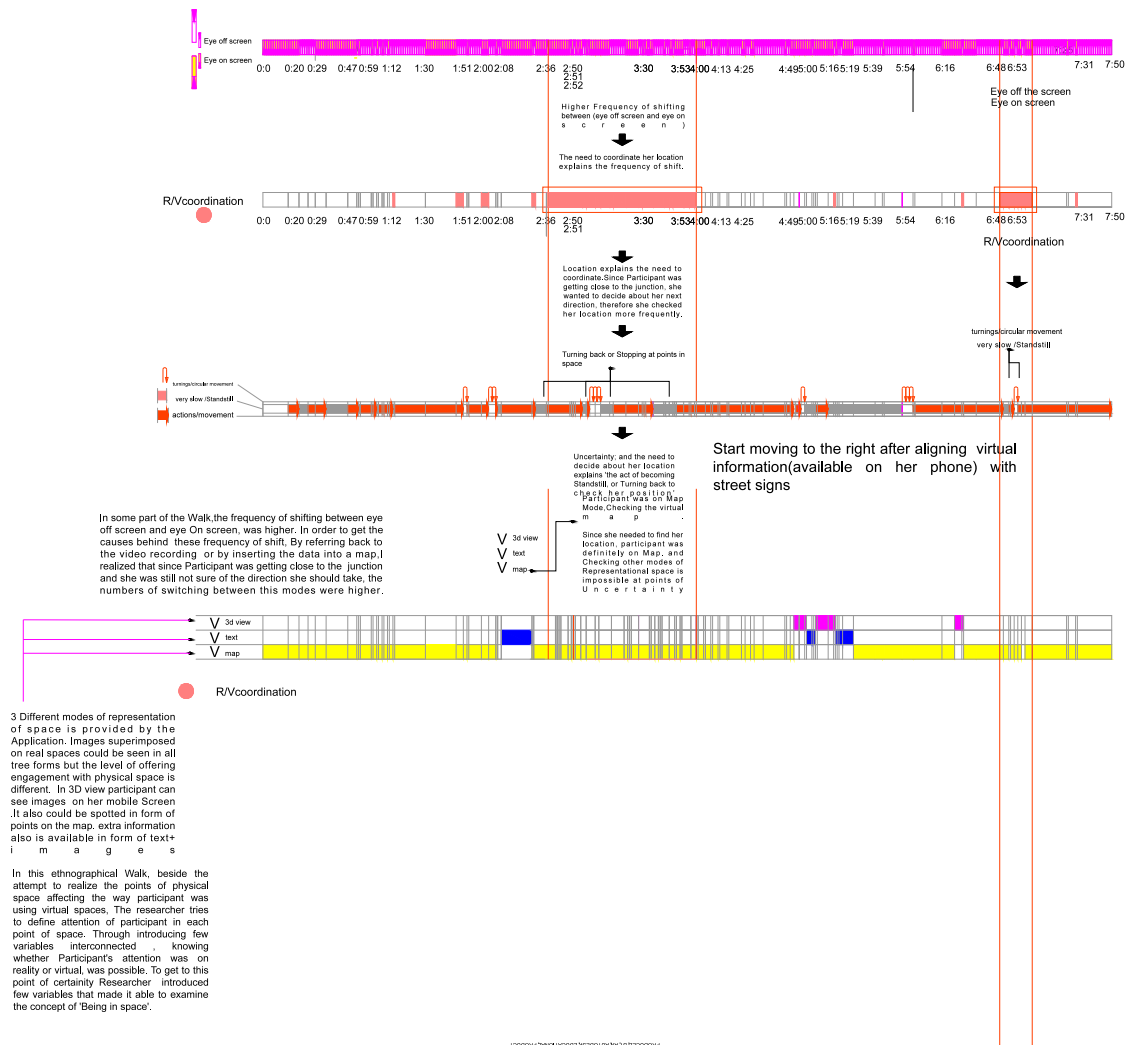


Fig. 3.13 The Figure represents the incident where the user was getting close to the junction and her frequency of shift between the virtual (map mode) and physical was higher than the intervals before and after. Later on, in the reflection session interview, she indicated that she had had problems adjusting to her location. Please read the text provided in the figure.

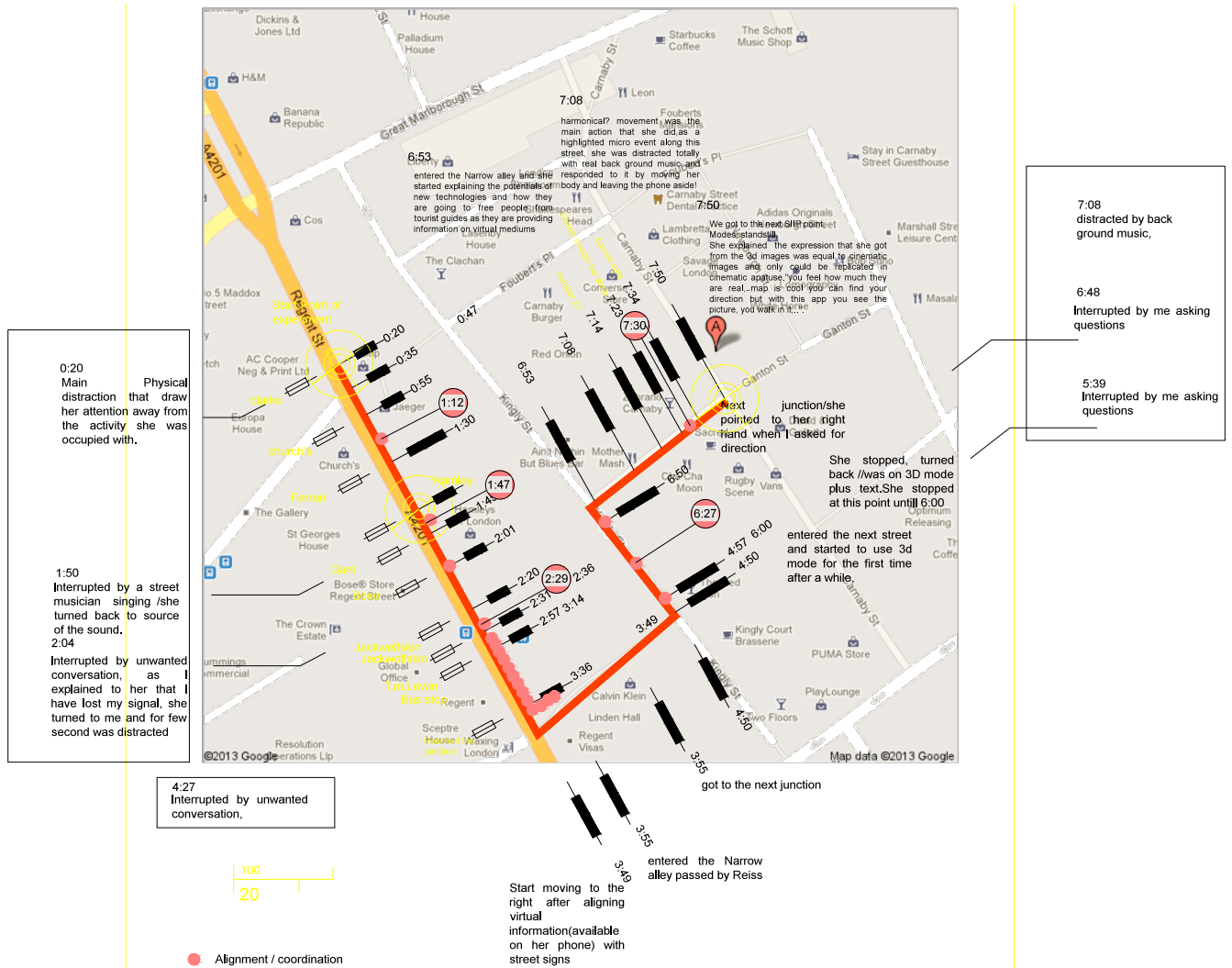


Fig. 3.14 The actions/interactions of the participant were reflected back to the map of location

Reflections on the map

The final step was to reflect back all the interactions during the walk and all the main shifts of attitude back to the map. After all aspects of the participant’s interactions were recorded and visualized, in the format of a time-based diagram, I reflected all of those main shifts in her interaction back into the map. By doing so I was able to discuss the points where her interactions were affected by physical properties of space. As it was expected, the borders and boundaries of physical space, points and qualities of material urban context, defined constraints on her interaction. Getting close to a junction, entering a new alley, crossing a street, and background noise were examples of causes of distraction in the nature of her interaction.

One of the outcomes of this study was the idea that meaning emerges in the production and in the process of working and transiting between mediums accumulating, analyzing and representing data. Through the whole process of such a transition between mediums, exploratory space is provided for the researcher to study/negotiate the context in different levels, and to potentially see and address the gaps/limitations of the applied medium. Such a process increases the robustness of the data and analysis produced. The emphasis is on negotiating the potentials of shifting back and forth between mediums: from the first visual medium to the next and then referring back to the first, and so on, over and over; walking at the edges, in order to reveal hidden information or to recreate information along the process of “in-betweenness” of abstraction, concreteness and finally data spatialization, or in the act of trans-medium transition, as a way of drawing out not-yet-revealed information or generating not-yet-created information.

By eliminating/reducing differences and steps between mediums, mainly considered as collecting data from those that analyze data and those employed for representing data, by moving between mediums of (collecting/analyzing /representing information) the idea was to produce a fluid transition. By having fluid transition between mediums, and through visualizing all the interactions as (time-based word diagrams, time-based action diagrams, reflections on the map), many aspects and behaviours become visible. Those mediums each had different specificity, thus the way information was represented/structured/organized was utterly different. Since each medium has its own specificity, and by medium specificity I refer to significant qualities that each medium has: its unique capabilities/affordance with (its constraints), each potentially highlights some aspects of the work more than others, and some factors become less important; for instance, video-recording as a visual medium represents information in a concrete manner, while Autocad is a medium of representation of data, abstracting data and using it mainly to represent relations between things. But by employing different mediums and by moving between them, speculating space was provided that enabled me to observe/negotiate hidden (or not yet observed) aspects of the site and move beyond and overcome the constraints of each medium; thus a more complementary and dynamic understanding of the study was provided.

By trans-medium methodology I proposed a framework that keeps an interrelated approach to the way we conventionally employ visual mediums in the process of recording/negotiating and studying a context. By eliminating, or at least reducing, the space between mediums that are mainly considered data collection by those that analyze data and those for representing data, which is achieved by moving between those mediums (collecting/analyzing/representing information), the intention was to produce a fluid transition. By having fluid transition between mediums, and through visualizing all the interactions on a time-based diagram, many aspects and behaviours become visible only because those mediums were different (in terms of medium-specificity and how information is represented, how data is structured, how they organize findings, etc). Since each medium has its own specificity, each potentially highlights some aspects of the work more than others, and some factors consequently become less important (for instance, video-recording as a visual medium represents information in a concrete manner, while Autocad as a medium of representation of data abstracts the data and mainly is used to represent relations between things). However, by employing different mediums and by moving between them, a speculating space was provided that enabled me to observe/negotiate hidden (or not yet observed) aspects of the site/behaviour.

This can highlight the potentials of shifting between different mediums (of documenting, analyzing and representing) applied in all steps of a visual study, addressing the varied and dynamic interrelationships of mediums of representation and their embedded potentials for transforming information collected as a matter of ‘medium specificity’.

Findings: Developing the concept of interface-dependent production of place-experience

In the following, the findings of this case study will be addressed. Findings as I noted before are based on interviews plus visualization of interaction plus personal observation by the researcher. Those methods and frames of enquiry acted as lenses through which to develop/discuss what I will refer to as the practice of ‘interface-dependent production of place-experience’. Thus through the findings and observations of this case the concept of interface-dependent production of place-experience will be theorized.

To do so, through the following sections and categories, I will discuss those relevant issues gathered from observation plus the ethnographical walk with a number of users.

In order to provide a better visualization of the interaction between layers of information, visual materials, the medium of walking, and the medium of urban space, I will explicate the walk by dividing it into categories based on relations between virtual information and physical place. These categories are: **Complementarity effect; Generating effect; Temporal place-making potentials; Revaluating spaces; Embodiment; and Micro-alignment.** These will be discussed in turn below.

Complementarity effect:

Incorporation of the ‘location-aware map’ with two other types/mediums of representing information creates a unique and blended experience of urban space for users. In this case, rather than being layered on top of a space, they come to transform both the space and the ways that people act within it.

Following the main concerns—how virtual and physical mediums affect each other and how they potentially communicate—I am adopting the terms used by Mokhtarian to describe the relation between physical and virtual mediums in the context of urban spaces throughout the walk, which are: *substitution* (elimination, replacement), *generation* (stimulation, complementarity¹), *modification*, and *neutrality*. Although the terms were applied in a different context (Telecommunications and Travel), but as her categories describe whether virtual information might possibly replace the need for physical travel/interaction, or whether they can supplement each other, I used them to describe/explain relevant issues. For the current study, based on applicability, I will use *complementarity* or *modification* categories, to explain the points in the urban space where virtual information strengthens the interaction in urban spaces (e.g. way-finding and coordination were examples of Complementarity points). Throughout the ethnographical walk, participants negotiated the points where the relation between the physical and virtual were complementary.

One of the ways users incorporated virtual data mainly relied upon the map for coordinating. One of the main co-operative points occurred when the participant was trying to find the next SIIP. It was then that she checked the map more frequently and tried to find her location and consequently found her direction. I called this interval or pause in walking a ‘coordination point of virtual with reality’, in which the adjustment between virtual information and physical material information was impossible without shifting between them. It was a distinctive moment, in which the frequency of eye movement was higher than at intervals before and after. Since the participant was encountering difficulties in way-finding, she was trying to reconcile the virtual location provided on her smartphone with the real

¹ Complementarity can result from either the use of one mode that encourages or directly involves the use of another mode (enhancement), or from the use of one mode that makes the use of another mode more efficient. For more information please see: Patricia L. Mokhtarian, Telecommunications and Travel, Committee on Telecommunications and Travel Behavior, California. Accessed at http://webcache.googleusercontent.com/search?q=cache:7MR6AoiovwJ:pubs.its.ucdavis.edu/download_pdf.php%3Fid%3D430+&cd=2&hl=en&ct=clnk&gl=uk&client=firefox-a

physical street surroundings. One of the participants, when she was getting close to a junction where she would have to choose a direction, she was concerned with accurately deciding on her next move. By coordinating the virtual information in the form of a map with street signs, and through several shifts between real and virtual, she was able to find her location and make sense of her physical environment, (see related Figure in methodology section (Fig. 3.7, Fig. 3.9)).

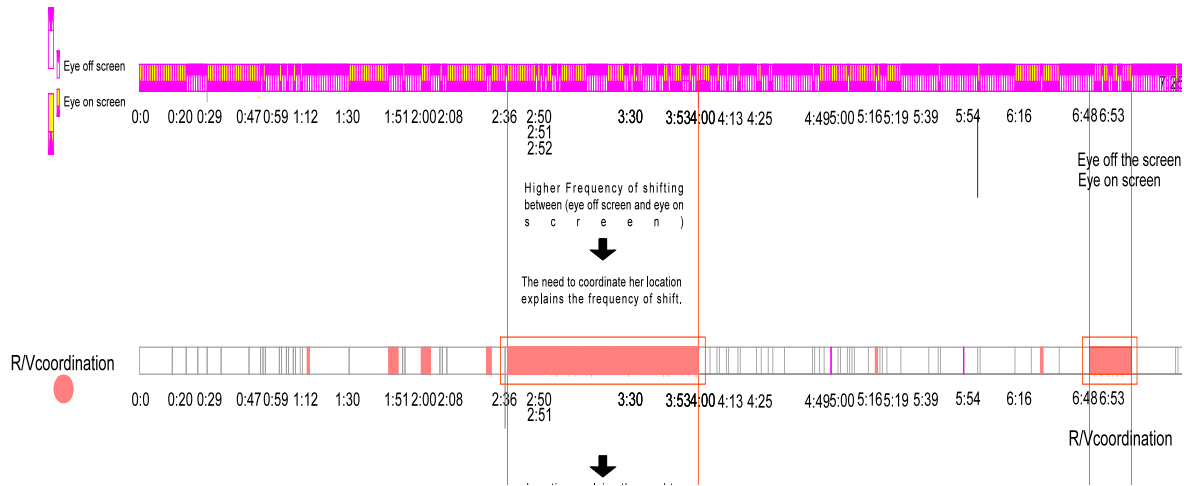


Fig. 3.15 The caption describes another incident of the walk. The Complementarity effect was significant when the user applied the map as the medium to assist her in finding her location and deciding on her next move. As the visualization shows, the frequency of shifting between eye on the screen and eye off the screen was much higher than the intervals before and after.

Generating effect by assigning meaning, memory and associations

The next effect that virtual information had on urban place-experience was those moments when locative media had a generative/complementarity effect by assigning meaning to familiar spaces, where it contributed to appropriating the material environment. In the case of Streetmuseum, this effect of technology was enabled through the strong relation between the contents of images and urban spaces.

This aspect was enabled through relating images (the content of media) to the context that contributed to constructing meaning (generative effect) or enhancing associations of users with the place. In the case of Streetmuseum, the constructive/generative effect is described as: when the content of the images (SIIPs) stimulate any previous memory or strengthen the association of a user with the site or when a participant finds the content relevant to a particular place that s/he previously knew, and now, by being exposed to those new pieces of information, the value of that place was promoted.

For example, once a participant spotted an image of the Hamleys store (the famous giant toy store located on Regent Street) in her phone screen, she became excited to realize that this toy shop, which she knew beforehand, and which had for her specific memories attached, had a much richer history than she had assumed; and she showed her admiration of the building by saying that, “This building is really a vintage shop! [...] [pause], I did not know, I thought it is one of those brands that appears and goes away quick [...]”.

Locative media could become a platform for the acquisition of further relevant information about familiar/personal places; therefore, it can furnish material for personal or collective meaning-making. The relevance of an image with the context in most participants’ cases enriched a sense of emotional attachment to the places of everyday life. For most participants, accessing those interesting and relevant narratives from the past, events and images of their local places was the most fascinating part of the experience.

This association of the contents with the context was the key criterion for providing satisfaction. All participants emphasized that they preferred to see some form of association between images/text and the context. One participant explained: “I prefer images to reference to something in real space, something that you can find or look for. Images should show something, some aspect of presence”.

One participant expressed how “knowing new things about all places that I thought I know, *in this new interactive way, is interesting and much more engaging*”. Another participant—who was a media student—replied to the same question by saying “*This [way of being informed about places] is more creative, more real, [...] easier to figure out, [pause] [that] where you are and what those images are telling you about*”. When I asked how she compared this way of being informed about a site to the conventional way of reading a catalogue/print version, she added that “*I feel like I am walking in a film, [... it is a] totally different experience. Spaces can be imagined differently this way. You walk inside those spaces, it is more theatrical, [...] this way, technology develops [delineates] the stage, [for interaction or experience]*.” (Figs 3.5–3.6)

Technology in this format (locative media applications), by augmenting spaces with visual materials and through incorporating not only visual materials/images, text and images, hyper text,² but also bodies, memory, urban materiality and machines into an assemblage, and by entering right into the context of the everyday, can alter or generate meanings and functions through changing the relations between all the above-mentioned elements. As the participant above addressed, it also integrates with other elements of the assemblage, such as bodies in space, memory, urban materiality, and visual materials, which can create or re-define the experience.

² Hypertext generally refers to the arrangement of information linked together, not necessarily only text (it could also be image, sound recordings, etc) that a user can immediately access through links to other pages or other documents.

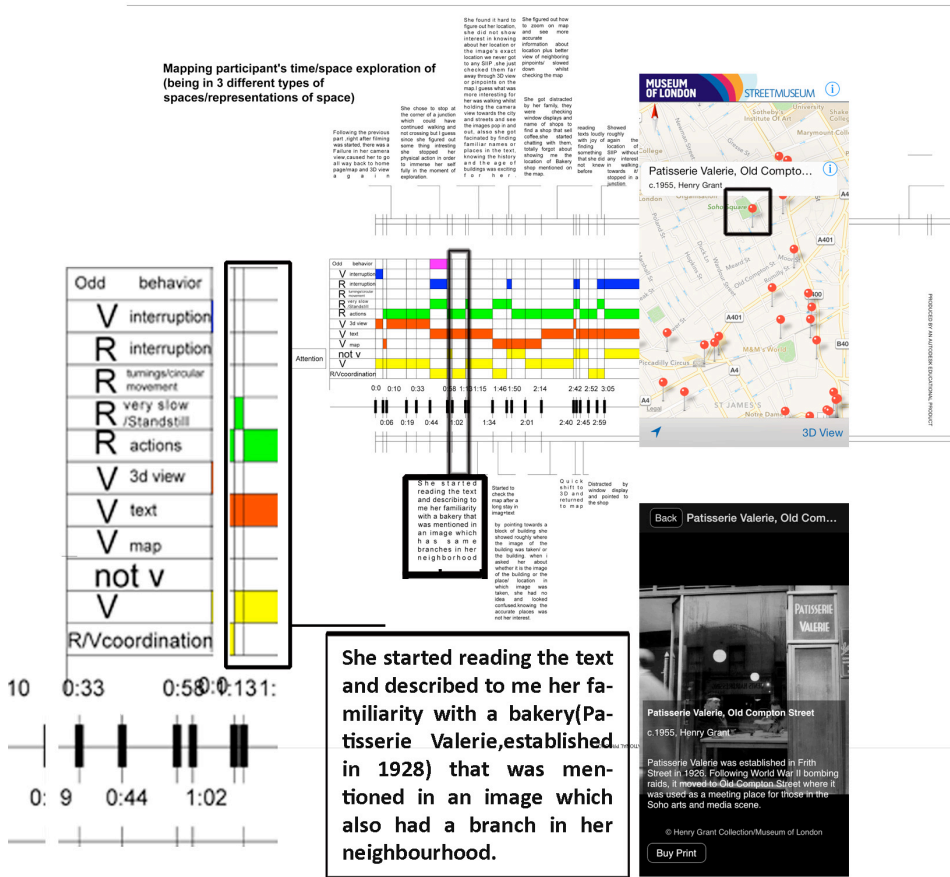


Fig. 3.16 This is an example of the Generating effect of the application where the user associated herself and her memories with the images she found in the application. Personal realization and new information she gained about the history of an architectural building re-valued the importance of a place she already knew.

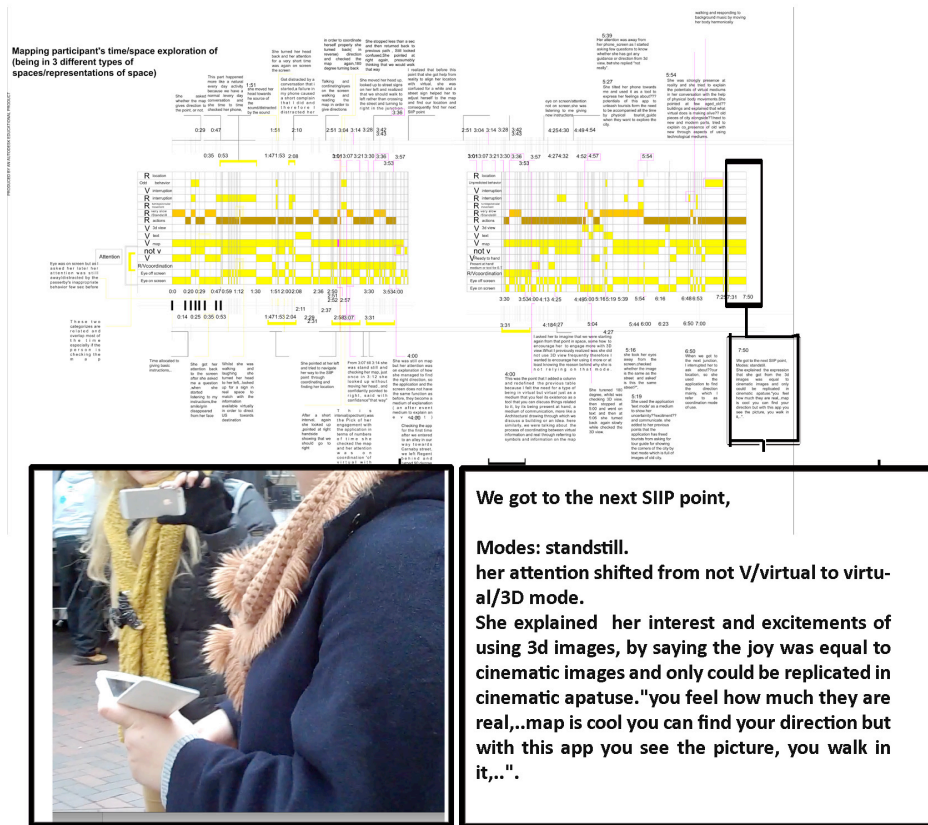


Fig. 3.17 The figure represents another instance of the walk, the location of the interaction, and the behaviour of the user: at this specific point the user described her experience by using an analogy and comparing this form of exposure to images and memories with cinematic experience.

Temporary place-making: Production of spatio-temporal spaces and behaviours

So far I have addressed some observations and findings that discuss the potential impact of locative media on the urban experience of everyday spaces, particularly the effect of increasing the spatial and socio-cultural bond to everyday places. I discussed how this locative media application enhances users’ place-attachments and their relations and associations with their everyday spaces.

Here, I am going to address another aspect, concerning the place-making potentials of media. Through that I discuss how the assemblage of locative media technologies, bodies on the move, and the urban environment, visual material, and representational medium changes conventional urban place-experience into unconventional experiences; a spatiality that is created on the move, and particularly at the SIIPs.

This assemblage creates a particular spatio-temporal practice. Like any other assemblage with sets of relations, the interface points include material and immaterial elements, social and technological elements, hidden and visible properties. The technological aspect of the interface points should be incorporated by social modes of interaction in order to offer new interaction-dependent spaces. As De Silva (2012, 87) explained, the mere existence of interface points does not create new spaces; they are the product of a practice, a social practice with technology.³ New technologies inserted into the urban context are producing new interactions with our environment by providing new contexts for emerging behaviours. These behaviours also resulted from ways of engaging with locative media, and their

³ Silva, Adriana De Souza e, and Jordan Frith. 2012. *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability*. Routledge Chapman & Hall.P.87 Also see Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons.

emergence happens in relation to many other factors (practice of walking, bodies, memory, socio-cultural aspects, visual materials, act of way-finding, material environment, and so on).

Walking is the other significant ingredient of this assemblage. Walking has been discussed by others as a tool or medium to produce spatiality, or as an act of space-production practice that can alter spatiality. This notion that spaces are the product of practices and ways of engagement, and that through our engagements we make sense of spaces, resonates with De Certeau's analysis of the activity of walking and place-making, or what is referred to as 'space practice'. He talks about the practice of walking as a method of actualizing the possibilities of place-making.⁴ In his terms, walkers are practitioners who make sense of spaces that cannot be seen.⁵ And walking is the medium of producing spatiality. Similarly, in the case of augmented reality the experience is perceived when two mediums are integrated: walking and being exposed to media technologies, once a participant engages with media simultaneously with exploring urban spaces. By combining representations of space (to use Lefebvre's well-known terms) with lived spaces, for an urban explorer spaces are produced on the move. All the possible interactions, the new experiences of space, would be actualized only if the participant gets involved in the practice of walking and shifting between representational spaces.⁶

Discussing spatiality produced or altered through interaction, Lefebvre, whilst discussing how spatiality is in dialogue with social interactions, asserted that social relations have a spatial existence (spatiality), and that with each social change there is a parallel spatial transformation of social space.⁷ Thus, it is not difficult to appreciate that by applying media to the sites of everyday life we should expect spatial transformation or change in spatial relations, mainly through changing in social relations and social interactions. Through using *Streetmuseum* in particular and locative media in general, urban spaces can be transformed into interaction-dependant points of space whose quality could not be examined before being practised by a user on the move. (The impact of media technologies to change spatiality will also be discussed further in Chapter 6.)

Addressing the temporary behaviours and spatio-temporal spaces created on the walk, based on the observations of people's patterns of behaviour, several times users showed new physical behaviour or gestural ways of interaction with conventional spaces. Sometimes the participant walked around the SIIP, acting as if there was something physical at that point in space that she would like to explore further.

One participant explained her feeling and the excitement of her experience by walking around the point of interface, responding to what the media offered, by saying "Wow, it is like the photographer was standing right here, right at this point,.. wow it is so cool !! it is like he is here right now, right in this time, and I can see what he was watching from his camera!" Another incident occurred in Tottenham Court Road, where the point of superimposition was right in the middle of the junction. The location of this SIIP called for a different way of engaging with space. Here, the participant held her phone up right in the middle of junction and tried to adjust the image. In a place that we normally pass without even thinking of stopping, because of the locative media application, the user risked stopping for a second and holding her mobile phone to match the image there with the real streetscape, checking to see the textual description pop onto her screen.

⁴ Certeau, Michel De. 2011. *The Practice of Everyday Life*. 3rd Revised edition. University of California Press.p.93. "First, if it is true that a spatial order organizes an ensemble of possibilities (e.g., by a place in which one can move) and interdictions (e.g., by a wall that prevents one from going further), then the walker actualizes some of these possibilities. In that way, he makes them exist as well as emerge. But he also moves them about and he invents others, since the crossing, drifting away, or improvisation of walking privilege, transform, or abandon spatial elements".

⁵ Ibid. p. 93

⁶ This is the case in the experiment with *Streetmuseum*, although some of the ideas could not be generalized for other types of locative media.

⁷ Lefebvre, Henri. 1991. *The Production of Space*. Wiley.p.129, 385.

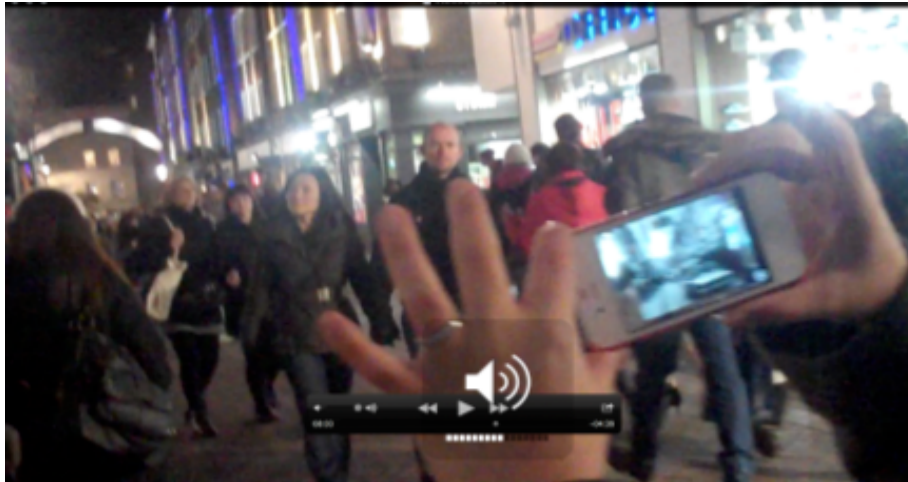


Fig. 3.18. The participant was walking in the opposite direction to the crowd to see how/when images pop up and disappear from her screen. Behaviour such as this only resulted from the temporal act of engaging with the application.

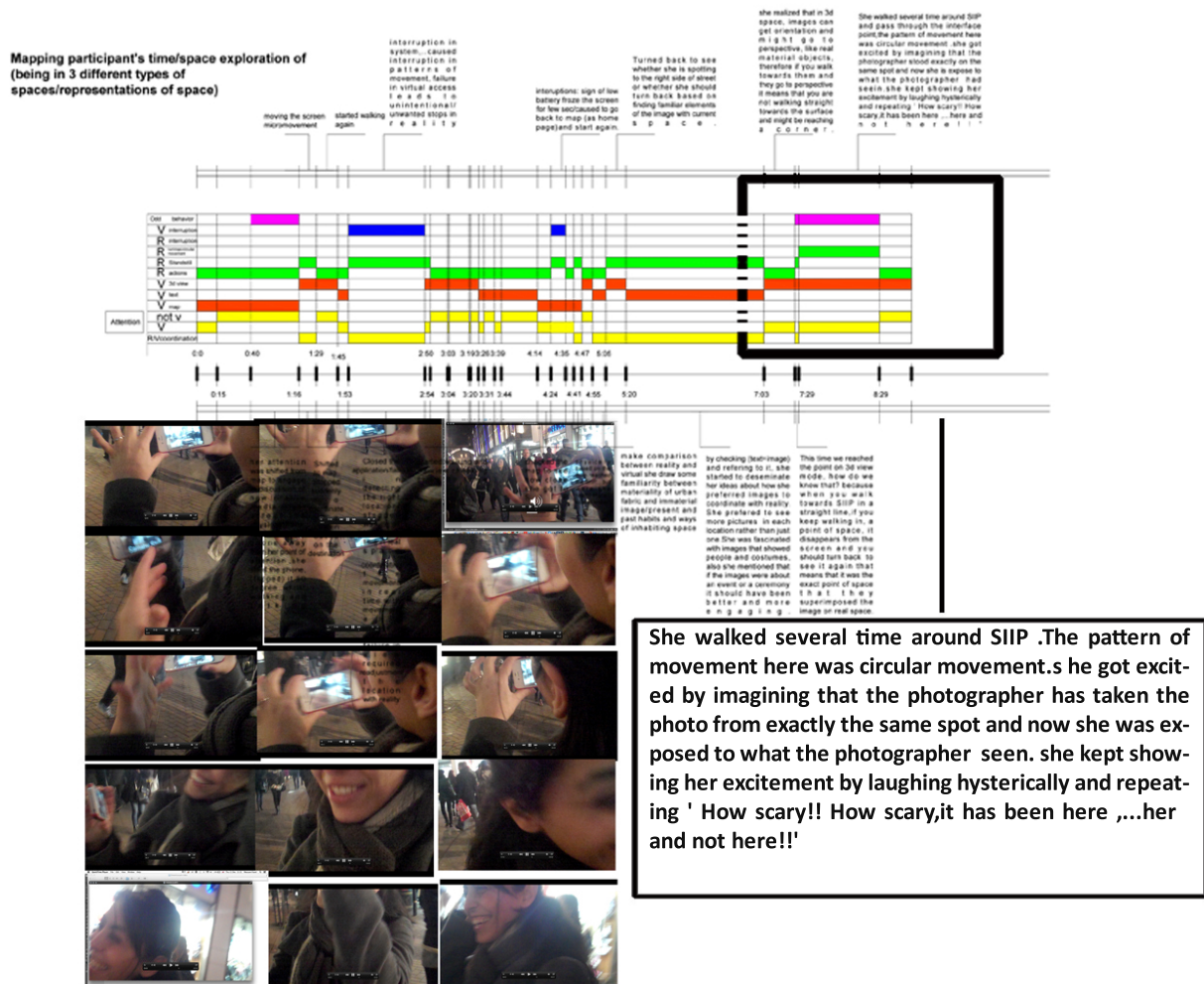


Fig. 3.19 The figure shows the participant's interaction in the urban situation where her attention was mainly on the virtual, such that her awareness of her physical environment was, highly reduced

Spaces of the everyday are able to take on new values because now they can offer temporary ways of engaging with conventional places, but these values or potentials of place-making are the product of

practice, of interacting with locative media. I will discuss these values inserted into place through the next section.

SIIP and borders of mediation

For participants of the walk, and users of *Streetmuseum* more generally, the boundaries of space are no longer only the physical or visual: here, what defines the boundaries of the SIIPs are boundaries of effect, or boundaries of media affordance. There is a different form of border and boundary defined by technological issues (e.g. the one that makes images appear and disappear from the screen based on proximity to those SIIPs). The borders of the SIIP are partly created because of technical issues and the technological accuracy of GPS, and partly are an experiential query.

In this sense, *Streetmuseum* serves as an example of a larger phenomenon in which interface points offered new boundaries and zones for spaces that do not follow the material bordering that we are accustomed to. Choosing *Streetmuseum* helped examine the potentials and affordance of new technologies in transforming the urban context into meeting points with virtual images, which consequently changed the borders of the spaces created. In this relative way of approaching space and its borders, which is mainly constructed because of the experiential aspect of the walk and technological issues, the borders of this space are not defined physically, and these spaces can be understood to stretch visually virtually into one another, based on their being visually accessible on screens from a distance. *Streetmuseum* offers two types of boundaries (Figs 3.14 & 3.15). The first border that is identifiable for the user occurs when images of old London are detectable on the mobile screen: I will call these **visual accessible borders** and they could be said to start when one gets the first glance of the image popping onto the screen. These borders of the SIIPs have a media-interactive fabric and are defined as such according to an affordance distance of the locative media (detecting and showing the images of old London on the screen, these borders can be detected at some distance from the SIIP itself). The visual accessible borders are interactive, stretching outwardly towards the neighbouring points, visually accessible, and visible sometimes from other SIIPs.

A second border is visually detectable through the user's phone when they get much closer to a particular SIIP, and will be referred to as **virtual SIIP borders**. At these closer quarters, the user starts to see the image as an object in space. Like any object, virtual or real, it has boundaries. These virtual images, just like physical objects, have boundaries and borders; one can walk around them like they are objects in reality and see how they disappear from the screen and reappear again from behind (Fig. 3.16).

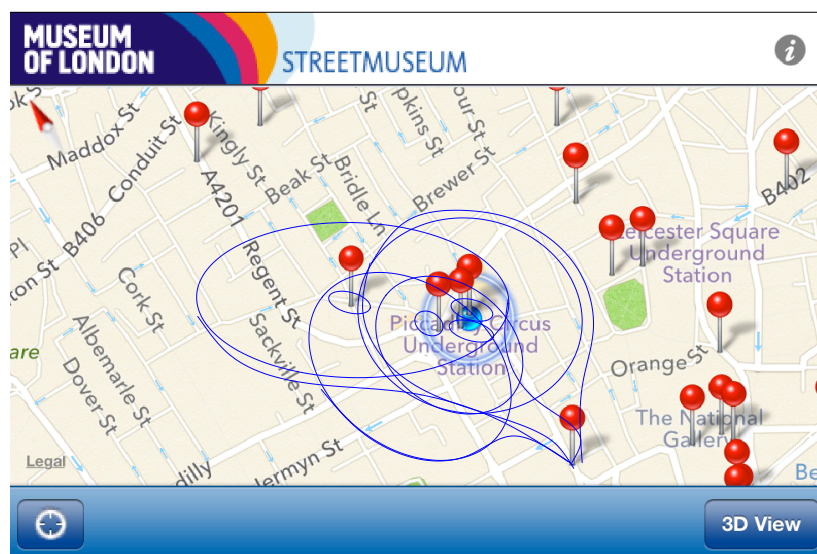


Fig. 3.20 The Figure shows that the borders within which a person can spot images of a SIIP overlap. Here I put conceptual lines around each point to represent roughly overlapping borders of SIIPs where the user can see images simultaneously on her screen. The visual accessible borders start before we reach the SIIP itself, possibly when we are still several blocks away, where images are detectable on our screen via the media app. These borders can be

considered to have a media-interactive fabric, where media is used before, during and after the search for the point of interface between the historical image and the urban setting.



Fig. 3.21 virtual SIIP borders. The image shows the participant walking behind the image.

Streetmuseum provides an interesting example of locative media, providing a set of relations that appear on top of physical-materiality of urban places that interacts with the previous urban context (sometimes enriching the importance of existing points and sometimes reducing the experiential/spatial aspects of those places. I will discuss this issue in next section).

Superimposing *Streetmuseum*'s borders, and its related values, on the existing systems of the city proposes new boundaries within spaces of urban context that conventionally are experienced. These proposed borders do not have material properties and cannot be experienced by a non-user (someone who is not using the application). For users of the application, and throughout the walk, superimposing real spaces with virtual information brings out new points of attention and defines new territories of space. By inserting new points into physical spaces as SIIPs, the application provides new layers of information and new ways of interaction. These particular spaces can be compared to the spatial values they previously had, warranting new attention from users of the applications, which in turn offer new social potentials of engagement.

Re-valuing urban spaces, based on mediated and non-mediated points of space: Re-valuing the space of the walk in regard to being close or far from the SIIPs

What is at stake here is the introduction of another set of values to spaces; values that do not come directly from physical spaces and conventional ways users interact with material space, but rather from an interaction with media. This is not to underestimate other layers engaged in the production of space, and certainly not to ignore the complexity of values definable for each point of space or to ignore the complex set of relations already in play to give value to space. It is only to highlight that media can revalue the pre-existing values of space, and create inequality regarding space-values. Before augmented reality applications became pervasive, the relation between media and space, in regard to the issue of media and its power to re-value spaces, had been discussed by tourist studies, media scholars or urban studies. But as far as I know and based on a literature review, the issue of re-valuing urban spaces through mediating spaces with augmented reality application has not been discussed before. Although Lemos (2010) addressed some relevant issues, his observations were mainly in regard to digital media and they were not particularly addressing augmented reality applications where media in that case is in tangible and direct interaction with urban materiality. He discussed how digital media and layers of code shape inequality, and explained that⁸ the digital layer is in relationship with other 'invisible' layers

⁸ Lemos, Andre. 2010. "Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society" 13 (4): 403–20. P.420.

(such as laws, regulations and subjectivities) which constitute a new sense of space, but this specific layer of media/code still plays a role and mediates to shape “social and geographical inequalities within and between places”.⁹ In the case of *Streetmuseum*, the values that media exert for place-experience are relational and only applicable for those doing the experiential walk.

Temporal spaces of the walk get different values through the frames of mediated/non-mediated spaces, and through this application and the specific exploration of the urban context that it affords. It can be understood that it evolves sets of relations between the point being sought (mediated) and other non-mediated points of the city. Locative media here in some sense can be understood to redefine territories of space, reconfiguring urban spaces and their value around a set of interface points.

If one can overlay a point/location in space with extra information, that point is thereby enriched. The additional value is a consequence of the potential of information delivered into that point or context, and, consequently, as a result of that additional layer, potentially new interaction and dialogue will emerge.¹⁰ In the case of *Streetmuseum*, by layering the context with extra information (here in the form of images and descriptions about the site) SIIPs received extra attention and value compared to other points of the urban area that had no such additional descriptions. Those mediated points, since they are offering a new potential of spaces, invite urban explorers to come and discover them more than when they were non-mediated: now, they attain a new value and new spatial quality.

Addressing the issue of potentials and possibilities of locative media to insert different values and different chances for places to be explored, one participant explained that,

“Before the walk, I did not know anything about Carnaby Street and its history, I did not know that it is an old shopping street. It was only after I walked there to see the images, that I knew about it. [...] It also happened for Hamleys shop, [The toy shop], [...], so yes I thought the image-representation gives value to the present places [those which are reflected in images]”. She preferred to refer to this inserted value as giving identity to places, or revealing the identity. *“If a place has a long history, It has a stronger memory”, [...], “identity for me, is, a matter of being old and having longer history, [...] old-ers are more original”.* For this user, one of the main aspects of the application was its ability to reveal stories and narratives of space, thus strengthening the identities of her everyday places. She further added in another point of the walk that *“It is interesting to see the image of Regent Street is almost the same after even a hundred years”.*

Re-valuing the context based on the introduction of SIIPs as a referencing system means that if non-mediated spaces are close enough and fall within the first border of the SIIP, or inside the affordance zone of the nearest neighbouring SIIP, there is a higher chance that they would be explored during the walk. On these terms, we can say that those non-mediated but proximate points have better chances of being explored or sought. But if a non-mediated point of urban space is not close enough to the borders of any particular SIIP, it has less chance to be seen and therefore relationally it has less value in this system. This lower value means less chances of being explored.

⁹ (Graham, 2005, 564) cited in Flyvbjerg, Bent, Todd Landman, and Sanford Schram. 2012. *Real Social Science: Applied Phronesis*. Cambridge University Press. p.281.

¹⁰ Related studies have been done into the potential of media in delivering information into context, offering that new situations, new meanings and values are emerging. For example, Lemos has shown that through sending, collecting, and processing informational data in an art activity, or through relative locative media performance arts, new social conceptions of space, and consequently new ways of re-appropriation and creation of meanings of a place, is afforded. Lemos, Andre. 2010. “Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society” 13 (4): 403–20. P.420.

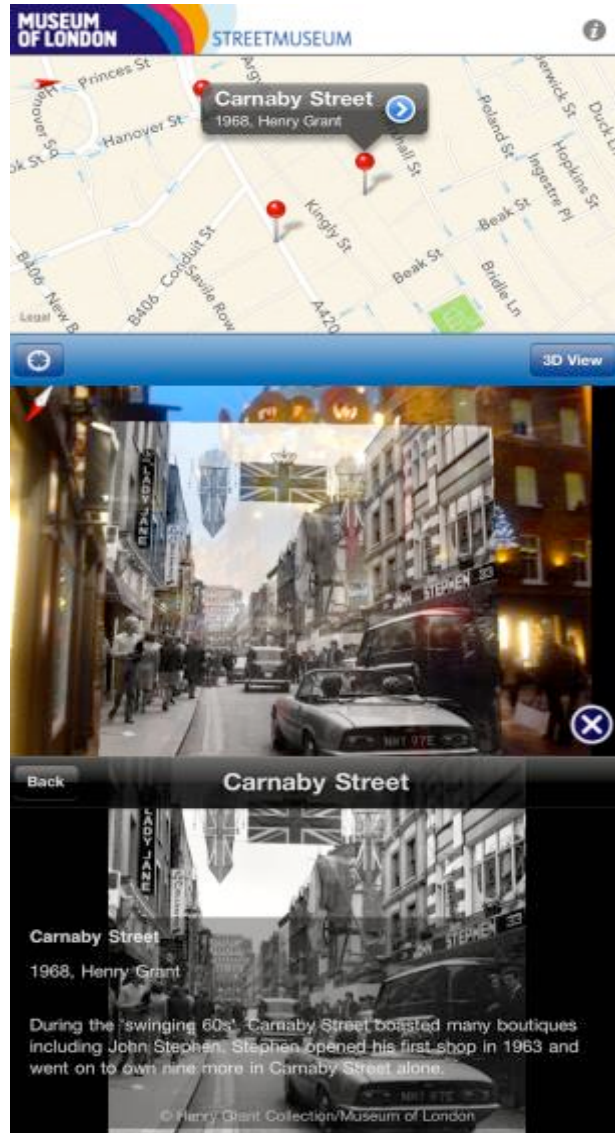


Fig. 3.22 SIIP located at Carnaby Street.

Discussing the value of places throughout the walk in regard to the application and its referencing system, in some areas the number of SIIPs is higher, and the area is densely occupied with them. So in those areas, SIIPs have more neighbouring SIIPs than at others, and therefore each SIIP has a better chance of being seen from other SIIPs. In contrast, some SIIPs have been allocated in parts of the city that do not inspire exploration to the same extent, because they have less SIIPs in their vicinity and therefore, for an urban explorer who explores points only if she spots them on her mobile screen, these areas of lower SIIP density might consequently get less attention.

To summarize the above discussion regarding SIIPs and inserted values:

Because of media affordance, the context of the familiar space of the walk was re-valued in three ways: first, some points of space enjoyed extra attention after being overlapped by virtual information (Being Mediated: being layered by locative media information); secondly, spaces were re-valued based on their referencing to a SIIP (if a space is inside a SIIP zone then relationally it has better affordance and therefore better values, whereas if a space is far from a SIIP it is hard to imagine a user would walk towards it and therefore it becomes harder to track them); thirdly, these new values come from the way they offer new ways of engagement with and new attention to places, through revealing the hidden or untold narratives of space.

Augmented reality proposes different embodiment

The space we inhabit by means of using the locative media application *Streetmuseum* fluctuates between the immediate space that we occupy and the place of our destination (the SIIP) and other possible spaces and narratives revealed by media. This augmented reality application provides possibilities to experience proximity and closeness with physically and historically distant objects and other alternative spaces. In the experience of urban spaces mediated by *Streetmuseum*, we can develop expectations of a destination while we are at the starting point, and we can visually approach things and objects that are not physically accessible or reachable for us. Spaces of destination become available to us in the form of visual material even when we physically cannot reach them. We are practising sending our embodiment, to extend our beings out to a destination, and by experiencing spaces visually (made available for us through technology), we can extend our physical being into neighbouring spaces that our body cannot occupy yet. (More explanation will be provided in the upcoming Section A.)

Farman explains his experience of using *Streetmuseum* and holding his phone towards Buckingham Palace in terms of a different mode of embodiment compared to that of just holding an image of the same thing. He discusses how in the GPS-aware systems, bodies “sense the world as collaboration between material and digital spaces while simultaneously interacting with the cultural inscriptions”,¹¹ emphasizing that in these new types of engagement with technology, the user is situated in collaboration between physical and virtual spaces.

Streetmuseum is an example of technologies that challenge the conventional understandings of body in relation to technology, where it could expand beyond the limitations of materiality through applying the various mediums of technology. Merleau-Ponty famously asserted that our body does not have limits at the body’s surface, but rather it blends into objects that we use in order to locate our self in the world. He discusses the idea through the ways a blind man uses a stick as an extension of his body to extend his being in the world.¹²

Similarly, here, what the medium provides for us is the possibility of extending our being and connecting to objects and distant spaces. Now we can develop an expectation of what to see at the next SIIP—the destination of our quest—through the projection of the destination image into our screen. In another world, because we can expand our beings through objects that we use, and through positioning ourselves in relation both to proximate spaces surrounding us at the same time connecting with distant spaces, our body extends and stretches between here-and-now and there-and-later. We can consider the media interface bringing a sense of nearness, feelings of familiarity with objects positioned at a distance. Media contributes to stretching embodied experience between here and there (somewhere that we have not experienced yet), and as a result it changes the experience of spaces, providing a different, fluctuating experience of being.

Augmented reality is not the first medium that has challenged the ways we interact with the world, nor is it the first medium to free us from conventional fully corporeal experience. Its former media-technologies have for a long time been mediating our interaction and have all challenged embodiment and the bodies’ sensorial limits.

Embodiment is different from corporeality. Embodiment does not necessarily need physical interaction: bodies can experience embodiment through one or two senses.¹³ This way of approaching embodiment as independent of whole-body presence has been investigated in Allucquere Roseanne Stone’s study of phone sex workers.¹⁴ Her important point relevant in our context is the significance she observes of this

¹¹ Farman, Jason. 2012. *The Mobile Interface of Everyday Life: Embodied Space and Locative Media*. Routledge.

¹² In another place he mentioned how a lady with a feather hat keeps a safe distance from surrounding objects without any calculation, in order not to bump into them. She extends her body into attached objects; her being extends beyond the body’s physical limits, out into the world in a proprioceptive way.

¹³ Farman, Jason. 2012. *The Mobile Interface of Everyday Life: Embodied Space and Locative Media*. Routledge.

¹⁴ Farman, Jason. 2012. *The Mobile Interface of Everyday Life: Embodied Space and Locative Media*. Routledge.

medium to develop feelings of presence and embodiment. Embodiment could be disseminated and produced from a distance, without necessarily needing full body presence. In an activity of phone sex: “what was being sent back and forth over the wires was not just information, it was bodies”.¹⁵

Phone sex is an example of how embodiment and bodily interaction could be produced from a distance without participants being physically co-present. In other words, it provides a strong example of the way we construct embodied spaces even when we are not near to each other, or when we are not physically interacting with objects. This example was mentioned by Farman to explain aspects of augmented reality applications. Similarly, in the example of *Streetmuseum*, the same type of experience of spaces was provided for participants. They could experience visually present spaces along with material spaces. By visually connecting spaces that are not physically adjacent, users can experience a form of embodiment that is afforded and offered by technology that to some extent challenges the general approach to embodiment as requiring full body presence. Now without being fully present we can extend our being into technological devices and experience things and spaces that we are not normally able to experience in advance of them being physically present (or of us being physically there).

This way of approaching embodiment without physical presence was articulated in an interview with one of the participants of the walk. Describing the experience of closeness with distant places (either physical distance or distance in time), she mentioned: “we could be here and at the same time there, we can be present at the times of others at spaces of others,[...], We can live in their times even for few seconds... We also can see behind this block of buildings, [...], We can experienced events that are not happening now... gone for ever... woww, it’s amazing!”

Micro-alignment

In a similar way, walking with users and recording their activities also helped to negotiate the social and behavioural norms of using this application in real time and associations between locative media and physical urban context.

Streetmuseum provides an alternative experience of walking in the city. It transforms location into interactive interfaces and users interact with the urban context in a similar way as to a big playground or as a game environment with quests and goals: something that asks for different ways of approaching locations/different orientations and viewings. Most participants, although they were able to read the text before getting to the SIIP from anywhere else only by clicking on the images/map, preferred to get to the exact point of the SIIP and only then read the text; they acted as if they were playing a quest and reaching the SIIPs had an important value.

Most participants had difficulties in aligning their location with urban spaces, at the same time as figuring out their orientation towards the image. Interaction with this application asked for types of behaviours that are not yet adopted in urban life and they still might appear as interruptions to people who co-exist in the same physical space, but who are not using any mediating devices.

It seems that involving locative media as an emerging activity in urban spaces could detach users from their surroundings, even for short intervals of time: they abandon physical activities, only because they are involved with another domain of space. Their awareness of their surroundings reduced to a degree that two of the participants were confused and bumped into passers-by, due to difficulties in adjusting between physical and virtual spaces. But as these technologies enter more and more into the norms of our urban space, we will adopt ways of applying them without causing interruption to normal public activities, similar to the ways we did with previous technologies or devices (e.g., texting or checking maps). We managed and adapted our behaviour to accommodate those technologies, for instance by

¹⁵ This concept was presented in Farman, theory of embodiment. *Configurations* 2.1 (1994) 173-190 Accessed http://www.philosophystudentassociation.com/wp-content/uploads/2011/09/2012_09_26-TextSeminar-Reading_2.pdf

moving to the side of a pavement in order not to interrupt others or not to look odd. We might again adopt ways of dealing and corresponding with both real and mediated spaces simultaneously. One participant, when walking around a particular SIIP, was standing behind the image so the image on the screen was inverted: that's when she knew she was standing 'behind' the image, so she suddenly turned 180 degrees and approached it from the 'other side', without being conscious of people walking around her.



Fig. 3.23 This specific participant got excited when she got to the superimposition point in Carnaby Street. She expressed her joy of standing on the same point as the photographer of the image through words by first by saying “ Ohh,..That’s scary!”, then “ [...],It is like something is here, and not here!],[...], It gives me the sensation of travelling through time, once at this exact point these things [places, people in the photo] were here and now they are all gone![...]”.

Section A.

What was really interesting during the field study of those areas with a high density of SIIPs was how, before physically being in a place, spaces were visually connected and accessible, even if they were not physical accessible, thanks to the projections of images of the destination being virtually presented on the screen of the mobile phone. From point A, user might be able to see an image of point B, C or even D. The *Streetmuseum* application helped in defining another layer of visual coherence, independent of the physical accessibility of these points (sometimes it was impossible to get from point A to B, because accessibility to that point was blocked by either a building or a crowded junction). Spaces were visually stretched into one another, or were visually present in one another through the screens of mediating devices.

The possibility of seeing and knowing not through our eyes, but rather through equipment, is highlighted by Johnson, where he explained, “What we see is no longer given by our eyes but by the instrument”.¹⁶ By using mediating devices, and through the act of mediation, spaces are visually connected. For instance, from Haymarket (one of the SIIPs), participants were able to spot three images of Piccadilly Circus on their mobile screen, but the locations of those points were hidden behind blocks of buildings. Since these images were representations of physical material spaces (most of them were images taken from urban structures), they provided expectations of what participants might encounter if they got to that point. Being visually present on screen offered the sense of visual-coherence between spaces; spaces without barriers, without physically being blocked.

¹⁶ Johnson, 1999:30 cited in Margolis, Eric, and Luc Pauwels. 2011. *The SAGE Handbook of Visual Research Methods*. SAGE.P.531

Implications of image and authenticity of place-experience after new media technologies

Mediatory stage authenticity (representation existing simultaneously with referent/shift in object subject relation)

In the following section, by zooming out from case study to the broader frame of augmented reality, I will cover/discuss another aspect of those media technologies that results from the co-existence of object and image: representation and referent.

Walking in the city while holding a smartphone and engaging with the Streetmuseum application, shifting between the three representational spaces (between 3D, map, and image/text representations of space) actualizes possibilities of place to get new authenticity (uniqueness) that is dependent on new technologies. This authenticity of place and the experience comes from the possibility of co-existence of media (representation) and its object in reality. Augmented reality has the capacity to offer simultaneous existence of representation and the object. Here in this section I introduce different authenticity that is provided by augmented reality applications where the implication of image changes and because of that new *challenges are proposed to the conventional ways of viewing*. By change in implication of image/representation *relative meanings and alternative authenticity are created that are contingent on existence of media technologies*.

The term *staged authenticity* is borrowed from MacCannell,¹⁷ in the context of tourist studies, where he explains the act of prearranging a stage for tourists to have an authentic experience: it is adapted here for the context of *using augmented reality applications*.

Uricchio (2011) addressed the possibility of reconceptualization of the notion of ‘authentic’, where the subject-object relation is in flux, stating, “*the notion of authentic in the age of modernity where subjects and objects encountered one another in a relative peace, should probably be reconceptualized*”.¹⁸ He outlined algorithmic intervention¹⁹ as the cause of reconfiguration of subject-object relations—where alternative modes of viewing are offered from free/unfixed viewpoints (e.g. Photosynth: this specific image synthesizing application provides multiple viewpoints and lets the viewer explore an image by subverting any particular point of view²⁰) to a fixed specific point that depends on the particular positioning of the viewer. Uricchio’s findings regarding the reconceptualization of authenticity caused by algorithm as the language of technology was also evident in my case study of augmented reality: Streetmuseum. In the previous section (*Borders and Boundaries*) I discussed similar findings concerning how augmented reality applications are relying on the correct positioning of a viewer towards the SIIP. Users should walk towards the object in order to get the image to pop onto their phone screens, and with any deviation from that direction, a user will miss the interaction. But once she gets to the exact point, the image acts as an object, and thus offers different forms of viewing. Mediated experience and the authenticity offered by augmented reality applications potentially bring to our attention specific questions regarding object/place, representation, implication of image, alternative ways of seeing and viewings offered by new technologies.

In the introduction to this chapter, I discussed how scholars of media studies and tourist studies have

¹⁷ MacCannell, Dean. 1973. “Staged Authenticity: Arrangements of Social Space in Tourist Settings.” *The American Journal of Sociology* 79 (3): 589–603.

¹⁸ Uricchio, William. 2011. “The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image.” *Visual Studies* 26 (1): 25–35.

¹⁹ He mainly wanted to emphasize algorithmic processes as a formula (mathematically written program) capable of accommodating different values and yielding different results and therefore adaptable for various purposes, which we can find in our iPhones, location-aware cartographic systems, etc.

²⁰ Different from static photos or videos, this 3D image Synthesize mechanism consists of clouds of images, all related to a specific object or place; built up on 600 overlapping images, it allows users to explore details of places, move around, or zoom in in depth.Ibid.

already started examining the potentials of locative media to remediate material environments. Tourist studies have discussed the potentials of media (image) as markers of the site/place, as parts of the image formation process.²¹ Considering visual materials and media to act as markers signifying place has already been mentioned by scholars such as Larsen (2006), and Croy and Wheeler (2007).²² Tourists consume places and communicate with destination points through visual materials produced and consumed in media: those materials act as markers of the site/place. “Markers are: [any sort of visual material or object that] instruct how to see a place, what to see and how to appreciate that tourist attraction”²³. Larsen highlighted that “[...] tourist attractions sometimes come to existence only after the first copy is produced.[...] the sight becomes authentic only when the first copy is produced.”²⁴

Media has long been an important ingredient of the image formation process, and the effects of image and the consumption of visual materials for developing place-attraction have been long discussed. But after the introduction of locative media, scholars have started to examine and bring to attention some other possibilities of media on site. The particular effect that I am discussing is how new media technologies could affect the destination image, not only before visiting a place, but rather at the time of visiting. New media technologies can take part in the production of authentic place-experience through consuming visual materials directly on the site. Those technologies suggest another form of authenticity that is a result of both representation and object/place co-existence. What is suggested here are new implications of image and the possibility of production of place-experience that is authentic, if only representation/image exists simultaneously with reality. This respectively brings to our attention to the possibility of on-site representation as a new authenticity, which calls for different ways of viewing, engagement, site-exploration, and leads to defining a specific yet different “tourist gaze”.²⁵

Here, I will discuss why, when designing a tourist experience or architectural experience, the co-existence of *representation*, the image of the object with all its related materials—stories/narratives, collective memories, and so on—and the *object/place*, is significant in terms of creating an authentic, and moreover a memorable, experience.

Sometimes location/object can give the representation (image) its significance and authenticity; and sometimes, as Culler (1990) notes,²⁶ the existence of these images as representations of real space is what makes the original building authentic; the original to which these images, and the pop-up texts, refer. To clarify, he compares an image of the Eiffel Tower taken from afar, but which still conveys the impression of the Eiffel Tower, with a real close-up of its beams. The first one taken from a perspective that shows a “miniature version of the Eiffel Tower still maintains the legibility of its link to the real thing—the image carries with it a more constrained sense of declaration—whereas extreme close-up of the tower’s beams would not necessarily convey the meaning ‘Eiffel Tower’; “it could only do this by relying exclusively on discursive claims.”²⁷ This highlights the importance of viewpoints in reclaiming

²¹ Larsen, Jonas. 2006. “Geographies of Tourism Photography: Choreographies and Performances.” In *Geographies of Communication: The Spatial Turn in Media Studies.*, edited by Jesper Falkheimer and André Jansson, 243–61. Göteborg:Nordicom.Croy, W. G. and F. Wheeler.2007. [Image Formation: A Research Case](#). In Hall, C. M.. *Introduction to Tourism in Australia: Development, Issues and Change*. Fifth edition. Frenchs Forest: Pearson Education Australia. 1-11 online.

²² Croy, W. G. and F. Wheeler.2007 [Image Formation: A Research Case](#). In Hall, C. M.. *Introduction to Tourism in Australia: Development, Issues and Change*. Fifth edition. Frenchs Forest: Pearson Education Australia. 1-11 online.

²³ Larsen, Jonas. 2006. “Geographies of Tourism Photography: Choreographies and Performances.” In *Geographies of Communication: The Spatial Turn in Media Studies.*, edited by Jesper Falkheimer and André Jansson, 243–61. Göteborg:Nordicom.

²⁴ *Ibid.*

²⁴ *Ibid.*

²⁵ Larsen, Jonas cited (MacCannell, 1999, 115), where he develops the relation between markers and tourist gaze. Cited in: Larsen, Jonas. 2006. “Geographies of Tourism Photography: Choreographies and Performances.” In *Geographies of Communication: The Spatial Turn in Media Studies.*, edited by Jesper Falkheimer and André Jansson, 246. Göteborg:Nordicom.

²⁶ Cited in Uricchio, William. 2011. “The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image.” *Visual Studies* 26 (1): 29.

²⁷ *Ibid.*

the attached memories and predefined meaning that is constructed around an image as a representation.

To understand it better in a slightly different example of architectural photos, we probably have all come across architectural photos or representations of a building that construct (propose) authenticity that cannot be reclaimed by the object or building itself if we later visit its site. And it is not only because presentation has different medium specificity (proposed values, patterns of engaging, modes of presenting information, capabilities of making meaning regardless of association with objects, which therefore constructs different indexical meaning); it also address this issue that sometimes authenticity is constrained by viewers' ability to recognize and make visual co-relation between representation and the referent.

In the example of architectural representation, the user's previous knowledge—socio-culturally attached memories—about a particular building in part determines her expectation. Therefore, there is a constant desire to fulfil these expectations on the site. And if this desire is not fulfilled, the building therefore does not convey values proposed by the image and attached memories. This reminds us that a subject's viewpoints, orientations and positioning towards object are important but could be manipulated by the power of media. New strategies or new ways of seeing provided by media also become important as tactics comprise a particular package of seeing and being in the world. As an augmented reality application, Streetmuseum, while defining certain points of view, superimposes the representation on real objects of urban streets. Thus, the media forms an "Authentic staging" for both object and referent, to exist simultaneously and offer an authentic experience.

Mediated Authenticity offered by locative medias potentially embeds prospects of meaning-making by simultaneously displaying the referent object at the same time as their representation. This is because image (Representation, Simulacra) sometimes has stronger influence in meaning-making compared to the object itself.

The concept of 'mediatory authenticity' is drawn from post-modern approaches to authenticity, which pay equal attention to simulacra, the reproduction of reality which fulfils the desire for the real and replica to co-exist. Thus, we can say what augmented reality explicitly does is to offer authentic experience for users (subjects), which might or might not originate from an authentic site/object, but rather by providing a stage for representation to exist with its original object, presents a unique experience constructed from a fusion between self (subject) and object, that also relies on elements of orientation, viewing, etc. What I note here is that this different authenticity resulted from the implications of images in their new format of *augmenting the real*, and that this puts the accepted object-subject relation into question (or at least opens up space for renegotiation of those relations). In this new format provided by media technology, viewing directions and orientations towards the augmented image are becoming new aspects involved in the production of authentic place-experiences.

Here the authenticity proposed by locative media comes as a package, comprising conventional dichotomies of subject/object relation²⁸ that are evolved into more complex issues comprising other

²⁸ Authenticity of a site is not entirely contingent on objective quality. It does not only come from the physical material object (which is commonly referred to as object-oriented authenticity where it mainly focuses on characters of an object, artefact or place); authenticity could also be derived from subjective experiences that include personal encountering of the site, the direction and orientation that a person might take towards the object, etc. The authenticity of a building also relates to its aura: that means it relates to all the stories and narratives formed/generated around an object: all the unique stories that an object holds. Aura also relates to 'the object quality of being part of a context'. Aura was famously theorized by Walter Benjamin. In his early writings, every landscape and object had an aura, but in his later text in *The Work of Art in the Age of Mechanical Reproduction* he used aura to discuss some aspects of the act of reproduction, where, the act of reproduction or copy would take the aura and uniqueness from the object, and it does so by changing its context and taking it out of its original context. This concept has been applied to architecture, media, tourist studies, etc.

The issues of authenticity and the concept of aura recently again gained attention through readings of traditional theories developed by Benjamin, in contrast with contemporary media practices. These studies seek to explore issues regarding potentials of media to reactivate perception, memory, imagination and thus auratic experience. David Bolter et al applied

elements such as: alternative viewpoints, orientations or directions towards images or the site, etc. But it still comprises all the traditional issues of rituals, materials (objects and their representation as images, postcards, souvenirs, photos), traditions and object uniqueness or 'Aura'.²⁹

Augmented reality applications, similar to some other media technologies, challenge the conventional ways of experience, imagination, embodiment and interactions. Philosopher Walter Benjamin, in his study of mechanical reproduction, claimed that film, because of the editing techniques and possibility of montage, and due to the changes it offers to our viewpoint where the viewer explores and reflects upon the world seen through the lens of the camera, has changed our collective sense of perception.³⁰ He discussed how film can offer the creating of a different immediacy-imaginary experience; by saying, in fact, film editing/montage as mechanical reproduction does not simply affect the viewer's response to art. Rather, it has changed our collective sense of perception.³¹ In a similar analogy, in the case of augmented reality technologies, those media, by changing and defining more specific viewpoints, change the nature of interaction, where bodies can experience a shifting between the object and the image; shifting frequently between different forms of representations; between here and there; thus causing a new form of perception to be generated. Experiencing space with these new media technologies is similar to one of those moments of mechanical reproduction when the conventional ways in which we have understood and perceived our surrounding is challenged. Our experience of urban space, therefore, is becoming more a fluctuating act, where embodied experience could swing between authenticity of the object to the authenticity of experience evoked by media. Thus we can say media technologies have the capacity to evoke a different authenticity and offer a different auratic experience.

New media applications have opened up new opportunities for mediated spaces and mediated interactions within physical material spaces.³² They are providing new perspectives on the way humans experience the world around them. These mediated practices are working as transcending technologies that change our understanding of space and time. Geographer Kellerman (2006) refers to such technologies (he cites the automobile, telephone, internet, and mobile communication devices) as space-transcending technologies that provide new perspectives on the world by means of altering our knowledge of the world around us, helping us overcome our physical limitations. He argues that such technologies "reorganize time as a means to overcome space ... [and] space is reorganized by the time it takes to move from one place to another".³³ Information provided by locative media or ubiquitous technologies often helps in supplementing the abilities of human perception. Similar to the microscope, telescope, trains or telecommunications, locative media enables us to see and experience things that were previously invisible and inaccessible to us. Schmidt et al (2011) discuss how new technologies are

Benjamin's ideas into the context of new media, and discussed how different forms of media seem to differ in their capacity to evoke aura, where some create a more unique quality of experience where the user feels distanced from the object. Benjamin refers to this quality of distancing as one of the effects and qualities of aura. For more information see: Bolter, Jay David, Blair MacIntyre, Maribeth Gandy, and Petra Schweitzer. 2006. "New Media and the Permanent Crisis of Aura." *Convergence: The International Journal of Research into New Media Technologies* 12 (1): 21–39. Similarly see (Benjamin, 2008, p. 23) : where he discusses "Aura as unique value of authentic, is an experience, an engagement, defined as a "strange tissue of space and time: the unique apparition of a distance, however near it may be". See also Henson's critical reading of Benjamin's concept of Aura available at: http://criticalinquiry.uchicago.edu/uploads/pdf/Hansen_Benjamin's_Aura.pdf

²⁹ Bolter, Jay David, Blair MacIntyre, Maribeth Gandy, and Petra Schweitzer. 2006. "New Media and the Permanent Crisis of Aura." *Convergence: The International Journal of Research into New Media Technologies* 12 (1): 21–39.

³⁰ Ibid.25.

³¹ Ibid.

³² Jason Farman, 2012, *Mobile Interface Theory: Embodied Space and Locative Media*, New York: Routledge. Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press. Dourish, Paul. 2006. "Re-Space-Ing Place: 'Place' and 'Space' Ten Years on." In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work*, 299–308. CSCW '06. New York, NY, USA: ACM. Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons. De Souza e Silva, Adriana, and Jordan Frith. 2010. "Locative Mobile Social Networks: Mapping Communication and Location in Urban Spaces" *5* (4): 485–505.

³³ Kellerman, Aharon. 2006. *Personal Mobilities*. Routledge.p.72.

providing insights about our perceived experience, and suggest that by the middle of this century, the boundaries between direct and remote perception will become blurred.³⁴

Benjamin, in his later writing, suggested a more complex and relational understanding of authenticity as bound to traditions and rituals; Rickly-Boyd (2012), reading from Walter Benjamin, addressed the association of this concept with concepts connected to aura, traditions and rituals;³⁵ stating that it is highly dynamic, performative and communicative, “The authenticity of a thing is the quintessence of all that is transmissible in it from its origins on, ranging from its physical duration to the historical testimony relating to it”.³⁶ Images available as part of on-site experience are sites of repositories of collective memory, rituals and history, where they can also be considered as objects to trigger historical testimony, developing relations and providing authentic experience. In regard to the significance of images as markers, or objects triggering authenticity, Culler has grounded authenticity based on stereotypical images, expectations and cultural preferences (Culler 1981; Silver 1993).³⁷ He noted that by surrounding ourselves with rituals (images, postcards, souvenirs) we represent to ourselves the possibility of authentic experience in other times and in other places.³⁸ He explains authenticity as created by collapsing time, temporalities, overlaying a site or object in the present with reference to its provenance or past. This is exactly where images and collective memories shared in locative media can affect the experience of a site, through developing and constructing new aura for the building/site.

To sum up, the authenticity of an experience does not come just from real objects or a building or place; nor does it necessarily come from the representation. It happens at the stage created for both to exist simultaneously—created through the assemblage of both image as a reproduction and object of reality, and made accessible through the medium of mobile-screen, accessible for the subject from particular positions and orientations.

I discussed how incorporating media into this equation offers a different form of authenticity: here, the type of authenticity that is offered for an urban explorer challenges the conventional free viewing of an object. Now, it is reliant on the correct positioning of the viewer in relation to the object and its representation. As William Uricchio states, through the lenses of augmented reality applications, there is no such thing as an innocent gaze: “the act of gazing and the views consequently seen are transformed into a process of signification as images are laden with particular meanings”.³⁹

Conclusion

By placing the interface of information with place at a local level and relating it directly to location and bodily-corporeal experience, such visual and symbolic materials, for a user, exceed only being representations of physical places, and rather become part of experience, constructing a strong dependence between place-experience and virtual information. Based on the findings of this case study, I can say that place-experience, after accommodating new media technologies, is considered to benefit from media-interactive fabric where virtual material contributes to creating/altering the stage, borders and situation of urban place-experiences. In this chapter, I discussed how locative media can produce new interface-dependant spaces. Addressing this specific case, due to technological issues and due to interface designs, locative media produces new boundaries for conventional spaces. Through negotiating the potentials of these media technologies, I developed the concept of ‘place-making

³⁴ Schmidt, A., Langeheirich, M., Kersting, K., 2011. ‘Perception Beyond Here and Now.’ *Computer* 44(3), 86-90.p.87.

³⁵ Rickly-Boyd, Jillian M. 2012. “Authenticity & Aura: A Benjaminian Approach to Tourism.” *Annals of Tourism Research* 39 (1): 269–89.

³⁶ Cited in: Rickly-Boyd, Jillian M. 2012. “Authenticity & Aura: A Benjaminian Approach to Tourism.” *Annals of Tourism Research* 39 (1): 270

³⁷ Cited in: Uricchio, William. 2011. “The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image.” *Visual Studies* 26 (1): 25–35.

³⁸ Ibid.

³⁹ Cited in: Uricchio, William. 2011. “The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image.” *Visual Studies* 26 (1): 32.

potentials of locative media' to emphasize the dependency of place and on-site media. I also showed that through the usage of media in an urban context, borders and values of familiar places have been redefined according to the practice of interface-dependent place production, or in other words, through the potentials of the interface offering different types of place-making.

That also means that in terms of media, by defining a reference system (offered by SIIPs), urban spaces were divided into mediated and non-mediated. Thus the conventional spaces of the walk were respectively re-valued. And lastly, by introducing new focal points of attention, the experience of familiar spaces were transformed into media-dependent experience, suggesting that our knowledge of places might be reframed into an entity dependant on interaction with media. The new referencing system proposed by this media exerts its own temporary system of engaging within the urban context, a system which has its own borders and values. It does not simply follow previous social or material hierarchies of space, and offers new ways of engaging and interacting with space.

Since new technologies offer location-dependent interactions with a site, they provide informative layers that unfold relative to local place, and coordinate with the activities undertaken in that specific location. Bringing content to the context at the same time as encountering the physical materiality of the context (mobility or walking practice) helps to overcome the conventional detachment of information from the context of an activity, and arguably enhances the quality of experience by providing relations between information and context, particularly by providing a location-specific interface between virtual information and the activity within the real time of encountering.

Investigating the application in a form of experimental walk helped to illustrate how city context would be understood differently based on the practice of walking and checking. *Streetmuseum* created virtual meeting points with reality, redefining the urban context into something like a playground in which spaces are experienced not just as a background for the interaction with media, but rather defined dependent on the interaction with media.

Changes to, and the transformation of, the setting are brought about due to the mobile participant, and the ways in which information is enfolded into the time of encountering. In the case of *Streetmuseum*, the application integrated three types of navigation into one system. By bringing these three representations of space into lived experience, not just as parallel mediums to lived experience, but rather as a medium integrated into everyday sensory experience of places, this application creates another type of experience that is not possible without the collaboration between those representations and lived experience.

Offering a different phenomenological experience, the augmented reality application of *Streetmuseum* transforms the sensory experience of central London, the way we communicate with our surroundings and the ways in which we accumulate knowledge. This occurs by manipulating the visual-sensory experience and switching from pure optical vision into an augmented medium (by synchronically providing a new visual frame—the mobile phone screen— for seeing the world); secondly, by being in a representation of space simultaneous with space itself (3D mode and GPS map⁴⁰); and thirdly by delivering content into the context at the time of encountering the materiality of space. Here, representation becomes part of the sensory experience of place, and by that I mean that locative media, by defining new frames to explore familiar spaces, allows the user to perceive space differently. Since the urban explorer experiences the city through the lens of location-based applications—which encompass screen-based images and texts—that specific lens enables urban explorers to shift from pure optical vision into an augmented medium.

Because new locative media technologies can locate the user's location in an abstract representative map in which the user can trace her own movement, it provides a unique type of representation in which

⁴⁰ Maps providing us with a real-time tracking of our movement, an overall view

the user can situate herself directly in the representation of space. Traversing the space while holding media devices, while simultaneously being represented on an interactive map, shows that the distinction between material space and its representation is blurred, and the representation of space and space of representation are not exclusively separated. Streetmuseum, by connecting the medium of representation with physical site, similar to other augmented reality applications, changes the experience through setting up a different explorative visual frame for the eyes of the explorer. Streetmuseum foundationally changes the way an urban explorer experiences the world by putting a filter right in front of their eyes at the point of exploring.

Augmented reality applications also provide different mediated experiences that result from a collaboration of many elements in a form of an assemblage: including moving bodies in the material world, media technologies with various potentials (to actualize other possibilities of space), and (lastly) built environment. Those assemblages of elements directly or indirectly affect mediated experience, sometimes by putting constraints on experience (e.g. defining particular ways of viewing our surroundings), or other times positively by offering possibilities to overcome limitations of embodiment. It also results in the emergence of different forms of social meaning production, which have been discussed by Hansen. He believes that locative media or other forms of locative art allow a different way of perceiving context by adding to the overall phenomenological experience of the site, and thus acting as tools to re-appropriate meanings or create new meanings of the place.⁴¹

From a slightly different frame, negotiating the potentials of media in providing a stage for representation to exist simultaneously with the object of reference, I approached the reconceptualization of authenticity proposed by new media that challenge the conventional ways of viewing and have the potentials/challenges of creating relative meanings by simultaneously displaying the object of referent and their representation. I discussed the incorporation of media in the process of meaning-making for an urban explorer, which offers a different form of authenticity. Here, this authenticity is reliant on the correct positioning of the viewer in relation to the object and its representation. Authenticity of an experience does not come just from the real object or site of the building, nor does it necessarily come from the representation. It happens at the stage created for both to exist simultaneously, accessible through the medium of mobile screen, and accessible for subjects from particular positions and orientations.

Findings for architects and designers

The integration of the *soft space of data* and the *hard space of architecture*⁴² offers a different spatiality that might sound unfamiliar to conventional architects who are only concerned with the materiality of architecture, and thus undermine the potentials of media/immaterial aspects of architecture to provide different spatiality. However, locative media is finding a significant place among architects who do not alienate themselves from consideration or testing of the potentials of this technology either as a tool/medium (e.g. to communicate with users, develop awareness, make connections to city, and so on) or as a strong medium/ingredient of assemblage that could provide or design new forms of place-experience. It seems that with the arrival of this new technology and its consequent opportunities, we are at the stage where, as architects, we should start to think more seriously of the implications and applications of those media. Different forms of developments in sensors, augmented reality applications, GPS tracking systems, annotation mediums, and many other forms of codes and data, all have effects on the built environment and cities in wider frames, and thus things are in a state that we have never experienced before. We have to think about the opportunities it provides more vigorously: “if we do not think critically now about the technologies we put in place for the next centuries of cities,

⁴¹ Hansen, M. (2006). All reality is mixed reality. In M. Hansen. *Bodies in Code: Interfaces with Digital Media* (pp. 1_5). New York: Routledge. Hansen, 2006, p. 5

⁴² Lorenzo-Eiroa, Pablo, and Aaron Sprecher, eds. 2013. *Architecture in Formation: On the Nature of Information in Digital Architecture*. 1 edition. New York: Routledge.

we can only look forward to all the unpleasant surprises they hold in store for us”.⁴³ Therefore it is important to think and design for the impacts and the ways these newly introduced media can be integrated into architectural experience, not as a tool for accumulating data, but rather as a platform to generate different spatiality and place-experience.

⁴³ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.

CHAPTER FOUR: IMAGE OF PLACE (CASE STUDY OF FOURSQUARE)

In the previous chapter (case study of Streetmuseum), I discussed how applying representational medium possibly could strengthen the association of users with place. And as the nature of that application suggested, the relation between virtual/symbolic materials and the materiality of urban space was tangible and direct. In contrast, in the case of Foursquare, the relation between representational medium and urban space is not direct; thus, the effect of the virtual medium passes through some intermediary effects, and through those channels or mediums, virtual information interacts with the materiality of the physical.

In what follows, as mentioned in the Introduction, the discourses and findings related to the current case will be developed in two co-related chapters in order to provide two distinct insights (first I argue that locative media are becoming the site/occasion for developing Image of Place and then in the chapter 5, I explore the possibilities/consequences of social media entering right into the experience of place). Although there are still overlapping issues, each theme explains a significant aspect of this case.

Abstract

Here, in the first part, I will focus on the potentials of locative media mainly in terms of making sense of the urban environment (that is referred to as environmental-knowing⁴⁴), where locative media enables people to appropriate social interactions, and increases the functionality and legibility of places/spaces. First through the notion of image of place, I will investigate the influences of representational medium (e.g. applications as platforms) on the process of image formation where I will also investigate if new media technologies have become a site of production/alteration, storage and consumption of image/identity of place. The orientation of this chapter is towards discussing how new media technologies are becoming a significant mechanism framing the way people develop a sense as well as expectations towards places mainly by developing an image/identity of place, constructed from bits of information (Narbs: shared communally within virtual mediums). I will also discuss how locative media (and its representational medium) is becoming an influential factor in forming an image or identity of places that is detached from, yet in connection with, the physical realm. Image of place as a concept here is developed within the framework of Lefebvre's ideas of representation of space and spaces of representation, and Husserl's inter-subjectivity. By emphasizing the representational aspects of the medium and materializing the concept of image of place, I discuss through the case study of Foursquare how relocating local knowledge in the virtual—or what Gordon⁴⁵ refers to as net locality—locative media changes the attitude and methods that people initially use to get information about places, which thus impact on their expectations/values of places, and possibly affects their physical movement based on those expectations and imaginations of places. In other words, the image constructed in the medium becomes part of the process of decision-making, affecting movement in/within places. Here, I argue that by developing an expectation towards places, this image becomes a driving force in the communication between local knowledge emplaced in the virtual and moving in/between physical places.

Introduction

Several scholars from diverse disciplines such as urban and cultural studies, media studies and human geography have investigated the connection between image and place. Communication geographers Falkheimer and Jansson (2006), while discussing the diversity of mediums involved in the construction of destination image, addressed the neglect in studying the potentials of new media practices.⁴⁶ In this context, I bring into focus the effects of locative media as the site for construction and formation of image of place. Here I discuss the possibility of locative media and, specifically, the power of the image constructed within newly introduced mediums, for becoming a cause of action in the physical place, and the possibility of media to encourage users, to potentially make decisions and move in the physical world, enables people to appropriate social interactions and facilitates the process of making sense of the urban environment by increasing the functionality and legibility of places.

This chapter is divided into four parts. The first part discusses the background of the notion of image of place, from related disciplinary perspectives highlighting the growing relation of image of place and representational mediums. The second part explains the theoretical framework, developed through the discussions of spaces of representation and inter-subjective place-experiences. Within the theoretical framework, built upon the works of Husserl and Lefebvre, *inter-subjectivity* and *spaces of*

⁴⁴ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

⁴⁵ Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons.

⁴⁶ Falkheimer J and Jansson A (eds) (2006) *Geographies of Communication: The Spatial Turn in Media Studies*. Gothenburg: Nordicom.

representation and *representational spaces*⁴⁷ play a vital role in developing and defining the notion of image of place. The third part presents the case study of Foursquare, a locative media application, as a model in which the two notions of place and representation are intertwined and connected. And the final part discusses the analysis based on the described theoretical framework. The findings of this study support the notion that the representational medium plays a unique role in the formation of specific image of each place.

Background

Before the widespread emergence of new media technologies, urban scholars and ethnographers had already extensively discussed the notion of image of place, in the context of cities. Image of place has been defined by Boulding⁴⁸ as a mental picture that is a “product of attitude, experience, memories and immediate sensation”. Lynch (1960) notably discussed image of place as “the product of immediate sensation and past memory, used to interpret information and to guide actions”.⁴⁹ He also discussed the readability of city as a discourse that examines the relation between the city’s elements and a user’s mental image for navigation and way-finding, which is a settled discourse, further examined by urban planners such as Gould and White (1986) and Pocock and Hudson (1978).⁵⁰ After the digital development, Kobayashi and Fattahi re-examined Lynch’s concepts in terms of the possibility and the effects of new digital actors (e.g. linkmarks replacing the role of landmarks) on city imaging.⁵¹

Human geographer Relph was arguably the first scholar to relate image of place to representation, mass media and communication. He pointed out that most of the time image of place corresponds to communally constructed identity of place, where identity varies with the individual, group, or community.⁵² In this way, Relph asserted the inter-relatedness of identity of place and communal expression, beliefs and values. Similar ideas have echoed within the works of communication geographers Falkheimer & Jansson (2006), discussing how within the symbolic and imaginative production of space, the transmissive, ritual, material and symbolic aspects of communication are all intertwined.⁵³ As communication theorist Carey (2008) explained, “reality is not given, [...] reality is brought into existence, is produced, by communication, in short, the construction, apprehension, and utilization of symbolic forms.”⁵⁴

In the era of mass media, when television dominated as the most influential medium, geographer Adams (2009) discussed place-image as something we carry as a result of both the possibility of direct experience (such as the direct encountering of a place, like the places a tourist visits), and mediated experience (like TV programmes). He argues that media technologies could translate generic images into particular, particular into generic, and generic images into actions, encouraging people to take actions and visit places. Adams argues that “the distinction between place and place-representation is blurry at best”; similarly, he argues “the mountain in a film or television programme can become a part of your mountain experience, and hence part of your life worlds”.⁵⁵ He further states that “we might in

⁴⁷ Lefebvre, Henri. 1991. *The Production of Space*. Wiley.

⁴⁸ Relph, E. C. 1976. *Place and Placelessness*. Pion Limited, p. 56

⁴⁹ Lynch, 1960, *The Image of the City*. MIT Press, p.5.

⁵⁰ Pocock, Douglas, and Ray Hudson. 2014. *Images of the Urban Environment*. London: Macmillan. Plurabelle Books Ltd.

⁵¹ Linkmarks are referenced to oneself and relative to one’s destination and necessities in real-time. “We believe they can improve not only the “sense of time” but also the “sense of place”, cited in Hidetsugu Kobayashi and Keyvan Fattahi 2009, *City Imaging after Kevin Lynch*. accessed at <http://dl.acm.org/citation.cfm?id=1579327>.

⁵² Relph, E. C. 1976. *Place and Placelessness*. Pion Limited.

⁵³ Falkheimer J and Jansson A (eds) (2006) *Geographies of Communication: The Spatial Turn in Media Studies*. Gothenburg: Nordicom.

⁵⁴ Cited in Adam, Carey, James W. 2008. *Communication as Culture, Revised Edition: Essays on Media and Society*. Routledge, , Page xiv.

⁵⁵ Adams, Paul C. 2009. *Geographies of Media and Communication: A Critical Introduction*. Chichester, U.K.; Malden, MA: Wiley-Blackwell, P.152.

keeping with the mediated, heterogeneous understanding of individual experience, at least be convinced that image is powerful, efficacious, and possessing a force capable of altering the modalities of one's experience, and thus one's reality. [...], Place images are caught up in an endless cycles of representation"⁵⁶ and action, internalized and externalized, generalized and particularized. Adams also points out that geographers' engagement with place-image has evolved from focusing on the relation of image and meaning, towards looking into text/image⁵⁷ as agents leading to actions. Instead of looking into text/image and meaning production, he suggested looking into text but also outwards to the context where images become part of daily practices and performances.

Even before locative media, scholars discussed the effects of exposure to media on making places known. Tourist culture studies are an example of the predominant domains of "Mediated gaze"⁵⁸ that celebrates places made known by the media world and through media culture.⁵⁹ "Representational mediums develop appetites for seeing places at their unique place of residence [...]"⁶⁰ Larsen (2006) describes how "people travel to see and photograph what they have already consumed in image form; thus: mobile reproduction is far more important than the sight itself[...]"⁶¹ Writing in regard to the connection between image and place and discussing the power of media to move agents in space, Larsen, citing Couldry (2005), discusses how people increasingly travel to actual places to experience virtual places. "Major films and soap operas often cause incredible tourist flows where few roamed before the location was made visible on the 'silver screen'."⁶² Couldry used media pilgrims for describing the journey which is "Both a real journey across space, and an acting-out in space of the constructed distance between the ordinary world and media world"⁶³ In tourist culture studies, destination image is used as "the expression of all knowledge, impressions, prejudice, emotion, and imaginations that an individual or group might have of a particular place"⁶⁴ which is a dynamic process socially constructed and has been affected by media practices.

Embracing the role of media as the main source of image formation, Croy and Wheeler describe the whole process of formation of an image of place, as:

"Forming an image of place generally goes through a process of awareness, familiarity and complexity. People become aware of places through first-time or initial exposure, perhaps through seeing a place on television, reading about a place in a book or a friend talking about it. Through additional exposure to this place, predominately through the general media, their familiarity with the place and its contents increases".

They underpinned this by saying that "media presents many of the images that through our interpretation become the basis of our collective and personal image of place"⁶⁵.

As "the mingling of direct and mediated experience is accentuated by technology"⁶⁶, new media technologies has caught the attention of media scholars, urban researchers, geographers and human

⁵⁶ Adams, Paul C. 2009. *Geographies of Media and Communication: A Critical Introduction*. Chichester, U.K.; Malden, MA: Wiley-Blackwell, P.152 ;Citing (Merrin, Jones and Clarke, 2006, 304)

⁵⁷ hyper text consisted of different forms of visual materials.

⁵⁸ The term is used by Urry, 2002, 151.

⁵⁹ Larsen, Larsen, J., 2006, *Geographies of Tourist Photography*, 249, Falkheimer, Jesper, and Andre Jansson. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter for, 2006, 249.

⁶⁰ Ibid. p.248.

⁶¹ Larsen, Larsen, J., 2006, *Geographies of Tourist Photography*, 249, Falkheimer, Jesper, and Andre Jansson. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter for, 2006, 251.

⁶² Ibid. 249.

⁶³ Larsen, Jonas, and John Urry. 2012. *Mobilities, Networks, Geographies*. Ashgate Publishing, Ltd. P.48.

⁶⁴ Cited in Falkheimer, Jasper and Andre Jansson (Eds.). *Geographies of Communication: The Spatial Turn in Media Studies*, p.134.

⁶⁵ Croy, W. G. and F. Wheeler. 2007 *Image Formation: A Research Case*. In Hall, C. M.. *Introduction to Tourism in Australia: Development, Issues and Change*. Fifth edition. Frenchs Forest: Pearson Education Australia. 1-11 online.

⁶⁶ Adams, Paul C. 2009. "The place Image" *Geographies of Media and Communication: A Critical Introduction*. Chichester, U.K.; Malden, MA: Wiley-Blackwell.

computer interaction (HCI) scholars. Several discussions and debates around communication between media technologies and physical place have emerged; how communication technologies produce spatiality and how spatiality produces communication. Falkheimer and Jansson (2006), while discussing the diversity of affective mediums involved in the construction of destination-image, addressed the neglect in studying the potentials of new media practices.⁶⁷ In line with that, what I am trying to present here is to put emphasis on the role of the recently introduced medium of locative media, as a production site that has the power of producing and forming image of place and becoming involved in the process of environmental knowing⁶⁸ and image formation. Locative media as a type of location-based information technology “provides sites and occasions for the development of new forms of environmental knowing.”⁶⁹

There is a growing body of studies on location-based mobile discourses that examines (in different ways) the superimposition of virtual information on real spaces, and by doing so tries to examine spatial, social and cultural influences of such practices or the ways in which those applications might affect physical behaviours and the ways in which users engage with the physical world.⁷⁰ Tierney (2013), studying the urban and spatial implications of Facebook, asserts that as “social media platforms become increasingly entangled with everyday interactions, it is becoming more difficult to segregate public practices into discretely bounded spheres or spaces.”⁷¹ She further adds that media as organizational space has become the leading cause of action in physical place, encouraging users to move and act offline, dissolving the boundaries between online and offline spaces, between the physical and media-space.⁷²

Aligned with similar concerns, communication studies scholar De Silva (2006) discusses how one of the implications of these media technologies is to overcome the separation of the physical and the virtual.⁷³ She argues that the ability to move around physical places “always on” and connected to the virtual data shifts users’ perception of space, and in turn creates “hybrid spaces”.⁷⁴ Locative media technologies are giving value to the way virtual information interacts with physical spaces, but in order to discuss how these two fairly distinct spheres respond and communicate, it is important to develop and discuss the missing links. This chapter focusses on the representational medium, and visual aspects of representation, as an important factor that operates between virtual information and place. Representational medium plays a part in developing/formulating image (as an expectation of place) that links those fairly distinct spheres.

The significance of the representational medium, how information is represented and accordingly how it interacts with physical space or how each locative media application, through its medium of representation, interacts with reality (including the physical space and multi-sensorial perception), was

⁶⁷ Falkheimer, Jasper and Andre Jansson (Eds.). *Geographies of Communication: The Spatial Turn in Media Studies*, summary of the chapter written by Richard.E in introduction.

⁶⁸ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

⁶⁹ *Ibid.* pp.130–131.

⁷⁰ Gazzard, Alison. 2011. ‘Location, Location, Location: Collecting Space and Place in Mobile Media’. *Convergence: The International Journal of Research into New Media Technologies* 17 (4): 405–17. doi:10.1177/1354856511414344.; Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons; Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons; Silva, Adriana De Souza e, and Jordan Frith. 2012. *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability*. Routledge Chapman & Hall; Hjorth, Larissa. 2013. *Studying Mobile Media: Cultural Technologies, Mobile Communication, and the iPhone*. New York [u.a.]: Routledge.

⁷¹ Cited at Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.P.96.

⁷² Cited at Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.

⁷³ Silva, Adriana de Souza e. 2006. “From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces” 9 (3): 261–78.

⁷⁴ *Ibid.*

highlighted by Dourish and Bell (2011)⁷⁵ as *literacy*, the term that puts emphasis on how spaces are produced, appropriated, and represented in locative media. Their concept, as this considers, discusses medium specificity and how spaces and places are represented or reflected in a medium. In this study, literacy is particularly relevant, as it helps in understanding the medium specificity of locative media, (here, in the case of Foursquare), hence, it enables me to examine how representation of spaces—spaces that exist virtually within a medium—reflect, communicate and help users to appropriate social interactions. Information emplaced in media communicates with reality first through what Burgess (cited in Corsale, 2011)⁷⁶ referred to as “culturally shared, symbolic systems of verbal and visual communications, including those of media”, and secondly as a result of those symbolic materials, through becoming a driving mechanism, allowing users to apply that data in their process of decision-making.

Aligning with Dourish and Bell (2011), by putting emphasis on the representational medium, and through the concept of image of place, here I bring into focus the effects of locative media as the site for construction and formation of image of place. I am discussing the possibility of locative media and specifically, the power of the image constructed within newly introduced mediums, for becoming a cause of action in physical place, and the possibility of media to encourage users to make decisions and potentially move them in the physical world. The image of place acts as a linking chain that communicates between net locality and physical places. This concept operates between users’ methods of collecting net locality (how they are informed virtually about local knowledge) and what they do with that knowledge. The image of place creates a condition for making decisions, and in order to describe how this particular application provides this, we should investigate how this particular image has been constructed in the medium in the first place. Without considering how the medium potentially generates an image of place, it is difficult to understand how virtual-symbolic materials communicate with physical places. In the following section, issues regarding how this particular image is constructed within the medium will be discussed, by adopting and building on certain theoretical concepts, particularly Lefebvre’s concept of representation of space and spaces of representation, corresponding with Husserl’s concept of inter-subjectivity.

Theoretical frames

Spaces of representation, inter-subjective spaces

The potentials of technological development have taken us closer more than ever before to examining and understanding the theory developed by Lefebvre on the social production of space, which approached spaces as collectively created spatiality⁷⁷ and not as another abstract model. Lefebvre developed a comprehensive model of space in which representations of space could be a part of our experience of reality. Places are composed of more than only physical characteristics; they are also socially and symbolically produced. David Harvey helped to make the connection between Lefebvre’s concept of space and place⁷⁸ when he said “[...], The Lefebvrian construction refuses to see materiality, representation and imaginations as separate worlds [...] and permits an examination of the processes of place construction [...and it] owes as much to activities in representational and symbolic realms as to material activities.”⁷⁹ Approaching space from Harvey’s perspective, I discuss and interpret Lefebvre’s concept as a comprehensive model of space which not only includes the socially liberated and liberating

⁷⁵ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. Cambridge, Mass: MIT Press. pp.130–131.

⁷⁶ Corsale, Ivana.2011. “Campania, In Felix(Unhappy country)”, available at: <http://digital.library.unt.edu/ark:/67531/metadc67970/m1/26/p.143>.

⁷⁷ The term was used by CERI WATKINS*, *Representations of Space, Spatial Practices and Spaces of Representation: An Application of Lefebvre’s Spatial* Watkins,C., *Culture and Organization*, September 2005, Vol. 11(3), pp. 209–220

⁷⁸ Part of the discussion mentioned in, Eric Gordon and Adriana De Silva, *mobile technologies and place*, edited by Rowan Wilken and Gerard Goggin,2012, tailor and francis.newyork,90.

⁷⁹ (Harvey, 1993, p.23)cited in (Eric Gordon and Adriana De Silva, *mobile technologies and place*, edited by Rowan Wilken and Gerard Goggin,2012, tailor and francis.newyork,p.90.)

(Lefebvre, 1991) notions of experience but also the idea that representations of space (abstract and conceptual) could be a part of our experience of reality, where they could create/alter the spatiality that we perceive. What has been discussed here is that there is a strong interconnection and overlap of how spaces are constructed, conceived and perceived in contemporary urban spaces, where representations of space (e.g. maps, images as abstract forms) can affect representational spaces (which Lefebvre referred to as lived spaces⁸⁰) thereby blurring the boundaries between spaces of representation and lived space.

With media technologies pervading contemporary urban living, it is more plausible to accept and comprehensively adopt space modalities developed by Lefebvre. Watkins discusses how, based on Lefebvre's concepts, every experience comprises three interrelated aspects of space: representations of space (conceived space), spatial practices (perceived space), and representational spaces (lived space). By using his concept, it can be discussed and theorized that bringing media and representation of space right into the corporeal experience of physical place could enrich the perception of space and in turn it could be speculated that the conventional separation of representation and physical space/reality is no longer the case. Today, in order to grasp a better understanding of contemporary urban experiences, all of his three kinds of spaces and modalities should come together.⁸¹ The co-existence of the three modalities is potentially relevant in comprehending the contemporary complexities of urban life: spaces of representation,⁸² or spaces formed and constructed from narratives, stories and signs could be coupled with representations of space, neither of which stand or act remotely from lived spaces. This specific model of space can be considered to be in dialogue with Husserl's (1931) *Inter-subjective* spaces, in which an individual perceives spaces based on an inter-subjective approach.⁸³ Inter-subjectivity, as Husserl described, is a condition of human experience (for Husserl inter-subjectivity was the (universal) condition of human existence⁸⁴) "through which and on the basis of which our surrounding world can be experienced and can be given meaning."⁸⁵ It is the foundation through which we perceive and construct the "mutual or shared understanding" of place.⁸⁶ We perceive from our point of view what other subjects can perceive, which Husserl notes as:

"I experience others as subjects like me, who have a similar relationship with their surrounding world."⁸⁷ "We as social beings have learnt to see the world from others' points of view and grasp an insight into how others construct their spaces."

⁸⁰ Lefebvre, 1991

⁸¹ Ceri Watkins discusses, based on Lefebvre's concepts, how every experience comprises three interrelated aspects of space: representations of space (conceived space), spatial practices (perceived space), and spaces of representation (lived space) (Lefebvre, 1991, p.38-39).

⁸² Lefebvre called spaces formed and constructed from narratives, stories and signs spaces of representation. It refers to the space that is 'as directly lived through its associated images and symbols, and hence the space of "inhabitants" and "users"' (Lefebvre, 1991: 39, original emphasis). cited at: Watkins, C. Culture and Organization, September 2005, Vol. 11(3), pp. 209-220.

⁸³ Inter-subjectivity originally emphasizes humans as inherently social beings. "In his very experience of himself as human being are implied references to other human beings, to an open horizon of humanity...and co-subjectivity ... Experience of oneself proves to be inseparable from that of others." Cited in Gurwitsch, A. (1966). *Studies in phenomenology and psychology*. Evanston: Northwestern University Press. (p. 443).

⁸⁴ Duranti reviewed historical interpretations of the concept of inter-subjectivity and how it has been elaborated and adopted by scholars from philosophy and social sciences from what was originally theorized by Husserl as a condition of human being which does not necessary need physical presence. "Husserlian inter-subjectivity includes a mode of participation in the natural and material world that does not even require an immediately perceivable human presence"; later it becomes "the achievement of shared agreement or mutual understanding" constructed by language (as a medium of communication). Duranti, Alessandro. 2010. 'Husserl, Intersubjectivity and Anthropology'. *Anthropological Theory* 10 (1-2): 16-35. doi:10.1177/1463499610370517.

⁸⁵ (Husserl, 1998: 55-6; 1969: 233), cited at Duranti, Alessandro. 2010. 'Husserl, Intersubjectivity and Anthropology'. *Anthropological Theory* 10 (1-2): 16-35.

⁸⁶ "the common assumption that intersubjectivity means 'shared' or 'mutual' understanding is a later development of the concept and something that is much more specific and restricted than that originally envisioned by Husserl" (cited at Duranti, Alessandro. 2010. 'Husserl, Intersubjectivity and Anthropology'. *Anthropological Theory* 10 (1-2): 16-35, P.14. doi:10.1177/1463499610370517.

⁸⁷ (Husserl, 1931b: 94) cited at Duranti, Alessandro. 2010. 'Husserl, Intersubjectivity and Anthropology'. *Anthropological Theory* 10 (1-2): 16-35, P.14.

Approaching the experience of place inter-subjectively resonates with Lefebvre's concept of spaces of representation. Relph (1976) used vicarious insideness to explain the inter-subjective experience of space referring to it as "the experience of place second-hand without visiting it",⁸⁸ that is to say, without actually being in the place, through the image depicted by an artist or writer, a sense of place can be produced.⁸⁹ He explained,

"When we read, inspect, or listen to their work [poetry, stories, or any other medium], we enter into their domain[...]. We can indeed enter far into other worlds and other places that are sometimes real and sometimes fantasy."⁹⁰

Hence while understanding inter-subjective experience also encompasses interacting and participating with the material world, this multi-layered and multi-dimensional mode of experiencing spaces also possibly includes experiences without direct physical interaction with the places as well. From this point of view, approaching the experience of place inter-subjectively resonates with the interpretation of Lefebvre's concept of spaces of representation discussed earlier.

Comparably, both concepts of inter-subjective experience of place and Lefebvre's concept of spaces of representation could potentially help to define and describe the role that virtual materials play in enriching the experience of physical places and thus help to discuss the implications of virtual media applications on the perception of places. Both concepts explain how the users of locative media applications develop a sense or a feeling of connectedness towards spaces that they have not yet visited, especially by being exposed to fragments of inter-subjective data. These inter-subjective data or material artefacts potentially work as mediators (mediating materials) for transferring subjective opinions, sensations and perceptions of places between users.

Local knowledge / what is the image constructed from?

What we are receiving and sharing in the act of engaging with these media principally is local knowledge about places. Highlighting the change in conventional methods of collecting information about physical urban spaces, Gordon developed the concept of net locality to explain how local knowledge placed in the virtual realm is replacing the conventional methods of gathering information in everyday encounters such as on sidewalks and street corners or possibly by word of mouth. The image constructed in a medium does not comprise the immediate experience of users, embodied aspects or the intimate way that we experience a physical place, but it can replace or supplement the conventional ways people gather data about their surroundings. According to Geertz, local knowledge is "a commonly held understanding of spaces, rituals, customs or politics shared by group of people with shared interest in a given space".⁹¹ But also, "[it is] a term to describe insider[s'] information".⁹² It is the knowledge that is shared commonly between the insiders of a community (e.g. neighbours, communities, minorities, international students of a campus, etc). As Gordon explained, it could be how people encourage or advise their community members not to buy from a specific shop because its prices are higher than normal, or encouraging others to try a café which has recently opened. What makes that information local knowledge goes back to users' ability to use that information; to locate those "information-flows"⁹³ productively within their community or in relation with their everyday practices. If the information is contextualizable (practical and useful in their everyday lives), it exceeds being local information and becomes *local knowledge*. In return, this practical, applicable local knowledge of a place enables the appropriation of social interactions, increases the functionality and legibility of

⁸⁸ Relph, E. C. 1976. *Place and Placelessness*. Pion Limited. p.52.

⁸⁹ *Ibid.* p.53.

⁹⁰ *Ibid.* p.53.

⁹¹ Geertz, Clifford. 2008. *Local Knowledge: Further Essays in Interpretive Anthropology*. Basic Books.

⁹² Butt, Danny, Jon Bywater and Nova Paul. 2008. *Place: Local Knowledge and New Media Practice*. Newcastle, UK: Cambridge Scholars Publishing, P.323.

⁹³ The term was coined by Meyrowitz, 1985. Meyrowitz, Joshua. 1985. *No Sense of Place: The Impact of Electronic Media on Social Behavior*. Oxford University Press.

places and probably helps users to make sense of their urban environment and possibly affect decision-making (which will be discussed later).

Local knowledge within the virtual is not only an exchange of knowledge; one significant aspect of that relates to the environment that is created around that local knowledge, where users are connected and provided with the possibility to transcend geography,⁹⁴ where disparate people can gather around similar interests, and, as Gordon, E., and G. Koo. (2008), point out, it can defy notions of geographical proximity, “as dispersed groups of people can share their lived experiences⁹⁵ through stories, continue to connect with their ‘homeland’ [...], disparate people and places hang[ing] together through forms of communicative action.”⁹⁶

Another important dimension of this local knowledge can be drawn from Sarah Pink in her study of the “sensory turn”, where the act of generating meaning comprises both symbolic and embodied experiences. In order to theorize and understand image/symbolic information, we should be aware of the multi-sensoriality of image and its relation to theories of place as sites of production, and consumption of images in movement, and consider images as components of configuration of place and meaning production.⁹⁷ She invites us to understand image as part of the experience of a multi-sensory environment and the inter-connectedness of image and place/context, where image generates meanings, as points of a network, interwoven in the continuities of everyday movement, perception and practices,⁹⁸ where meaning production could be perceived as a network, comprising a series of points/dots including image/symbolic material as well as sensorial embodiment.

The communal information about our locales (e.g. whether collected data about a café recently opened, or exchanged opinion about the quality of a coffee shop or its available offers, etc.), in all forms—the common knowledge we share and construct in communicative acts of and about our neighborhoods—if is located within the virtual mediums, is referred to as net locality.⁹⁹ Gordon coined the term *net locality* to address the possibilities of a change in relation between users and information about location located online. He points out that it is now possible to form this local knowledge outside the conventional ways and mechanisms in which we previously came to know about our surroundings. We used to construct local knowledge within conventional non-network forms, like on the street and through word of mouth, through body language, etc, but due to net locality and new constructive mediums of disseminating knowledge, by accommodating media practices we are also able to fabricate knowledge of our locale without necessarily being physically co-present. Net locality, in contrast with placeless data, focuses on holding and maintaining the concept of placeworlds. Gordon describes how, “by holding communities together around a common understanding of place, placeworlds sustain those places against the deconstructive power of flows. Net locality also enables placeworlds to remain inwardly focused without becoming insular.”¹⁰⁰

One of the implications of Gordon’s concept of net locality, and the possibility of a shift in construction and dissemination of local knowledge, is noticeable in the Foursquare case study. Here, the information

⁹⁴ This concept will also be discussed in Chapter 6, where I argue that new media technologies similar to mobility technology are transcendental technologies (transcending geography, territory and spatiality).

⁹⁵ Gordon, in Towards a Theory of Network Locality, developed the concept of placeworld as a communicative act: it is a “group-defined horizon”⁹⁵, a common shared exchange “that is specifically oriented around geographical location. Sharing information about the secret cemetery entrance, for example, is communicative action that results in placeworld [...] A placeworld is not solely contingent on geographical space; [...] it can be originated anywhere”

⁹⁶ Gordon, E., and G. Koo. 2008. ‘Placeworlds: Using Virtual Worlds to Foster Civic Engagement’. *Space and Culture* 11 (3): 204–21. doi:10.1177/1206331208319743.

⁹⁷ sensory digital photography: re-thinking ‘moving’ and the image, *Visual studies, Visual Studies*, Vol. 26, No. 1, March 2011.

⁹⁸ Ibid.

⁹⁹ Gordon, Eric. 2008. “Network Locality: Local Knowledge and Politics in a Network Culture.” *First Monday* 13 (10) (October 6). <http://firstmonday.org/ojs/index.php/fm/article/view/2157>.

¹⁰⁰ Eric Gordon and Gene Koo, 2008, Placeworlds: Using Virtual Worlds to Foster Civic Engagement, *Space and Culture* 2008; 11; 204; Gordon, Eric. 2008. “Network Locality: Local Knowledge and Politics in a Network Culture.” *First Monday* 13 (10) (October 6).

available/located in the virtual medium—net localities—plays a part (mainly as a motive) in the process of exploring physical places, and could be discussed as the cause of the change in users' attitudes and methods through which they initially get information about places. This is where I introduce the image of place, as that acts as a linking chain: communicating between net locality and physical places. This concept operates in between users' methods of collecting net locality (how they come to know virtually about local knowledge) and what they do with this knowledge.

In the following section *Foursquare* is discussed as a model in which the two concepts of space and representation are intertwined and connected. Delving into the media practices in which the communication between physical spaces and the virtual medium (or to be more specific, the representational aspect of locative media) is effective, image of place is developed that conceptually links, and consequently overcomes, the separation of representation of a place and its physical space. In the test to follow, we will negotiate the incorporation of locative media in the process of formation of image of place, and will consider the possibilities of image of place and its formation as a byproduct of media.

Foursquare

Foursquare is a social media application that is built upon the notion of bringing together the places we visit with friends we connect to,¹⁰¹ the shared experience of place with people who are not physically around. The application offers services varying from location recommendations and search engines to more general fields, such as who is nearby, or which of one's contact list has also been in the same place as one has been, or what are the tips and comments people or friends leave in the same place, etc. Foursquare was launched at South by Southwest Interactive in Austin, Texas in March 2009, having been developed by Crowley and Selvadurai in 2008. Users of this application need to get an account similar to Facebook or other social media platforms, and then they can look for friends or explore people/places (nearby or worldwide). As their website explains:

Foursquare is a free app that helps you and your friends make the most of where you are. When you're out and about, use Foursquare to share and save the places you visit. And, when you're looking for inspiration for what to do next, we'll give you personalized recommendations and deals based on where you, your friends, and people with your tastes have been.¹⁰²

Foursquare could be described as a personal game environment that one plays with friends or oneself to earn rewards such as mayorship of places/venues, badges or points. Each point in space could have a counterpart in Foursquare as each point of reality could be presented virtually (with a dedicated page, title, address, map, details, etc; please see Figs 4.1 & 4.2). But if one physical space exists over another space, both of them could have the same reference point on the map (their representation on the map is still the same although each can have a separately dedicated page). Since the accuracy level of the point on the map is not very high, it is possible that points (located on top of each other, for example different floors of a building) could still be represented beside each other on the map. With more than 50 million users from all around the world and over 6 billion check-ins, the Foursquare map can be considered as a data bank created through the collaboration of varied social classes actively sharing their personal ideas of places, their reflection of each place they have visited, in virtual pages similarly titled to the place's physical name.

Foursquare creates highly interactive platforms for individuals and communities to share, discuss, and modify user-generated content, which includes notification updates (of what other users are doing, where they are, how they are feeling) or links to other applications (e.g. 'swarm', an app that provides a list of all check-ins). In turn, Foursquare connects these real-time updates into location-specific information and reward points and mayorship to users for their participation through leaving their

¹⁰¹ Anastasios Noulas, et al, Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media An Empirical Study of Geographic User Activity Patterns in Foursquare. Accessed at https://www.academia.edu/2787402/An_empirical_study_of_geographic_user_activity_patterns_in_foursquare

¹⁰² Application main webpage accessible at <https://foursquare.com/>

‘comments’ or ‘lists’ for others to view.¹⁰³ They can also show their support for other users’ activities by adding comments (e.g. on a gym activity, about visiting a museum, etc.) or suggesting lists, sharing multimedia context information such as photos, text, tips, etc. As “users imprint their own identity to the places where they live”, it can be studied as a change in social/communicative understanding of places.¹⁰⁴

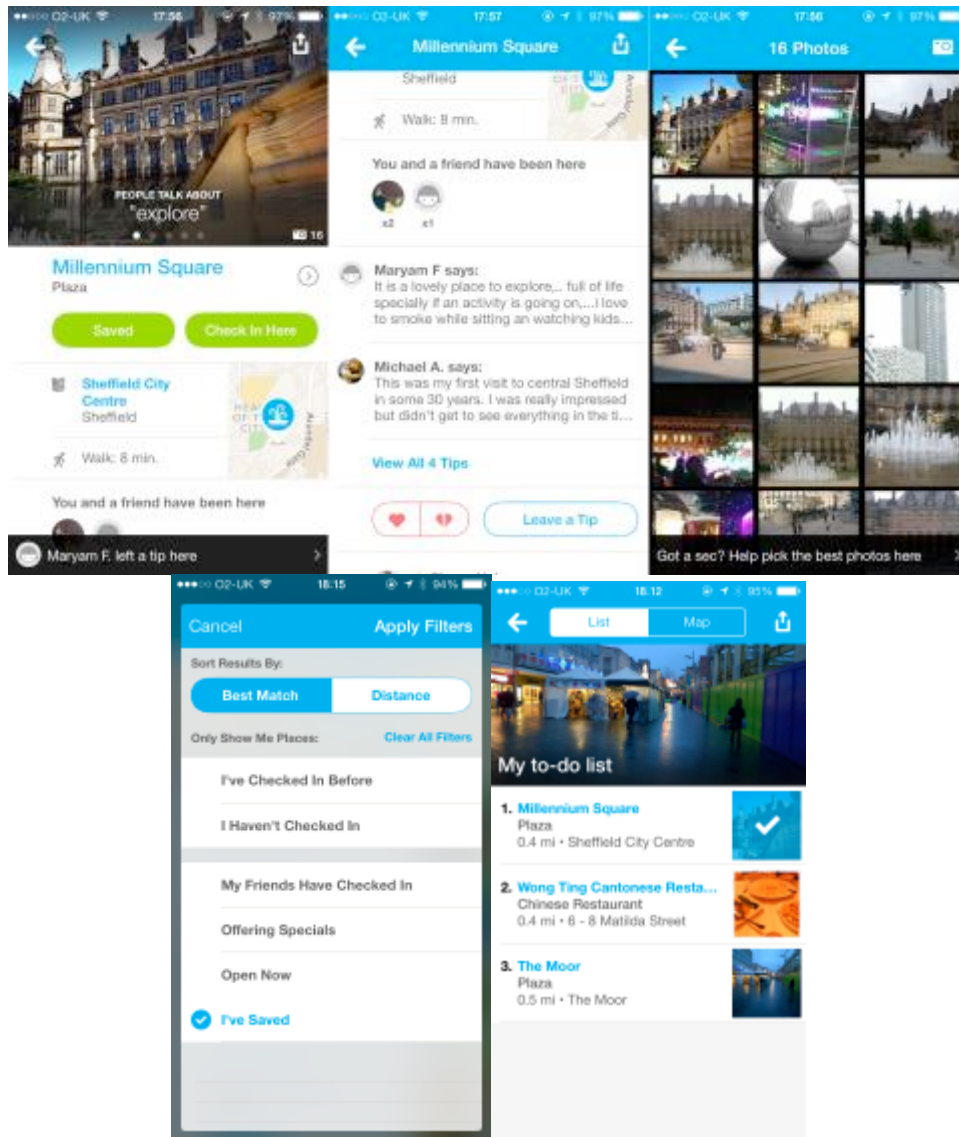


Fig. 4.1 The screenshots represent the interface of Foursquare.

¹⁰³ Kietzmann, Jan H., Kristopher Hermkens, Ian P. McCarthy, and Bruno S. Silvestre. 2011. ‘Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media’. *Business Horizons* 54 (3). SPECIAL ISSUE: SOCIAL MEDIA: 241–51.

¹⁰⁴ On Locative Media and the Urban Space
Posted by Luciano Frizzera in Academia, Papers, Places, Thoughts, UofA accessed: <http://luciano.fluxo.art.br/2013/01/on-locative-media-and-the-urban-space/>

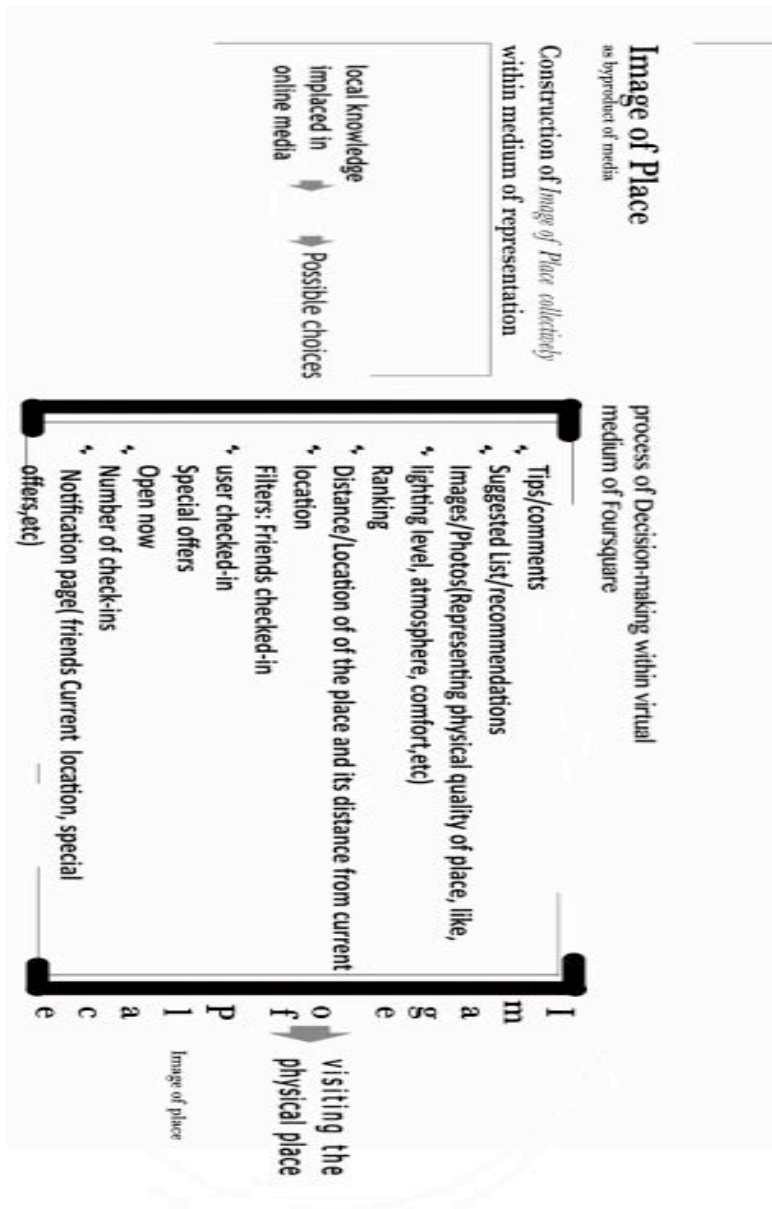


Fig 4.2 The caption (bulleted list) represents possible interaction between the user/application interface and other users. The process of decision-making could be described as a series of options and choices provided by the application for each user.

The application becomes a part of image formation and helps users develop expectations towards places. On the Foursquare home page, a user can choose from categories of places classified by the application (e.g. food, nightlife, coffee, shopping, sights, outdoors) and the user, and, by applying various filters (best matches and distance, his own 'check-ins'), in combination with viewing images and tips left in the place, develop feelings about and expectations of that specific place. These influential aspects are mainly represented as a filtering system applicable when searching for venues (refer to Fig. 4.3a). A user, for example, can define her or his search based on their friends' check-ins, and by doing so they look for possible options—places—based on interests that are not their own. Instead, s/he collects information and makes decisions according to the choices that friends have made previously (refer to Fig. 4.3b). In this process of filtering, the user trusts those choices made by friends, or at least takes them into consideration. This is, indeed, a common way of accumulating local knowledge or making decisions outside the medium in our everyday life. However, the search process formulated here puts users within a community of friends and families in which each check-in position is in relation to other check-ins of that community.



Fig 4.3a This figure shows a typical sequence of choosing a place in the Foursquare application. There are many different filters available for users to search for a venue that eliminate, filter and specify the choices and options; for example, a user can apply filters such as: I've not checked in before/I have checked in/My friends have checked in here/lists of places that s/he has saved/new places and upcoming offers/etc, to search for venues.

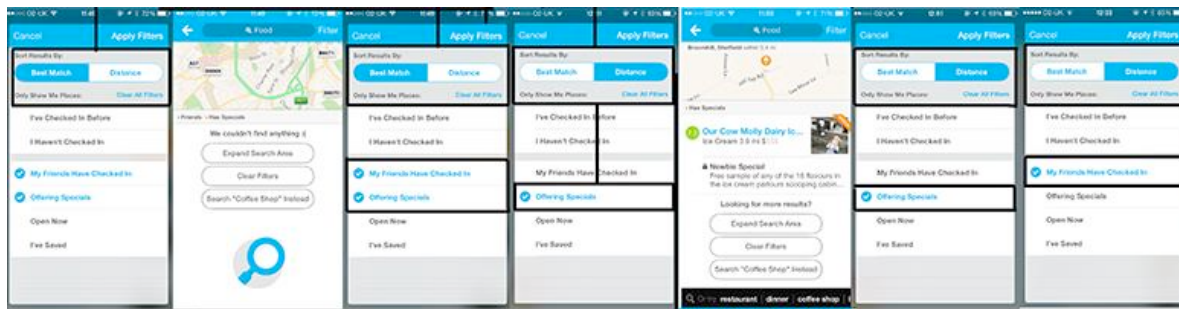


Fig. 4.3b A zoomed-in view is presented in Figure 4.3b. The user can base her/his search on her/his own previous check-ins, and can apply the filter of: *my own previous check-ins*, or, s/he also can base her search on *friends' check-ins* and by relying on their check-ins, and the places they have already been to, filter the search for a place.

Methodology: Data collection and analysis

As the objective of this case study was to gain the best insights into the emergent practices of engaging with Foursquare as an example of locative media practices and to discuss mainly the concept of *image of place*, a multi-method data collection approach was employed involving semi-structured interviews, artefact collection (snapshots of users' activities as well as screenshots of different methods of searching for venues, lists, tips, etc), and behavioural pattern study: collecting users' check-ins over a period of five months (November 2013 to March 2014).

Sampling and recruitment. Over this period, semi-structured interviews were conducted with 9 participants of the application (all international students studying in Sheffield) to capture users' thoughts, their motives behind using the application, sense of community, privacy concerns, and usage patterns. Research participants were identified through different approaches. Since the Foursquare application is not widely recognized in Sheffield, the author's personal account was used to contact random people who checked in specifically on the university campus as it was more likely that students are the ones who would check in there, and would respond to a call for an interview. The aim of the study was to observe the way in which users get to know their surroundings, places to visit, and places to avoid. The study also focused on observing how important the role of *medium of representation* is for helping users to choose between places or to communicate with friends. It was also crucial to understand from the users' point of view to what extent the application has become a tool for arranging and adjusting their social and spatial communications. To arrange face-to-face interviews and to visualize the check-ins of users within the geography of Sheffield, the recruitment strategy was based on proximity to Sheffield; thus geography/location of users became an important factor in the recruitment.

The study aimed to understand how the virtual medium of representation is involved in the experience of space, and how representation and reality communicate. For this purpose artefact collection methods were chosen. These methods of observation were adopted because they deal with virtual materials and artefacts, and the observer does not necessarily need to communicate directly with users or participants and develops an understanding of process mainly through observing patterns of use¹ in the virtual medium. Online ethnography artefact collection methods, which use different terms such as "Internet ethnography, or simply, netnography",² were employed to gain better insight into the process of decision-making.

A similar method suggested by Erickson was employed to study the medium-specificity of Foursquare: visual materials collected from screenshots over the course of a five-month period (refer to Fig. 4.3). This method facilitates capturing the complexity of interaction and usage of the application, by taking photos (screenshots) as the method of collecting materials regarding users' patterns of use/their engagement.

Screenshot data collection mainly focused on capturing the behaviour of the users who were not friends with the author, but whose tips, images, and check-ins were accessible online. The study targeted users with more than 200 check-ins, to make sure the users chosen had got into the habit of checking in and sharing tips. Such artefacts from users over a period from November 2013 to March 2014 were collected. The collected data was used to examine how users interacted with representative and

¹Erickson, Ingrid. 2010. "Geography and Community: New Forms of Interaction Among People and Places." *American Behavioral Scientist* (February 18). doi:10.1177/0002764209356250.
<http://abs.sagepub.com/content/early/2010/02/18/0002764209356250>.

²Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.79.

symbolic data, and how they employ those symbolic materials in their process of decision-making (e.g. when they want to choose places, or when they want to discuss a venue with friends and consequently make a decision) (refer to Fig. 4.3).

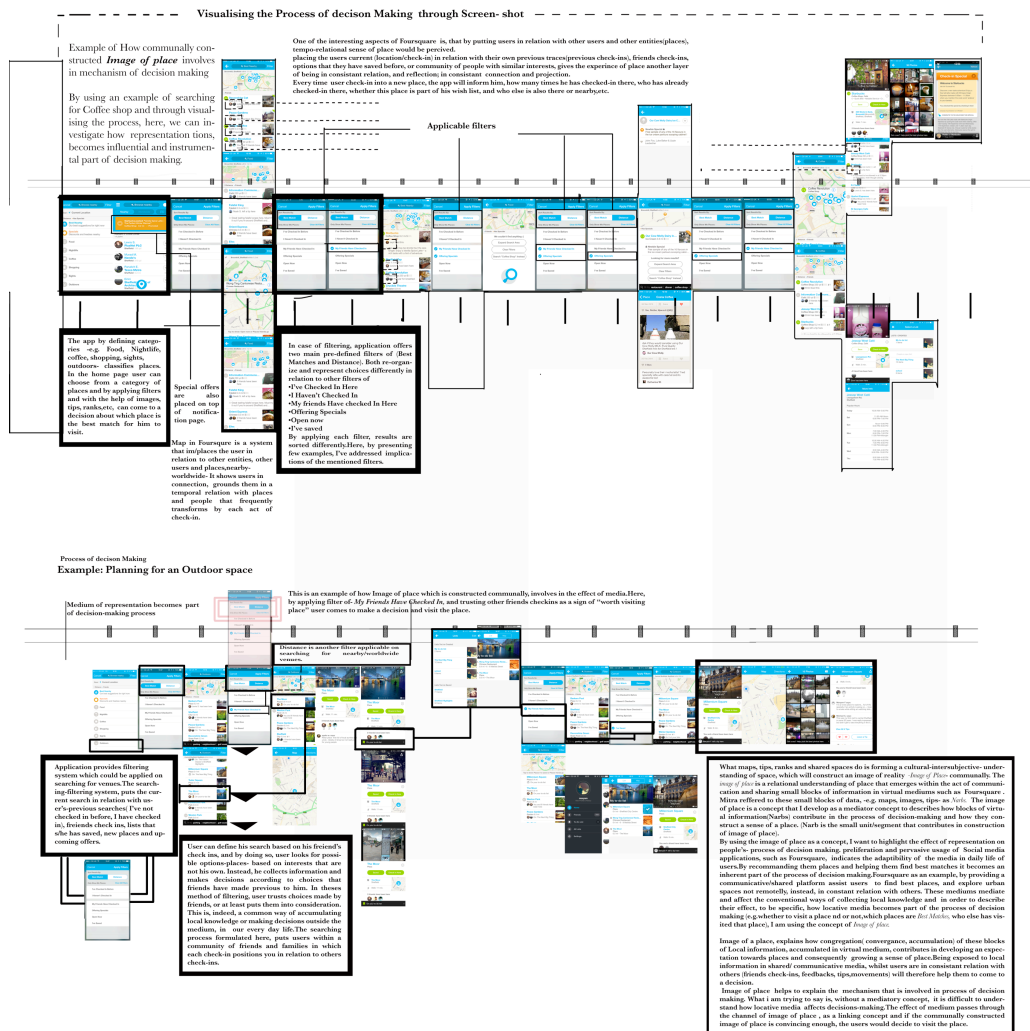


Fig. 4.4 The process of decision-making is visualized through two examples. Here, the artefact collection method was employed to provide understanding of the sphere of Foursquare. This figure shows, an overview/outline of how I gained an insight into the environment of the application through studying visual materials: artefacts and screenshots that I collected from users' activities over a period of time.

In order to get a better understanding of the application, I repeated the action of searching for different venues with some of the users step by step, mainly by going through the actions they took when they searched for a place. I did this to know what features/elements affected their search and are influential search/filter criteria.

Discussion

The usage of the Foursquare application shows that it has passed the stage of being only a representation of space without consequently affecting reality, and now for users of this application, the elements of this space not only have logic and associated meanings, but also they can give value (meaning) to points of reality (physical locations). Virtual medium lays value on the physical places based on the value system that is defined within its environment/sphere, and through visual aspects of the interface and its representational medium the application links the virtual with the physical.

One of the aspects of the study, as I mentioned, was to investigate how the image created within the virtual medium, from the small fragments of information, can interact with physical place and affect users' image of place. To explain that, first I will introduce Narbs. Narbs is originally developed by Mitra to refer to small blocks of data that people share—such as maps, images, tips—within the virtual medium.¹ The concept of Narbs was originally developed to discuss the construction of fluid personal identity formed within social media. Mitra addressed the possibility of producing personal identity by manipulating the flexible components of identity that could deliberately be controlled and produced within social mediums. The small segments of personal information that people share could be pieced together to form and represent identity.² Each time a person adds another block of data (photo, comments, etc), s/he deliberately contributes towards the construction of their identity online.

The concept of Narbs could be adapted to the context of locative media, to refer to the smallest segments of inter-subjective units of shared data, and to explain how the construction of the identity of place, or the *image of place*, is constructed from an assemblage of possibilities,³ of segmented images, tips, text, personal photos, etc. This assemblage is not placeless information, but rather it is knowledge of a locale; all bits of personal information shared within this community of people are about a location. Putting a new photo of the place together with other fragments of personal information, and sharing that information in a communicative platform, results in the building of a tissue that is the *image of place*. The *image of place* is a relational understanding of place that emerges within the act of communication and sharing of small blocks of inter-subjective information in virtual mediums (e.g. Foursquare, Flickr, Facebook) available and perceivable for other users.

To develop the concept of image of place within a medium, it is helpful to refer to the original characteristics of conventional concept of image of place, that were mainly considered as embodied characteristics in the minds of users/passers-by. Relph clarified that the images of place constructed in the mind of a user were not just selective abstractions of an objective reality, but were an intentional interpretation of what is or what is believed to be.⁴ The image of place constructed within the medium of Foursquare also carries intentions and imposes influences particularly on users' decision-making. It imposes influences on the users especially by re-valuing the relation of a person with the place. (I will support this assertion in the following paragraphs, where I discuss recognition proposed by this application.) The image produced in the virtual is an influential image and similarly does not act as selective abstraction of reality. Although ingredients of this image locate within a virtual medium (fragments of Narbs), surely its effects are conveyed outside the sphere/environment of the application, and act as instrumental factors for users to communicate, perceive and consequently interact with physical places (in relation with reality). This concept looks outward targeting the physical places and therefore exists beyond the virtual and becomes a linking entity, reinforcing connection to real places, positioned somewhere in between physical perception of place and virtual entity.

¹ Mitra,A.2013, Mapping Narbs, in New Visualities,New Technologies,the new ecstasy of communication, edited by Macgregor,J and Koskela,H. Ashgate.

² Ibid.32.

³ Cited at Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.P.71.

⁴ Relph, E. C. 1976. *Place and Placelessness*. Pion Limited p.56.

For a deeper understanding of the characteristic nature of the link between the virtual and the physical itself: the following section delves into the consequences of image of place, and how it communicates with physical place.⁵ Within the medium of Foursquare, as I already hinted, image of place is a product of collective communication, a montage of bits of personal subjective opinions which in total form a holistic image that in return comes into existence and communicates with reality. The manifestation, usability and formation of image of place are more evident as influential mechanisms specifically in the process of decision-making, when users develop a sense of the place they want to visit through checking the medium of representation. In the case of searching for places and decision-making, there are a number of influential constituents—virtual materials—that help users to decide (refer Figs 4.2 & 4.5).

⁵ People use Foursquare in two distinctive ways: firstly, through check-ins, used either for game purposes (collecting points, badges, keeping a mayorship) or to keep a record of their own check-ins; and secondly, to look for places. The concept of communally constructed image of place becomes more palpable when they want to choose a place to visit (e.g. to find a nearby café or a restaurant).

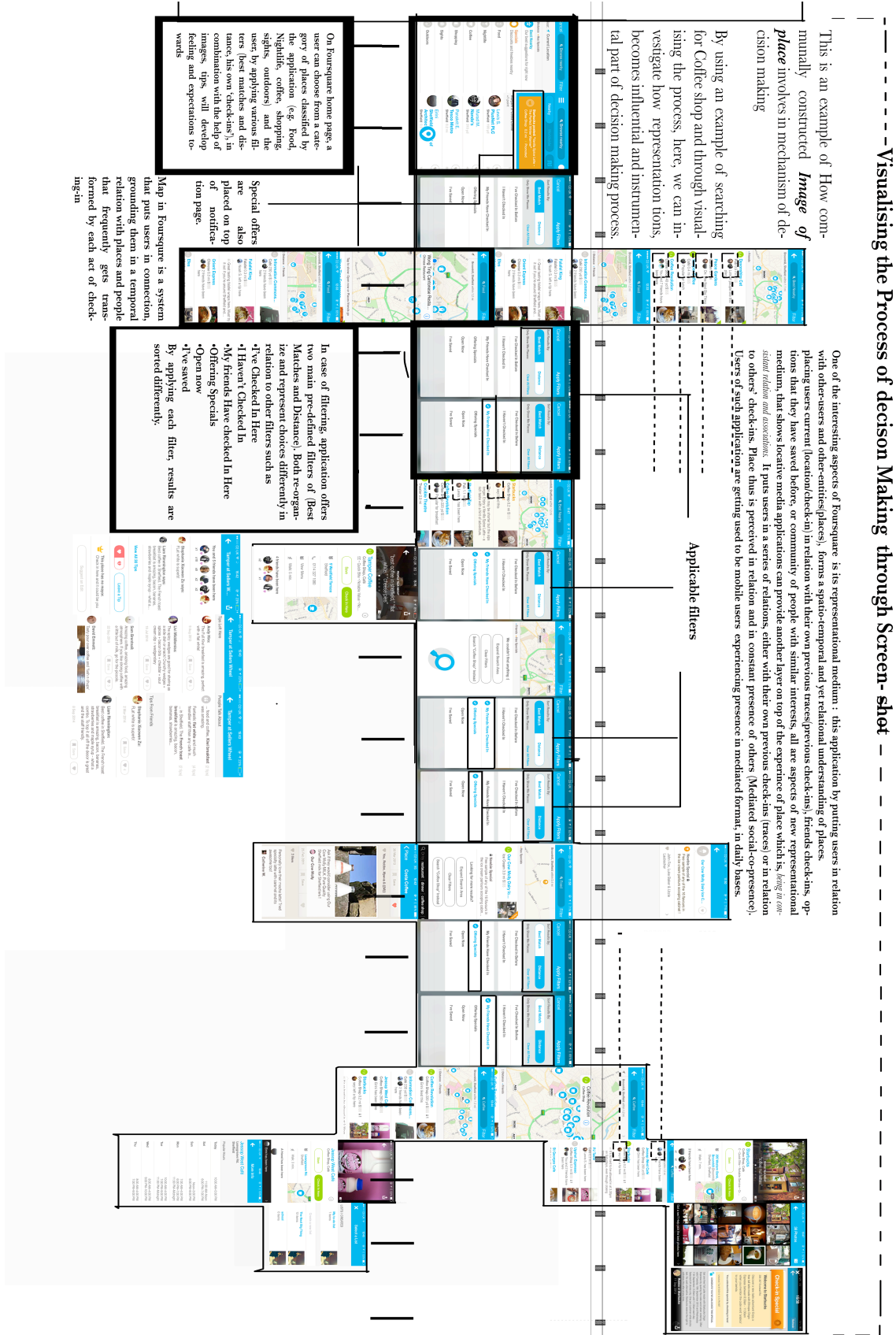


Fig 4.5. Zoomed view of the second example that shows how the user came to make a decision about café: all the steps of the process were recorded, collected and are presented here.

One of the significant aspects of that image created within the representational medium of Foursquare is how it gives recognition to some places or makes people aware of those places. Foursquare proposes its own system of recognition and gives value to places (promotes value to some places) that might or might not follow the conventional way places become known to people. It could even give recognition to unconventional places which otherwise would remain less visited by people. This recognition is enabled not only through a process of highlighting the logic and associated meanings of that place, but also by giving value (meaning) to actual physical places in reality.

The recognition and the assigned value do not necessarily follow real recognition of physical places and the reason that places get recognized in this sphere is different, as unconventional places/locations also become popular among users. This reminds us that virtual worlds are imposing their own system that might or might not reflect reality, but can exist parallel to it. For example, it is noticeable that people prefer not to check-in in fast food areas or supermarkets, and consequently they are less recognized within this virtual sphere. On the contrary, based on the numbers of check-ins, a platform in a train station might get recognition equal to or even more than a café or a bar, and it might be suggested to you as a place similar to a well-known restaurant in a real urban place. So the inner symbolic system that gives value to places does not necessarily follow the conventional way places get recognized.

Recognition of place also comes from situations where it is suggested to the user because someone who she/he knows has left check-ins. The application provides people with a list of recommended/favorite places from friends, and users get a list of places that are worth exploring. For instance, one of the participants explained how, immediately after adding a friend to his Foursquare account, a list of favorite music venues entitled: “Top picks for music venue” popped up. If a place gets recognition in the virtual medium it might interest people to explore it as a physical place, so the value for users comes from recognition in the virtual. This application through giving values to virtual points enables the virtual to interact with the physical. One of the participants explained their reliability on the virtual information offered by the application, and recognition of a place in the virtual as a motive to explore that physical place, as:

“I had a few hours before leaving London, and I was looking for the best café nearby and based on peoples check-ins and the positive feedback I walked to a café in Bloomsbury area of London which was few minutes away from Kings Cross station, and if it was not because of the application, I would not notice the place at all.”

Locative Media From Transcendental Technologies to Socio-Formative Spheres: An Examination of The Interface between Place, Agent and Locative Media

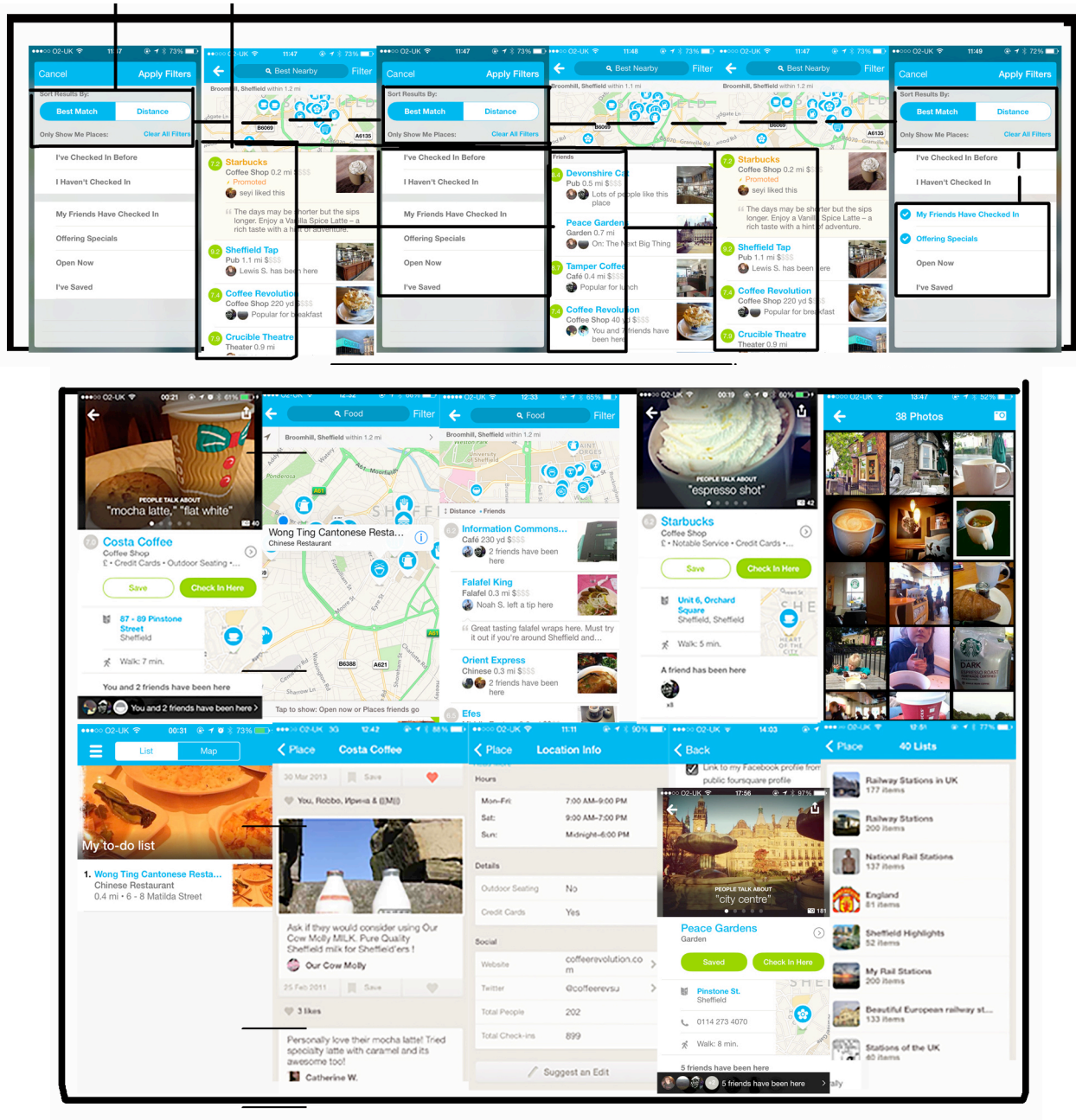


Fig. 4.6 Here, the snapshots of the application show Narbs: the fragments of information which are the ingredients of image of place. They include: visual material representing a particular place, any special offers, recommendations of that place, suggested filters, whether the place was suggested by friends' check-ins/friends' comments/shared photos, the page of the place, comments by unknown users, activity of a friend in that place, the user's personal check-ins, etc.

Relevant for discussion here is to present how three participants addressed the importance of the medium of representation (whether images, tips, ranks, or friends' check-ins) as an influential factor to support their search for venues and later in decision-making.

"Recently I was in London looking for a café and I got the notification saying your friend has commented there, and since I knew him as a coffee crazy, I thought the place is worth trying, and I checked its photos [...] next minute I was heading there. Sometimes, you make absolute decisions just because, you get to know a place not through words of mouth rather through the application [...] The other time we were in London, we were hungry and were looking for a place to eat and wanted new places, and I did not know how to find one. So I looked for recommended/shared list provided by somebody else, and I added it, and I went through the list, and found few places and then I checked peoples' comments; you normally check comments and ranking, because you want to see how people have rated them, [...] If I know the area, and if I am in my comfort zone[...] I mean the places that I feel familiar, then I will normally check the comments, because that represents how people really found the place, and then I will check the photos (its lighting and sofa, to see whether it is comfy or not,..), but If I am not familiar, like the last time when I was in Germany, I went to Raouzenberg (a small city in south)...rating was not enough for me, so then I checked out the pictures, and then I went through the comments,[...] of course the English ones! Like, if the waiters speak English, or, the food is okay [...]"

Another participant described how since her arrival in Sheffield, as she did not know the local culture, she was interested in knowing restaurants and bars that were exclusively used by locals (not the ones that tourists visit), so she decided to add local people to her friend circle, and by doing so she was able to *enter* into the community of locals and know the neighbouring areas and other information from their perspective. Additionally, when asked to describe her process of looking for a place, and the role of representation in that search, she explained,

"We have our own community and we gather in a bar called the Root Arms, and a few people from this community put check-ins in that bar, showing they are there [...] or they have already arrived,[...] The bar is very popular,[...] first time my friends sent me the page of the bar on Foursquare. The page provides address, map, telephone number and even the opening and closing times [...]. It was not the only time I send and share pages of places with friends. Recently we use it a lot, whenever we want to go to a new place, we share different possible choices with friends, and then we make decision which one we want to go, I personally like to keep in contact with my friends and make sure they like the place we want to go. [...] Through browsing images of places, mainly, and considering their distance and sometimes reading the tips, we decide between the possible choices."

When I asked another participant, who expressed that she uses the application to find new places to go out for a meal, about her priorities when searching and in which situations she would search for a place, in regard to the information and options that Foursquare provides, she explained that "[...], yess!! They all fit together, you see friends been there, or might read particular comments, I am a vegetarian, So If I read lots of comments saying how brilliant the steak was in a particular place, then probably I might think it might not be the right one for me!"

On the other hand she explained that she trusted the application too much, that to some degree it is replacing the conventional ways we look for places, through seeing/observing/asking.

If my search is venue-based, especially if I am in a place I don't know well, [...], imagine I am looking for a restaurant or coffee shop,[...], for example a couple of weeks ago I was in Redeem

for business, I did know the name of the place where I liked to have lunch, probably I could have looked outside the window, it was right opposite the massive shopping center!! But instead I used Foursquare to find its location!”

The above three examples show how users apply the application for searching for venues (in the first example, the aim was to find a café; the other two explained the process of searching for a restaurant venue). What is more significant is how the representational medium can also become a vital tool that not only aids users with their decisions and choice of places but also provides a platform for strangers to enter into the local community, enabling them to get local knowledge in ways other than from the usual means such as conversations with the locals and by word of mouth.

Conclusion

Locative media applications are playing a significant role in changing the conventional ways we come to know about places. They are affecting the ways people develop relations to places, or gather local knowledge of and about places and maintain their perception/expectation of places. They are fundamentally affecting how we relate to place (relation of person to place) and each other (person to person). New media technologies have opened up possibilities for image of place to come into existence, as another dimension of place itself that exists detached from physical place, where it is located instead within the ecosystem of media. The chapter strives to notify the possibility of integrating new forms of media, in formation of image of place outside the conventional ways, emphasizing mediums such as sites of production, formation and consumption of image of place.

I introduced the concept of Narbs to develop image of place and to elucidate the ingredients of image of place. Narbs are the smallest blocks of inter-subjective information that users share, and through piecing together those bits of information into a collage, an image of place is constructed. I addressed how image of place within a representational medium, specifically in the case of Foursquare, exists within the virtual medium but the effect of that image exceeds the virtual and communicates with real/physical places, evolving as a driving mechanism that helps not only to create a condition for making decisions (to choose or avoid places) but also to engage with places meaningfully, to develop personal relations and to appropriate social interactions. The effect of the medium passes through the channel of the image of place as a linking concept, and if the communally constructed image of place is convincing enough, users will decide to visit and engage with that place corporeally. The image of a place constructed within the representational medium thus serves as a link connecting the virtual/symbolic material with the physical places.

Image of a place in this chapter explains how the congregation (convergence, accumulation) of blocks of local information (local knowledge) added in the virtual medium contributes to developing an expectation towards places, and giving recognition to places through defining values and consequently growing a sense/expectation for that place. One of the findings of the interview was how users incorporate this application into their social interaction, to enter into local communities—communities that might not be very welcoming to strangers—and get informed about their rituals and habits, without necessarily interfering or physically entering into that environment. This way, by adding members of the community as friends and through following their habits, users can incorporate the application as a tool for social connectivity and to expand their knowledge of a locale. The representational medium plays a unique role in the formation of specific image or identity of each place. In this chapter, I mainly developed the concept of image of place, and showed how users, by bringing personal subjective opinions, their own personal views, “outside references, prior understandings”¹(Gordon and Koo

¹ Gordon, E., and G. Koo. 2008. “Placeworlds: Using Virtual Worlds to Foster Civic Engagement” 11 (3): 204–21. Term used by Gordon to describe placeworlds.

2008), or subjective perception of places, would have deliberate effects on what others would imagine/expect about a place. The focus was on consequences of re-location of local knowledge (where it is placed within a virtual medium). In the following chapter, I will provide a different understanding of the application, where the focus will be shifted to how co-presence and social interaction between users can enrich their place-attachment or their sense of places. By developing the concept of mediated social co-presence, I argue that new media technologies, by putting users in constant connection, provide a totally different understanding of place, which I refer to as relational understanding of place.

CHAPTER FIVE: MEDIATED SOCIAL CO-PRESENCE

The role of this chapter regarding the overall structure of the thesis is to discuss another aspect of mediating urban spaces, through the concept of mediated social co-presence.

So far I have discussed two case studies. The first example (*Streetmusuem*) was an augmented reality application under the umbrella of which I discussed representational medium's role in strengthening the association of a user with place. It was found that the relation between virtual and symbolic materials and the materiality of urban space was tangible and direct. To complement and contextualize these findings, a second case study was undertaken on an application (*Foursquare*) where the relation between the representational medium and urban space was not direct (even though it still affected the experience of space). This second case study analyzed the effect of using a locative media application where the *image of place* provided a channel or medium between virtual information and the materiality of the physical.

In the previous chapter the focus was more on the representational medium of the *Foursquare* app as a site that affects the image that we attain of places. The orientation of that chapter was towards discussing how the image of place is affected by new media technologies and how medium becomes an integral part of the image formation process. I discussed how new media technologies are becoming a significant mechanism framing the way people develop a *sense of* as well as *expectations towards* places and it mainly happens by developing an image/identity of place, constructed from bits of information (Narbs) shared communally within virtual mediums. It was discussed how locative media (and its representational medium) is becoming an influential factor in the formation of an image or identity of place *that is detached from, yet in connection with, the physical realm*.

The present chapter retains a focus on *Foursquare*, but explores certain other aspects of this locative media application: in particular, the implications of social media; on interconnected concepts of *place-experience* (sense of place), *place-attachment*, and *mediated presence*, which will be approached through a discussion of mediated social co-presence. The focus is on exploring the impacts of media on place-experience and issues of place-attachment through investigating how locative media changes the integrated relation of (person to place: spatial relation) and (person to person: social relation). It more directly deals with mediated experience, and investigates how the socio-spatial structure of a place is experienced/practised, through the use and presence of new media technologies.

Mediated Social Co-Presence: When Social Media Meets Place (case study of Foursquare part 2)

Abstract

In the theoretical part of this chapter, I integrate the three main concepts which belong to different domains: *place-experience* (sense of place), *place-attachment*,² and *mediated presence* to illustrate the emerging condition of mediated experience³—that is, resulting from mobility of material/immaterial (text and context,⁴ convergence of new media technologies and place)—and furthermore to discuss the accommodation of new media technologies (social media and representational medium such as maps, images, notifications, or text) that have raised challenges to conventional theories of place-experience and place-attachment. Following this, the discussion is directed to introduce and explore mediated social co-presence and its socio-spatial implications within the frames of the case study (*Foursquare*), where I discuss alternative and *flexible forms of sociability* offered by this application. I argue that this has place-related implications, such as offering users the capacity to sustain their attachment to old places while possibly developing bonds to new places. In addition, by providing a relational understanding of place, where a representational medium puts place-understanding *in relation* to other entities (traces of people and places), it offers to provide in-group experiences.

The chapter investigates how the use and presence of new media technologies affects, and possibly changes, the ways the socio-spatial structure of place is experienced/practised. Drawing from the inferences of the case study of Foursquare, the chapter explains that the development and adaptation of tracking systems coupled with accommodating representational medium⁵ enables place and place-understanding to be perceived *in a more relational nature* and in ways that are more dependent on medium, where medium is becoming *actively involved in the practice of place-experience and sense of place*. Thus this case study discusses the essence of changing situations within which *social media technologies are actively involved in the practice of place-experience and place-understanding*.

New forms of mobility (mobility of text and people) challenge place-attachment and place-experience

Different forms of mobility, especially mobility of information/text, have generated interest for researchers in the fields of social studies, cultural studies, human geographies and urban studies regarding issues of place attachment mainly in terms of the challenges imposed by mobility on conventional theories of place-attachment and place-experience.⁶ Mobility theorists draw attention to how corporeal and technologically mediated forms of movement are combined, and, by their interaction, how they might challenge physical setting and senses of place and place-attachment.⁷ Sociologist and urban researcher Per Gustafson, in *Place Attachment in an Age of Mobility*, has recently discussed how new media technologies and different forms of media practices may challenge the traditional understandings of place (sense of place, place-attachment).⁸ Using new forms of mediation (internet, mobile phone, social media) which are all integrated to connect mobile people and put them in contact with their home places despite physical separation, people still can

²Term used by Nikolay Mihaylov and Douglas D. Perkins, chapter 5, *community place attachment and its role in social capital development*, in *Place attachment*, edited by Lynne C. Manzo and Patrick Devine-Wright, 2014, Routledge.

³ This case study discusses the essence of change in situation within which *social media technologies are actively involved in the practice of place-experience that offers a more relational understanding of places*.

⁴ Falkheimer, Jesper, and Andre Jansson. 2006. *Geographies of Communication: The Spatial Turn in Media Studies*. Göteborg: Nordiskt Informationscenter for.

⁵By representational medium I refer to the ways information is represented within each application and how it interacts with reality. Representational mediums mainly comprise of a number of elements (maps, images, text, annotations, notifications, etc). The visual/representational aspects of each interface differ from one application to the other.

⁶I will study those impacts, through using an interdisciplinary approach and sharing different insights from other disciplines (of human geography, mobility studies, environmental psychology and media studies).

⁷Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge.p.40-46.

⁸Ibid.p.39

develop and maintain bonds with distant places, distant people, and possibly determine local attachment.⁹ In short, new media technologies allow people to maintain bonds with geographically separated places.

Place attachment and rootedness have often been regarded as positive qualities, where any form of mobility which potentially weakens the bonds to physical origins has been considered as having a negative impact.¹⁰ However, as Per Gustafson discusses, *mobility, and pervasive forms of communication and mediation, and different forms of mobility and virtual communities, are potentially enriching rather than necessarily being problematic. Those media help users to develop bonds with multiple places, people, present and past home places and recreational settings, and so forth.*¹¹ Gustafson refers to those media as *technologies that take part in developing multiple attachment ties,*¹² offering a more progressive understanding of place in relation to mobility in the contemporary age.

By studying migrants' use of online communities, Skop and Adam discuss how virtual communities (connected by platforms of media technology), may be of particular importance for mobile individuals who, by creating and inhabiting virtual places, may overcome separation and develop a sense of identity.¹³ For those people, a virtual community is a place with which they can maintain bonds (with their origins) and can feel attached to events and stories related to places and people they know and care for. Barcus and Brunn (2009) introduced the concept of place elasticity as a new conceptualization of place-attachment made possible by innovations in communication and other forms of mobility and mobile technologies. Through their concept they explain that, "Place elasticity allows individuals to live in distant locales while maintaining close interaction with a particular place".¹⁴

New studies on media technologies, mobility and the possibility of multi-attachment (multiple bonds)¹⁵ have started to challenge conventional ways of maintaining place-attachments. Barcus and Brunn's concept of place elasticity proposed that a new conceptualization of place-attachment needs to be applied to discuss related issues especially after new forms of mobility and possibility of interaction from a distance. Aligned with those studies, this study of *Foursquare* set out in this chapter also supports and provides evidence of the way users accommodate locative media applications—where location matters the most for users—as *alternative and flexible forms of sociability*, to form and frame their interactions on a daily basis, and possibly to make sense of new places. That means establishing new relations or bonds to new places, as well as maintaining bonds to their original places or their personal communities.

Place-experience and place-attachment are considered as intertwined concepts, and their relation has been examined by new media technologies, where media brings the feeling of having a connection to other places/people directly into the experience of current place, when a user tries to establish new bonds. In other words, new media technologies, by providing mediated communication (person to person), besides aiding users in maintaining place-attachment, affect their place-experiences (relation of a person to place) and ways they make sense of current places. This effect I refer to as hybrid effect: maintaining attachment to old and developing bonds to new places, as is evident in the case of *Foursquare*.

⁹Ibid.

¹⁰Ibid.

¹¹Ibid.

¹²Ibid.p.41.

¹³Skop and Adam, 2009, creating and inhabiting virtual places, Indian immigrants in cyberspaces, *Journal of National identities*, 50,187-205.

¹⁴ Barcus, Holly R., and Stanley D. Brunn. 2010. "Place Elasticity: Exploring a New Conceptualization of Mobility and Place Attachment in Rural America." *Geografiska Annaler: Series B, Human Geography* 92 (4): 281–95.

¹⁵Per Gustafson addressed, in his chapter on place attachment and mobility, how mobility increases the possibilities of developing dual or multiple dwellings; all forms of mobility indeed contribute to the formation of emotional, cognitive and behavioural bonds between people and places. Citing: McIntyre, Norman, Daniel Williams, and Kevin McHugh. 2006. *Multiple Dwelling and Tourism: Negotiating Place, Home and Identity*. CABI.p.19-20.

Place-experience and absent-yet-present factors involved

In the light of the pervasiveness of new media technologies, understanding that place-experience is not limited to defined boundaries with fixed borders and could be perceived in relation to other peoples and other places is more palpable. Place:

*“becomes less about our origins on some singular piece of blood soil, and more about forming connections with the many sites in our lives. Place become less an absolute location fraught with tribal bonds or nostalgia, and more a relative state of mind that one gets into by playing one’s boundaries and networks. We belong to several places and communities, partially by degree, and in ways that are mediated.”*¹⁶

Place-experience as a complex concept is a well-consolidated topic, discussed by many scholars from environmental psychology to architects such as Christian Norberg Schulz. *With few exceptions, discourses related to place-experience do not deliver the essence of the state in which social media enters urban experiences.* Since the impact of new media technologies becomes increasingly pronounced in the present, studies on place-attachment and place-experience, while largely covering other (personal, physical, social, psychological) aspects of place-experience, have negotiated less the impacts of new forms of mediation and their effect on place-relation and place-experience.¹⁷

In the following, my aim is to address that oversight, addressing the necessity of embracing the changes in relations between new social media technologies and the matter of place-experience through discussing the potentials of the representational medium (supported by the evidence provided by the case study of Foursquare) and thus to capture the complexity of this juxtaposition.

Place-experience has never been only about physically present entities; like objects or elements of space or qualities of the built environment, there are many *absent-yet-present* factors involved in place-experience (such as personal/individual factors, personal memories/realization, cognitive factors, psychological/emotional factors, as well as collective factors, social and collective values, etc). Relevant to the discussion, place-experience relates to social values that a user carries once s/he is encountering the place, or that are embedded/layered in place¹⁸ that could be revealed or revalued by new media technologies.

There are a number of absent-yet-present factors that have an impact on place-experience, some of which are affected by new media technologies: social/collective place-attachment is one of those. By referring to these absent factors, this chapter makes links between how new media technologies can become integrated into place-experience, by arguing that place-experience—as an assemblage of individual and collective memories, experiences, ideas, dialogue and technology¹⁹—is challenged by accommodating new media technologies, and in particular, with the accommodation of representational medium.

The experience of place—whether it is an outdoor urban experience or an indoor daily activity—is now affected by social media platforms, and thus by the presence of physically absent people and their memories, intentions, expectations, activities. Media platforms provide and maintain connections to people who might not be in the same proximity, but whose presence is important, and maintaining connection to them on a daily basis makes a difference (such as a family member, friends, a partner). Additionally, users of such applications can also constantly be in contact with people and communities who might share similar interests, values, and

¹⁶ Italic to emphasize. McCullough, Malcolm. “On the Urbanism of Locative Media.” *Places: Forum of Design for the Public Realm* 18.2 (2006): 26–29. Print.//accessed at <http://escholarship.org/uc/item/84x6m3nf#>

¹⁷Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge

¹⁸Thwaites, Kevin. 2001. “Experiential Landscape Place: An Exploration of Space and Experience in Neighbourhood Landscape Architecture.” *Landscape Research* 26 (3): 245–55. doi:10.1080/01426390120068927.

¹⁹Eckardt, Frank, Jens Geelhaar, and Laura Colini, eds. 2008. *MEDIACITY. Situations, Practices and Encounters*. Berlin: Frank & Timme GmbH.p.137

expectations and thus through sharing anxieties, desires, expectations and satisfaction affect the experience of places.²⁰

Social/collective place-attachment

The social/collective aspect of place-attachment is the one factor that could link social media platforms to place-attachment and place-experience. The aim of the discussion in this section, and in the case study more broadly, is not to delineate the concept of place-attachment per se, but to examine some of the theories of place-attachment in which the core discussion places more emphasis on collective aspects of place-attachment, and which will in turn support the analysis of how social-media platforms contribute towards developing a sense of new places, and stress the importance of place-attachment in mobile society.²¹

Place-attachment is a complex concept, with many cognitive factors involved, individual/subjective aspects, place interactions, place-dimensions, senses of place,²² and many other factors and processes. Based on the framework offered by Scannell and Gifford (2010), the three categories defining place attachment are personal, psychological and physical dimensions of place, and in those three categories, collective/social factors are significant and defining.²³

The social/collective aspect of place-attachment is significant as a constructive factor to build a sense towards places through communally shared values and interests. Human geographer Relph addressed how the *sense of place is constructed through shared symbolic beliefs and values that communities and groups of people hold*.²⁴ It is constructed collectively, where even in the person(al) dimension of place-attachment, it is still *collectively influenced*.²⁵ Human psychologists Low, Setha and Irwin Altman also place an emphasis on community and collective aspects of place-attachment that bond groups or individuals to their environments.²⁶ Community serves a meaning-making function in how a person develops a sense towards places,²⁷ and the image and senses that we develop towards a place are socially constructed: not only is it the product of personal interaction but more than that is socially structured.²⁸ Social values that are collectively constructed affect users of community even at individual levels.

Media, by revealing the untold stories of places, or by revealing communally shared images of places, affect an individual's realization of those places. The sense we develop towards a place relates to knowing/realization about a place, or, in other words, to the amount of knowledge a person might have accumulated either

²⁰An example of location-based artworks that explores and builds modes of communication networks within the neighborhood, people and their interests, is: Social Tapestries, developed in the UK by The Probosci Organization. In their explanation of the project they noted the aim as exploring the potential benefits of local knowledge-mapping and sharing for users of the same neighborhood. [Http://socialtapestries.net](http://socialtapestries.net)

²¹Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge.p.42.

²²For more discussion, Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge.

²³Scannell, Leila, and Robert Gifford. 2010. "Defining Place Attachment: A Tripartite Organizing Framework." *Journal of Environmental Psychology* 30 (1): 1–10.

²⁴Relph, E. C. 1976. *Place and Placelessness*. Pion Limited.p.

²⁵Scannell, L., and Gifford, R.2010, Defining place attachment: A tripartite organizing framework. *Journal of environmental psychology*24(4),517-550.

²⁶Low, Setha M., and Irwin Altman. 1992. "Place Attachment." In *Place Attachment*, edited by Irwin Altman and Setha M. Low, 1–12. *Human Behavior and Environment* 12. Springer US. http://link.springer.com/chapter/10.1007/978-1-4684-8753-4_1. *Journal of Environmental Psychology* 21 (3): 233–48.doi:10.1006/jevps.2001.0226.

²⁷Scannell, Leila, and Robert Gifford. 2010. "Defining Place Attachment: A Tripartite Organizing Framework." *Journal of Environmental Psychology* 30 (1): 1–10.

²⁸Maria Lewicka,2008, Place attachment, place identity, and place memory: Restoring the forgotten city past, *Journal of Environmental Psychology* 28 (2008) 209–231, P.212.

personally or collectively.²⁹ This is exactly where local knowledge or shared information within a community of users (a virtual community)³⁰ becomes an important factor to enrich both place-experience and place-attachments. Awareness of a place's history (knowledge of place) intensifies place-attachment.³¹ By delving into what lies beneath the surface, and expanding on the personal/collective realization and strengthening relation to places through other people's points of view and others' stories, media provides a mechanism for sharing local histories and knowledge. It reconstructs collective and individual memory and thus integrates into constructing or altering bonds to places.³² Fazel and Rajendran 2015,³³ through the concept of *image of place*, discuss how a community of users in virtual mediums becomes a *source of local knowledge*. The local knowledge that is relocated within virtual communities of users,³⁴ who share similar threads, interests and concerns for the same places³⁵ (e.g. social media platforms), can influence the construction of identity and image of place that is likely to be collectively constructed.³⁶ Communities could be independent of physical place but still, through developing "some forms of social life [bonds]"³⁷ and through introducing, or super-imposing, values interact and affect aspects of social/collective place-attachment.³⁸

What has been discussed so far is the significant role that the social/collective aspect of place-attachment plays in linking between concepts of new media technologies, place-experience and place-attachment. By addressing that place-attachment is socially constructed, and does not necessarily need to be grounded in place itself, I moved on to address how new media technologies impact on conventional theories of place-attachment and place-experience foremost through offering multi-ties, and through helping to maintain bonds to places of origins (or to community with the same interest and community of the same place).³⁹ Additionally, they are effective in terms of establishing new bonds or relations to places. As explained, those media could potentially alter personal relation to new places, mainly through developing an interest in a place: through enabling new realization of places; and sometimes through revealing the history of place or through collective understanding of places.

So far, the first factor, *social/collective place-attachment*, has been discussed as a linking concept, helping to explain how new media technologies affect place and place-experience. In the following, the second factor,

²⁹Maria Lewicka, 2008, Place attachment, place identity, and place memory: Restoring the forgotten city past, *Journal of Environmental Psychology* 28 (2008) 209–231, P.211.

³⁰Virtual communities, according to Rhingold, "are social aggregations that emerge from the Net when enough people carry on[...]public discussion long enough, with sufficient human feelings, to form webs of personal relationship on cyberspaces". Skop and Adams discussed how the internet can provide a sense of togetherness, engagement in cultural tradition and exchange of in-group information in a short a sense of place. Cited in Skop and Adam, 2009, creating and inhabiting virtual places, *Indian immigrants in cyberspaces, journal of National identities*, 50,187-205

³¹Maria Lewicka, 2008, Place attachment, place identity, and place memory: Restoring the forgotten city past, *Journal of Environmental Psychology* 28 (2008) 209–231, P.211.

³²I discussed through the case study of Foursquare how new media technologies are becoming a significant mechanism framing the way people develop a *sense of* as well as *expectations towards* places mainly by developing an image/identity of place, constructed from bits of information (Narbs) shared communally within virtual mediums.

³³Fazel, Maryam, and Lakshmi Priya Rajendran. Priya Rajendran. 2015. "Image of Place as a Byproduct of Medium: Understanding Media and Place through Case Study of Foursquare." *City, Culture and Society*. Accessed January 17.

³⁴Community is comprised of the social relations and informational exchanges that bind them together, Cited at Routledge. 2014. 'The Public Space of Social Media: Connected Cultures of the Network Society (Hardback) - Routledge'. Text. Accessed May 9. <http://www.routledge.com/books/details/9780415635233/>.

³⁵Nikolay Mihaylov and Douglas D. Perkins, Chapter 5, community place attachment and its role in social capital development, in *Place attachment*, edited by Lynne C. Manzo and Patrick Devine-Wright, 2014, Routledge.

³⁶ Related evidence is provided through the case study of Streetmuseum, in the author's PhD thesis, where she discusses how knowing about the history/cultural aspects of a place is shown to strengthen the bonds and associations of users to a particular place.

³⁷Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge, p.68

³⁸ Cited in: Scannell, Leila, and Robert Gifford. 2010. "Defining Place Attachment: A Tripartite Organizing Framework." *Journal of Environmental Psychology* 30 (1): 1–10.

"Defining Place Attachment: A Tripartite Organizing Framework." *Journal of Environmental Psychology* 30 (1): 1–10.

³⁹Maria Lewicka, 2008, Place attachment, place identity, and place memory: Restoring the forgotten city past, *Journal of Environmental Psychology* 28 (2008) 209–231, P.211.

mediated social co-presence, will be discussed. Firstly, discourse on presence and mediated presence will be set out. Then, through the case study, I will further articulate how social media (social co-presence) has contributed to the experience of physical place through representational mediums, where theories of social presence and mediated presence are in close connection with theories of place-attachment (sense of place).

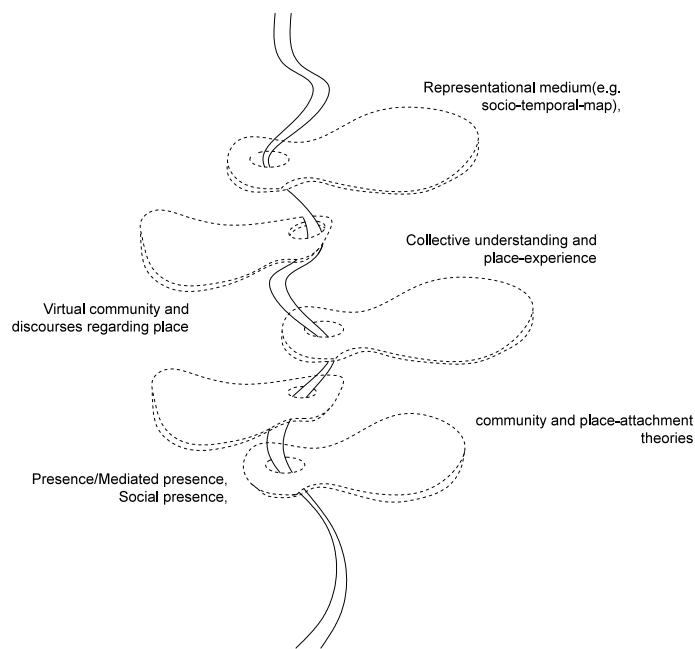


Fig. 5.1 The figure shows the interconnected concepts required to study implications of locative media on place-experience. The concepts of mediated social co-presence, virtual community, representational medium, collective/social aspects of place-attachment, and place-experience are a set of interconnected concepts that are all in play when studying how social media enters into place-experience.

Developing the concept of ‘mediated social co-presence’

Issues of present/absent embodiment/disembodiment are issues in the core of dominant strands of computer-mediated communication.⁴⁰ Presence in computer-mediated communication is generally defined as a user’s subjective sensation of “being there” in a scene portrayed by a medium.⁴¹ Presence has been variously described as “personal subjective feeling”, a “mental manifestation”, a (general) “existential phenomenon”, a “cognitive state” consistent with a sense of “being there” in an environment, or, as is addressed by Barfield et al (1995), as a state that results from attending to and evaluating incoming sensory information.⁴²

The term *co-presence*, on the other hand, was introduced by Goffman (1963) to define a sense of being together in a mediated environment where individuals become “accessible, available, and subject to one

⁴⁰Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge, p.13

⁴¹Barfield et al, 1995, Cited in Lessiter, et al 2001. “A Cross-Media Presence Questionnaire: The ITC-Sense of Presence Inventory.” *Presence: Teleoper. Virtual Environ.*10 (3): 282–97. doi:10.1162/105474601300343612.

⁴²Barfield et al, 1995, Cited in Lessiter, Jane, Jonathan Freeman, Edmund Keogh, and Jules Davidoff. 2001. “A Cross-Media Presence Questionnaire: The ITC-Sense of Presence Inventory.” *Presence: Teleoper. Virtual Environ.*10 (3): 282–97. Also see, Draper et al, 1998, where they described presence in the context of telepresences, “the perception of presence within a physically remote or simulated site,”, Cited in Ghaoui, Claude. 2006. *Encyclopedia of Human Computer Interaction*. Idea Group Inc (IGI).

another”.⁴³ Nowak defined it as a sense of being together and focused more on “psychological connection of minds”.⁴⁴ Co-presence is distinguished from social presence in that while *social presence relates to the quality of the medium (users’ perception of medium)*, *co-presence addresses more the psychological interaction of the individuals*.⁴⁵ Social presence is understood as the degree to which a person is perceived as “real” in mediated communication. In other words, social presence relates to whether participants feel they are interacting with real people when they are online: “social presence refers to the degree to which a person is perceived as a ‘real person’ in mediated communication”.⁴⁶

The concept of social presence was first coined to focus on face-to-face interaction. But it has gradually shifted from its original concept (introduced by Short, Williams, and Christie, 1976), becoming a concept that integrates qualities of medium (such as a “medium’s capacity for immediate feedback, the number of cues and senses involved, personalization”).⁴⁷ Moving from a purely subjective and embodied concept towards one that accommodates aspects of medium, social presence is sometimes defined as a subjective feeling of being connected to others or with a group during *mediated communication*.

Bulu (2012), stresses that the *level of social presence increases as the quality of communication increases*: from written text-based media to mediums that incorporate visual aspects and ultimately to face-to-face media.⁴⁸ This observation is true in the case of Foursquare where developers, by incorporating a map (as a visual medium) into the interface design, increased the level of communication. I argue that one of the main reasons this application is more practical compared to other social media applications is due to accommodating the medium of the map to represent social presence, which consequently facilitates more complex levels of presence and flexible modes of sociability (this will be discussed in more detail below). Social presence⁴⁹ has been proved to have relations to user’s feelings of satisfaction: studies in a computer-mediated communication have demonstrated that social presence is a significant predictor of students’ satisfaction in online learning (Cobb;⁵⁰ Bulu et al⁵¹). Users who communicate through the medium without feeling that the medium obstructed their interaction tend to develop more intimate interactions and feel the psychological togetherness in virtual worlds and thus are more satisfied.⁵² Feelings of intimacy⁵³ and closeness⁵⁴ are other important

⁴³Bulu, SaniyeTugba. 2012. “Place Presence, Social Presence, Co-Presence, and Satisfaction in Virtual Worlds.” *Comput. Educ.* 58 (1): 154–61.

⁴⁴Nowak, Kristine. 2001. “Defining and Differentiating Copresence, Social Presence and Presence as Transportation.” In *4th Annual International Workshop, Philadelphia, Rettie, R.M., 2003, A Comparison of Four New Communication Technologies, Proceedings of HCI International Conference on Human-Computer Interaction, Lawrence Erlbaum Associates*, 686–90.

⁴⁵Ibid. 686–90.

⁴⁶Cited in Ghaoui, Claude. 2006. *Encyclopedia of Human Computer Interaction*. Idea Group Inc (IGI). Also see, Tu and McIssac, 2002, defined online social presence for online learning environments as: “the degree of feeling, perception, and reaction of being connected via computer-mediated communication to another intellectual entity”. Cited in Ghaoui, Claude. 2006. *Encyclopedia of Human Computer Interaction*. Idea Group Inc (IGI).

⁴⁷Bulu, SaniyeTugba. 2012. “Place Presence, Social Presence, Co-Presence, and Satisfaction in Virtual Worlds.” *Comput. Educ.* 58 (1): 154–61. doi:10.1016/j.compedu.2011.08.024.

⁴⁸(Lombard & Ditton, 1997, cited in, SaniyeTugba Bulu a,b, *Computers & Education 58 (2012) 154–161 Place presence, social presence, co-presence, and satisfaction in virtual worlds)

⁴⁹Social presence also refers to the degree to which a learner *feels personally connected* with other students and the instructor in an online learning community. Cited in Lessiter, Jane, Jonathan Freeman, Edmund Keogh, and Jules Davidoff. 2001. ‘A Cross-Media Presence Questionnaire: The ITC-Sense of Presence Inventory’. *Presence: Teleoperators and Virtual Environments* 10 (3): 282–97. doi:10.1162/105474601300343612.

⁵⁰Cobb, S. C. 2009. Social presence and online learning: a current view from a research perspective. *Journal of Interactive Online Learning*, 8(3), 241–254.

⁵¹Bulu, SaniyeTugba. 2012. “Place Presence, Social Presence, Co-Presence, and Satisfaction in Virtual Worlds.” *Comput. Educ.* 58 (1): 154–61.

⁵²It also addressed how students who have a higher tendency to get involved in and focus on the common activities in real life also tend to feel present in the virtual environment.

⁵³DeGournay, 2002: pp. 201–204; Fox, 2006, p. 13. Accessed at (<http://firstmonday.org/ojs/index.php/fm/article/view/4954/3786>).

factors to consider when examining social presence in mediated communications.

So far, the various definitions of co-presence and social presence that have been introduced showcase the terms as popular and general yet practical when used within the domain of the mediated communication/environment. However, in this study a new term—*mediated social co-presence*—is coined to explain and highlight the significance of the representational medium in particular, to provide the feeling of being socially accompanied (socially co-present), while a user explores spaces of her/his locality (place-experience). This term is used to refer to new practices offered and is supported by new forms of communication and representation, in which a sense of co-presence is provided by mediating devices. This term helps to address socio-cultural aspects of mediated experience, where the social structure of a place is possibly experienced and practiced differently, through the use and presence of the representational medium.

Mediated social co-presence results from the development and adaptation of tracking systems coupled with accommodating the representational medium, where bodies can feel the presence of others through representational mediums (maps, notifications or text). The assemblage of corporeal bodies in physical spaces, accompanied by the mediated present, puts place and place-understanding *in relation* to other entities (people and places) making those understandings more relational and more dependent on medium: thus, this concept indirectly addresses relational understanding of place, a situation that I will discuss through the following case study.

Social media enters into the domain of urban space

Media is intertwined with social life, where “*it stands at the center of our experience*”.⁵⁵

Nowadays, we are getting used to being mobile users who experience presence in mediated formats. Mediated social presence as it is proposed here challenges accepted theories and issues related to place-experience and place-attachment, as will be further discussed through the case study.

Souza e Silva, A. de,⁵⁶ De Silva and Frith⁵⁷, and Gordon and De Silva⁵⁸ have all addressed issues arising when social (networking) media is brought into physical places, due to the shift in the interface’s relation to place: where the interface that used to be attached to a place (e.g. a computer in the corner of a room) has become mobile and detached (e.g. a mobile user). To understand how, through the displacement of a medium from being originally attached to a specific physical place to being attached to the body, results in developing new relations of agents with the site or changes the essence of the site from the viewpoint of the user, Meyrowit has argued that introducing media to the place could unbalance the traditional way that people come to know the place through social role and hierarchy.⁵⁹ It could affect the perceptual condition,⁶⁰ social interaction and patterns of behaviour on the site. In the previous chapter, through the concept of image of place, I addressed similar issues highlighted by Meyrowit, where new media technologies, and in particular locative media, challenge the conventional process through which people come to different realizations about places. In that

⁵⁴Gooch, Daniel, and Leon Watts. 2011. “Up Close and Personal: Social Presence in Mediated Personal Relationships.” In Proceedings of the 25th BCS Conference on Human-Computer Interaction, 227–36. BCS-HCI ’11. Swinton, UK, UK: British Computer Society. page:8, <http://dl.acm.org/citation.cfm?id=2305316.2305359>.

⁵⁵Souza e Silva, A. de, (2006), From cyber to hybrid: mobile technologies as interfaces of hybrid spaces, *Space and Culture*, 9(3), pp. 261–278. <http://sac.sagepub.com/cgi/content/abstract/9/3/261> Accessed:[13/06/2012]. De Silva and Souza e Silva, A. de both refer to the same author. The original name is represented in different formats in each article/conference papers. Since, It is easier to search and find the reference with the way the author has represented her name, I preferred to keep the original format.

⁵⁶De Silva, A. de, (2006), From cyber to hybrid: mobile technologies as interfaces of hybrid spaces, *Space and Culture*, 9(3), pp. 261–278. <http://sac.sagepub.com/cgi/content/abstract/9/3/261> Accessed:[13/06/2012].

⁵⁷De Silva and Frith(2010) refer to locative mobile social networks as (LMSNs).

⁵⁸Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons.

⁵⁹Meyrowit, J. 1986. *No Sense of Place: The Impact of Electronic Media on Social Behavior* New York: Oxford University Press, p275_308.

⁶⁰Massumi B., 2003, *Urban appointment : a possible Rendez vous with the city*, http://www.extrememediastudies.org/extreme_media/4_reading/pdf/Urban_Appointment.pdf

discussion, representational mediums become socio-spatial tools for knowing/recognizing/re-valuing places through interpersonal/inter-subjective values/narratives, or what Mark C. Marino referred to as polyphonic narratives.⁶¹ Green similarly articulated the same issue, by saying: “The current explosion in media technologies and telecommunication influences the geographical/spatial practices and affects the social regulation and subjective experience of time and space”.⁶² Green, while articulating some implications of mobile media in terms of reconstructing time-space temporalities, addressed how mobile temporalities are emerging that offer new ways of acting in and perceiving everyday social practices.

I want to underline here the issue that, by a change in the interface’s relation to place, new engagement with media, new forms of practice and socio-cultural understandings of place/space have emerged. Richardson asserts that there is enough evidence of a move towards more flexible forms of engagement with media environments to show that network-related practices have already entered the domain of urban spaces.⁶³ In her study of mobile phone and other forms of wearable media, she explained that this format of interaction, where an individual has increased interaction with a physically distant world, calls for a re-imagination and re-articulation of corporeality and materiality, and a need to “think through other ontologies, other ways of being-in-the-world, [...] being-with-equipment”.⁶⁴ She also argues that new media technologies alter the shape and meaning of community, spatial location and our embodied selves. The change in interface relation to place has also challenged the distinctions between public/private interactions.⁶⁵ Similarly, Tierney pointed to the disruption of public/private issues, saying that as “social media platforms become increasingly entangled with everyday interactions, it is becoming more difficult to segregate public practices into discretely bounded spheres or spaces”.⁶⁶ Social media “produces and perpetuates public spaces through interaction, participation and user generated content”.⁶⁷ Tierney asserts that social media takes diverse forms and serves diverse ends depending upon the “collective imaginary of users”, and that this in return imposes “agency and effect”.⁶⁸

Addressed in Chapter 3, and discussed by Tierney (2013), the effects of social media could swing between being platforms only providing social portable community (transient portable communities that support each other/ considered devices that frame our expectations of what is real⁶⁹ /what is valuable) to a mechanism that moves agents/people in space (Fig. 5.2).⁷⁰ Tierney highlighted how the flexibility of adaptation (of media) is essential to understand the critical contribution of social media to the production of alternative public spaces. “The flexibility creates a resilient public sphere [...] a full spectrum of expressions with varying levels of engagement and intimacy”.⁷¹

As Tierney and others already mentioned, there is evidence of a move towards more *flexible forms of*

⁶¹ Polyphonic narratives refer to inclusion of many voices in a work of writing or in act of storytelling, where all are given equal values/status. Cited in Farman, Jason. 2013. *The Mobile Story: Narrative Practices with Locative Technologies*. Routledge.p.290.

⁶² Green, Nicola. 2002. “On the Move: Technology, Mobility, and the Mediation of Social Time and Space.” *The Information Society* 18 (4): 281–92, p.281.

⁶³ Richardson, Ingrid. “FCJ-032 Mobile Technosoma: Some Phenomenological Reflections on Itinerant Media Devices.” Accessed December 10, 2012. <http://six.fibreculturejournal.org/fcj-032-mobile-technosoma-some-phenomenological-reflections-on-itinerant-media-devices/p.32>.

⁶⁴ Ibid.

⁶⁵ Ibid.p.1.

⁶⁶ Tierney, Therese. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge, 2013.p.96.

⁶⁷ Ibid.p.99

⁶⁸ Richardson, Ingrid. “FCJ-032 Mobile Technosoma: Some Phenomenological Reflections on Itinerant Media Devices.” Accessed December 10, 2012. <http://six.fibreculturejournal.org/fcj-032-mobile-technosoma-some-phenomenological-reflections-on-itinerant-media-devices/p.96>.

⁶⁹ (Nazar Alsayyad,2006,cinematic urbanism: a history of modern city from reel to real cited at Therese F.Tinery,2014, P.33)

⁷⁰ Tierney, Therese. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge, 2013, p.98–99.

⁷¹ Ibid..pp. 98,99.

engagement with media environments.⁷² There are various issues and outcomes that could be discussed as a result of media entering into the domain of everyday life; for instance, new forms of social interaction, new formats of cartography, flexible forms of engagement with media environments, different forms of perceiving and understanding place (image of place), and so on, which are all examples that involve the juxtaposition of social media (and their representational medium) with urban place. In the case study that follows, some of these impacts—such as relational understanding of place as a consequence of mediated social-co-presence—will be discussed.

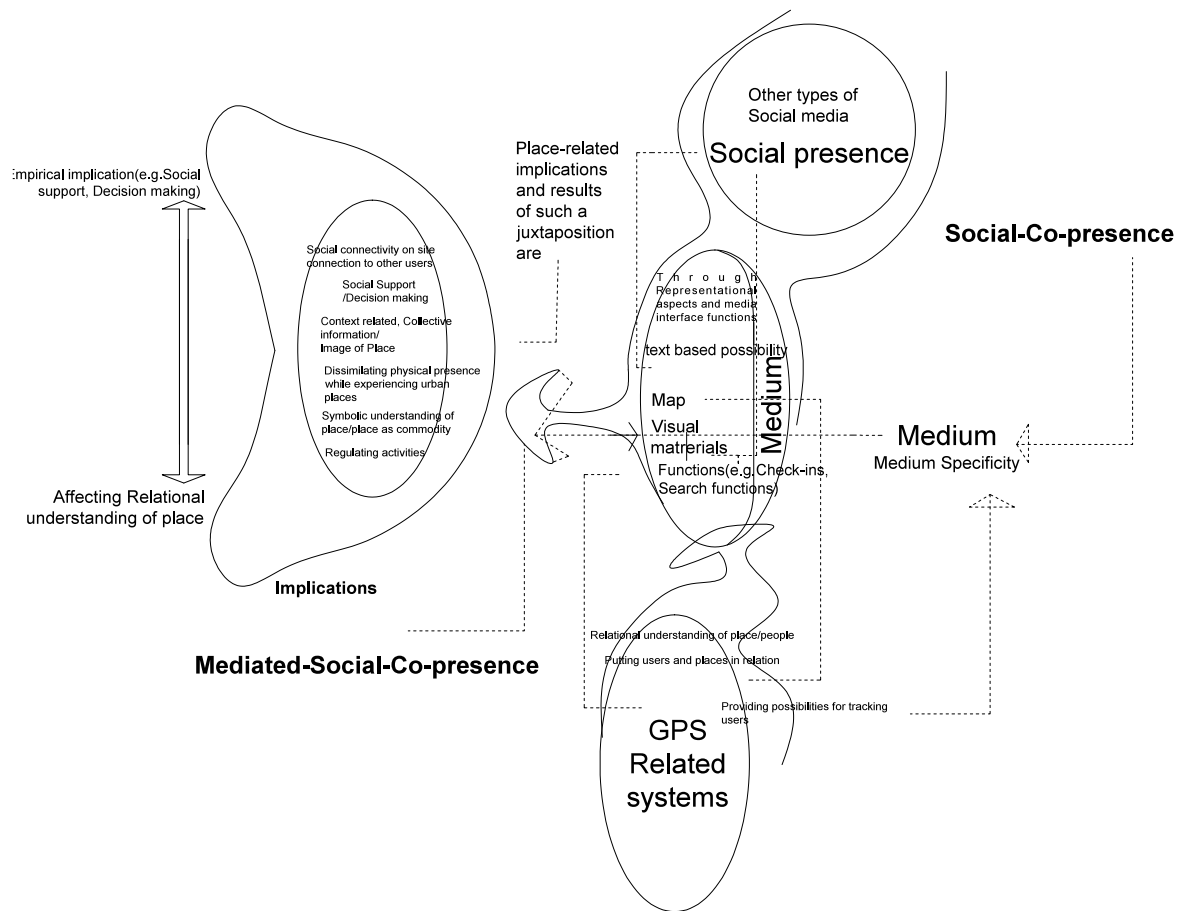


Fig. 5.2 The Figure shows various implications of social media communication and various modes that social media uses to communicate with everyday spaces. The implication and effects of media could stretch across a spectrum of empirical and everyday functions (e.g. decision-making, meeting arrangements, finding friends' locations) or providing space for social reflection of everyday practices (e.g. discussing our personal issues with social groups or discussing neighbourhood issues in forums, or seeking solutions) towards altering socially and culturally the everyday environment through influencing actions of agents framing our expectations of what is real or affecting our frames of understanding.

⁷²Richardson, Ingrid. "FCJ-032 Mobile Technosoma: Some Phenomenological Reflections on Itinerant Media Devices." Accessed December 10, 2012. <http://six.fibreculturejournal.org/fcj-032-mobile-technosoma-some-phenomenological-reflections-on-itinerant-media-devices/p.32>.

Highlighting the gap

Studies on place-attachment and place-experience are largely settled discourses that have been discussed by scholars from different disciplines (Lowak,⁷³ Manzo and Devine-Wright,⁷⁴ and Scannell and Gifford⁷⁵) but mainly from human geography, environmental psychology and urban studies perspectives. Similarly, social presence, co-presence and theories related to these subjects are established discourses. Social media, and the role of medium and the effects of medium-specificity to create flexible interactions, are discussed by scholars such as Richardson,⁷⁶ Lombard and Ditton,⁷⁷ Tierney,⁷⁸ De Silva, and others. But there is a relatively small body of literature that attempts to focus on the impacts of locative media technologies, social media and the presence of social media on place-experience. What is relatively new and needs more study is the situation formed by social media applications entering daily places, that brings the theory of social co-presence into closer connection with theories of place-experience (sense of place) and place-attachment.

In line with studies concerned with diverse forms of sociability and the influential role that the medium plays in this, I want to discuss aspects of the social media, and the representational medium, that supports those forms of sociability. By addressing the *capabilities of representational medium in altering the perceptions of presence which also enable more flexible and diverse forms of sociability*,⁷⁹ the aim, besides grasping the essence of changes taking place in our contemporary situation within which social media technologies are actively involved in the interconnected practices of place-experience and place-attachment, is to discuss some consequences of those forms of sociability, and their relation to place-experience and place-attachment, and further examine some socio-cultural implications and consequences of that juxtaposition of social media with place that is enabled through accommodating the representational medium.

Similar studies

The number of people using social network services (SNS) is increasing rapidly, and they tend to provide social supports not only for friends and family but also for somebody who is not known to the user in the real world;⁸⁰ Tierney studied Facebook, and addressed how asking for advice, suggestions and opinions from people in a short time was a supportive mechanism that makes online interactions of social media effective.⁸¹ People frequently share short pieces of contextual information to give advice, to comfort each other, or receive information from strangers, or to bring anonymous users together to solve some problems.⁸² Based on a similar study on Facebook done by Cheung et al., with the objectives of understanding student use of this social networking site, *social presence* emerged as the most important factor that determines students' usage of

⁷³Maria Lewicka, 2008, Place attachment, place identity, and place memory: Restoring the forgotten city past, *Journal of Environmental Psychology* 28 (2008) 209–231, P.211.

⁷⁴Manzo, Lynne C., and Patrick Devine-Wright, eds. 2013. *Place Attachment: Advances in Theory, Methods and Applications*. London ; New York: Routledge.

⁷⁵Scannell, Leila, and Robert Gifford. 2010. "Defining Place Attachment: A Tripartite Organizing Framework." *Journal of Environmental Psychology* 30 (1): 1–10.

⁷⁶Richardson, Ingrid. 2012. "FCJ-032 Mobile Technosoma: Some Phenomenological Reflections on Itinerant Media Devices." Accessed December 10. <http://six.fibrejournal.org/fcj-032-mobile-technosoma-some-phenomenological-reflections-on-itinerant-media-devices/>.

⁷⁷(Lombard and Ditton, 1997, cited in, SaniyeTugba Bulu a,b,**Computers & Education* 58 (2012) 154–161 Place presence, social presence, co-presence, and satisfaction in virtual worlds)

⁷⁸Tierney, Therese. 2013. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge.(main case study is Facebook)

⁷⁹Ibid.

⁸⁰Java A, Xiaodan X, Finin T, et al (2007) Why We Twitter: Understanding Microblogging Usage and Communities, *Proceedings of the Ninth WEBKDD and First SNA–KDD Workshop on Web Mining and Social Network Analysis*, pp. 56–65.

⁸¹Tierney, Therese. *The Public Space of Social Media: Connected Cultures of the Network Society*. New York: Routledge, 2013.p.89.

⁸²Boyd, D., Golder, S., Lotan, G., 2010. Tweet, Tweet, Retweet: Conversational Aspects of Retweeting on Twitter. Paper presented at the 43rd Hawaii International Conference on System Sciences.

Facebook.⁸³ They discussed how most people use Facebook to get instant communication and connection with their friends and learn about social events, parties and other events.

Different from Facebook, the outline of the medium of Foursquare is designed in a way that encourages users to share location-related information, and additionally to share their physical location (*presence*) through check-ins. Thus the main purpose/focus is information related to location, spread between users. In contrast, for Facebook, focus is shifted from presence to *networking/relationship*, and thus *relationship* is defined as the main building block.⁸⁴ Even though Facebook does have the function of sharing location (*presence*), because the main theme of that application is different, users do not feel obliged to share their check-ins and the act of checking in is not an indicator or signifier of their being active in that sphere. Figure 5.3 shows and compares building blocks defining four main social media applications, including Facebook and Foursquare.

The reason that checking in becomes an active action for users of this app is due to both *the outline of the application (visual aspects)*, in that it is designed in a way that encourages users to share their physical location, plus the functional aspect, which is associated with awarding tactics that encourage users to share their physical location with others (e.g. mayorship and badges). Thus for users of the application, based on design strategies resulting in the interface design on screen, sharing experience with others becomes a crucial aspect of the experience of reality. (The user can check in when at a place, or before or after.) The more users exist within the sphere of the application, the more they feel committed to disseminating their being with others. Being part of a group (a virtual community) develops particular meanings, expectations and norms of behaviour for users of this application.

⁸³Cheung, Christy M. K., Pui-Yee Chiu, and Matthew K. O. Lee. 2011. 'Online Social Networks: Why Do Students Use Facebook?' *Computers in Human Behavior* 27 (4). Social and Humanistic Computing for the Knowledge Society: 1337–43. doi:10.1016/j.chb.2010.07.028.

⁸⁴Based on a study done by, there are 7 blocks defining social media applications and the difference between application mainly results from which block they mainly focus on. Those 7 blocks are: **Presence, sharing, conversation, relationship, group, reputation, and identity**. Kietzmann, Jan H., Kristopher Hermkens, Ian P. McCarthy, and Bruno S. Silvestre. 2011. 'Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media'. *Business Horizons* 54 (3). SPECIAL ISSUE: SOCIAL MEDIA: 241–51.

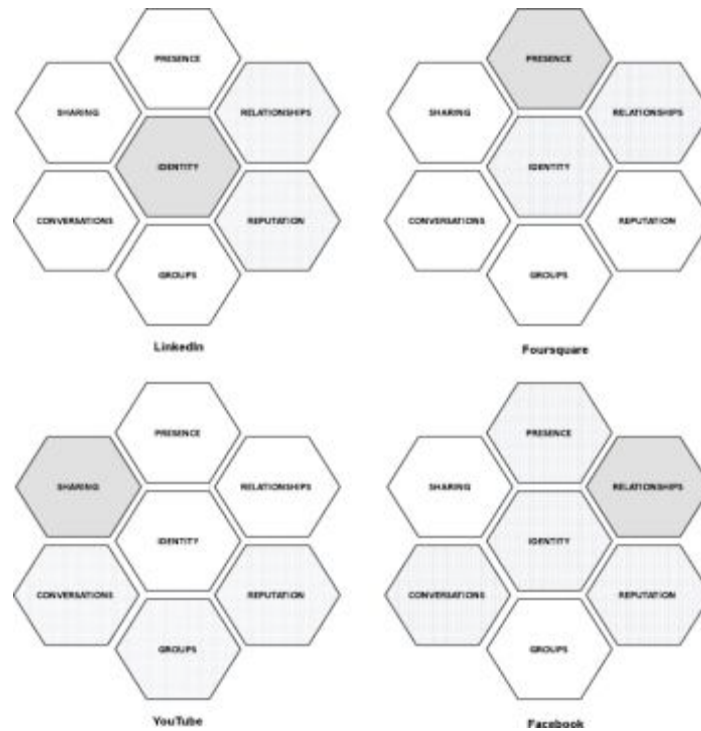


Fig. 5.3 The figure shows different building blocks of social media applications. Presence, sharing, conversation, relationship, group, reputation, and identity, are considered the main building blocks defining social media applications; however, the focus on each of these blocks differs from one application to another. For example, Facebook is built around and focuses on relationship, whilst Foursquare is centred around presence (represented by check-ins). Reproduced from Kietzmann et al, 2011, in: ‘Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media’. *Business Horizons* 54 (3). Special issue: social media.p.248.

Previous research has examined the ways people have used locative media to re-engage with social spaces. Lee Humphreys in his study of Dodgeball shows how a new urban explorer uses the application as a way of filtering unwanted encountering;⁸⁵ as a tool/tactic to navigate space/territories. This specific form of usage was also true for Foursquare (this aspect was partly explored in the previous chapter and some other evidence will also be provided here, in the sections that follow).⁸⁶

Frith (2013) studied Foursquare from the users’ point of view and focused on mayorship and badges. He observed and analyzed how people may make mobility decisions because of Foursquare usage, and addressed the impacts of application as a filtering tool that influences personal mobility⁸⁷ and the ways in which people decide about their mobility actions (i.e. whether to visit a friend or avoid unwanted encounters mainly through other users’ check-ins). Lindqvist et al (2011) studied Foursquare as a socially driven application both qualitatively and quantitatively. They examined users’ patterns of use and privacy concerns, and focused on how users manage those concerns.⁸⁸ In their research on Foursquare, they found many reasons (expected and unexpected) as to why people use Foursquare, some of which are supported by this study, such as check-in as a

⁸⁵ Humphreys, Lee. 2007. “Mobile Sociality and Spatial Practice: A Qualitative Fieldstudy of New Social Networking Technologies.” *Dissertations Available from ProQuest*, January, 1–298.

⁸⁶ Through Dodgeball (as well as Foursquare), by becoming aware of the location of friends and colleagues (through their check-ins), users could have the empowerment to avoid undesirable possible face-to-face contact, to ignore or highlight spaces, people or possible interactions.

⁸⁷ Frith, Jordan. 2013. “Turning Life into a Game: Foursquare, Gamification, and Personal Mobility.” *Mobile Media & Communication* 1 (2): 248–62.

⁸⁸ Lindqvist, Janne, Justin Cranshaw, Jason Wiese, Jason Hong, and John Zimmerman. 2011. “I’M the Mayor of My House: Examining Why People Use Foursquare - a Social-Driven Location Sharing Application.” In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2409–18. CHI ’11. New York, NY, USA: ACM.

form of presenting self/co-ordinating with friends. From a slightly different angle, Gazzard studied *Foursquare* and *Layer* as examples of locative media game applications. She discussed our general understanding of mapping and how the conventional forms of mapping are evolving through user-generated input.⁸⁹

Following those studies, by focusing on representational medium (maps in particular), I will empirically examine how and argue that mapping in its new format provides relational understandings of places (meaning it changes our conventional frames of understanding); and, moreover, it offers flexible forms of sociability.

Adopted methodology

Here, I will discuss some aspects of the methodology that are specific/explicit to the current discussion. Whilst the overall methodology for both Chapters 4 and 5 is the same, in each chapter, based on the discussion, I highlight particular aspects of the methodology that are more constructively relevant and supportive for developing each discussion. In the previous chapter I represented screen shot data collection as the main part of the conducted method that enabled me to outline/construct the concept of image formation. Here, since developing the concept of mediated social co-presence is the ultimate purpose, semi-structured interview/questionnaire/visualizations of check-ins were more helpful to deliver the issues related to mediation/presence/interactions. In order to investigate the importance of the communication and sharing of users' location and the significance of medium in transferring the feeling of social co-presence, besides studying the visual aspects of the representational medium (maps and check-ins), I conducted questionnaires and semi-structured interviews with active Foursquare users (I define active users as those who have more than 200 check-ins in their account, plus more than 5 badges). This way of defining an active user narrowed the spectrum, but ensured that the recruited users had already become familiar with the functions/features of the application.

As mentioned in the previous chapter, the study, besides observing random users' check-ins and comments, and by following their online interactions, also focused on and involved interviewing nine participants to gather rich data. I will refer to these participants as P1–P9. The frame of enquiry designed by Lindqvist et al⁹⁰ was adapted for the purposes of this qualitative study. Throughout the interview, participants were asked to fill in and then rank a set of definitions that mainly defined their experience and reasons for using the app (from the most to the least relevant). Interviews were then followed by 18 supplementary questions (see Fig. 5.4 below). Designed explicitly for the theme of the current discussion/chapter: ranking tables and supplementary questions help to provide more detailed understanding of the social implications of sharing physical location (whether the check-ins follows a user's everyday routine, if they communicate with others indirectly through check-ins, or if check-ins become a representation of something more than physical location). I asked participants about their reasons for checking in, and about how important the act of sharing physical location was for them. I also wanted to establish whether mediated social co-presence affected feelings of satisfaction or support, and what role the representational medium of the map plays for participants in terms of making them aware of their social/spatial surroundings.

Participants were also asked a series of questions that helped to develop understanding of their reasons for engaging with different features of the medium, and whether they feel satisfied to be in constant contact; whether they have any specific audience that they communicate with, at the time of presenting their location.

⁸⁹ Gazzard, Alison. 2011. "Location, Location, Location: Collecting Space and Place in Mobile Media." *Convergence: The International Journal of Research into New Media Technologies* 17 (4): 405–17.

⁹⁰ Lindqvist, Janne, Justin Cranshaw, Jason Wiese, Jason Hong, and John Zimmerman. 2011. "I'M the Mayor of My House: Examining Why People Use Foursquare - a Social-Driven Location Sharing Application." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 2409–18. CHI '11. New York, NY, USA: ACM.

The questionnaire was divided into 6 themes: communication and connection; defining personal reasons or motivations for using the app (such as if a user collects check-ins in order to keep track of the places she visits); the reasons for check-in in familiar/unfamiliar places; the values of check-ins; and a final category to help understand why people keep a track of check-ins and what they do if they forget to check in.

The questionnaire, along with the semi-structured interview, helped to reveal in more detail how users communicate through this medium, whether they feel different if they are in constant contact with others through this medium, and how important it is for them to be socially in contact with others while exploring new places. These main questions helped to provide an insight into how the accommodation of media possibly brings social co-presence into close connection with the experience of place.

The main focus was on patterns of communication between users and how they support each other through the possibilities offered by medium. Screenshot data collection⁹¹ was also applied as part of this case study, and that helped to gain relevant insights into a user's pattern of behaviour, issues of presence and mediation (mediated social presence). Screenshot data collection mainly captures close reading and close observation of users' behaviour. I collected artefacts (e.g. screenshots, text, images, etc.) from users over a period of time between mid-October 2013 and March 2014. The collected data then was transcribed, coded and used to examine the main concerns.

The other main method applied in this study was visualization through coding. I asked all participants to send their latest 25 check-ins 2 or 3 times over the course of the 3-month study, and in order to collect that data, they were asked to send a Kml link that contained their latest activity data (place name, longitude latitude and time). *Foursquare* only lets users get to their last 25 check-ins without asking for *API/access token*, and for accessing further and bigger numbers of check-ins, an API is required. To overcome that limitation and get more data from users, I asked them to send me an updated link two or three times, depending on how willing they were to respond to the call. Then all the collected data were used to draw a map of users' check-ins. Using the *Processing* program, users' daily usage of the application was visualized (Figs 5.10 & 5.11).

By visualizing the data into a diagram, the amount and intensity of use on a daily basis was represented. It was possible, through studying the data, to know which times of day users were more active. The findings from this part also explained how, for users of the application, their check-ins followed their everyday routine activities and their pattern of using spaces (this issue was confirmed by interviews). The act of checking in was a signifier of an attitude, activity or representative of a specific meaning (this will be discussed further in the Findings section which follows).

⁹¹ In this method, visual materials were collected from screenshots over the course of a five-month period (as discussed in the previous chapter). This method facilitates capturing the complexity of interaction and usage of the application by taking photos of users' comments/contact lists/uploaded images/check-ins, etc. Although this method of indirect interaction/observation was linked more directly to the aims of the previous chapter, it was still helpful to provide background knowledge for this chapter and its theme.

Name (not compulsory) :

Why People Use foursquare?

Please choose between options, the one/s that explains you and your motives of using the application more than the rest. If they are more than one, please rank them (rank them from the most to the least relevant).

	Social connection/ Social production of space	
	I use foursquare to show friends that I am available to hang out	
	I use foursquare to represent myself to others, saying where I am	
	I use four square to follow other's check ins and to know where they are	
	I use foursquare to coordinate with my friends	
	I use foursquare to keep track of all the places that I visit	
	I use foursquare to be in virtual space of real space,	
	I use foursquare to see if my friends are around	

	Personal interests	
	I use foursquare to track places that I visited	
	I use foursquare to collect points and become mayor	
	I think of foursquare as a game that I play not with others	
	I want to present myself by putting check in in places	
	I want to say I were there and show/share it with others,	
	I keep check in not to lose my mayorship	
	Mayorship is a possession	
	I use foursquare as a game that I play with people I do not know, and the goal is to keep your mayorship as long as you can,	

	Place/familiar places	
	I check into familiar places to see if friends are available	
	I check into familiar places to say I am available to hangout	
	I check into familiar places to show my routine of life	
	I check into familiar spaces to be a mayo/or keep it	
	I check into familiar places to collect badges	
	I check into familiar places to track all my check ins of places	
	I check into familiar places to encourage others to visit and I leave tips	

	Place/unfamiliar places	
	I checkin to show others where I have been,	
	I checkin because I feel I need to share the experience of being in place with others, that I care about	
	Place becomes an entity that I can share it with others	
	Place becomes an object/commodity that I can earn it through this activity	
	Place becomes an entity that could be experienced simultaneous with -absent- others,	
	Being in a place is equal to check in plus a tip	

Fig. 5.4 Themes of the questionnaire. Each theme concentrates on one aspect: social relation/connection, personal reasons, familiar places, unfamiliar places, value of check-in (if you check in and if you forget to check in).

	Value of check-in	
	Presenting of self/ representing our self	
	Presenting the place	
	Sharing the experience	
	A tool that shows- being in a place-	
	Check in as a way of collecting points	
	Check in matters for owning the mayorship	
	Check in matters for owning more badges	

	What do you feel if you forget to put check ins	
	Feel unhappy because you have not represented yourself	
	Feel you might have lost the chance to meet up with friends/hanging out with them	
	Feel unhappy because you care for badges	
	Feel unhappy because you care for mayorship	
	Feel unhappy because you wanted to keep track of all the places you visit	

1. The 3 main reasons of using the app
2. The time you started using the app
3. Numbers of people you communicate with
4. Most common places you check-in
5. Do you look for the tips people put? Do they affect the way you know about a place generally?
6. Why do you really check-in? what types of places do you prefer to check in?
7. Do you add new places? Why?
8. Has the reasons of using the app changed for you over time?
9. What other types of application(location based applications) do you use?
10. How often do you check in? How many times a day?
11. When do you normally use the app? Does it follow your every day routines?
12. How often you use map or other representational materials to find new places?
13. In process of finding a new place, what acts as more important factor for you, tips and comments, images, ranks, friends check-ins.
14. How important is deseminating your being in physical with others who are not copresent?
15. Does being socially in contact with people (people who are not corporally present) affect your experience of place?
16. Does it affects your feeling of satisfaction? Do you feel safe? Do you feel more intimacy? How different it is?
17. Do you have especial audience that you share your check-ins with? How important is desimintation of urself?
18. How different it is if you can share your experience with friends and family and if you cannot?

Fig. 5.5 The Figure shows the frames of enquiry: the questionnaire and its 18 supplementary questions

Findings

Overall two main findings were provided. In the first section that follows I present evidence that Foursquare enables alternative/flexible forms of sociability, with which I show new ways people manipulate the application to fulfil personal needs. I will provide evidence that accommodating a map into the visual/functional aspects of the representational medium offers alternative modes of sociability. In addressing alternative modes of sociability, I discuss how representational medium offers users the capacity to communicate, organize their interactions and make sense of their everyday activities in new and different ways: they can have in-group experiences, where friends and family members can experience being in relation to a group of people whilst being represented on a live map that potentially contains interesting information regarding their acquaintances' patterns of behaviour; through these alternative forms of sociability, the act of checking in conveys and represents different meanings such as users' lifestyles, a sign for showing support, a regulating act, that will be discussed in more detail in the following sections.⁹²

In the second part of the findings (map of Foursquare), I argue that, since the map was integrated into the visual/representational medium of this specific application, it has changed the way people come to know about places, thus providing a more relational understanding of place. By putting users in relation—to their own traces, and others' traces of place—this application provides a very different understanding of place: everything has traces, and through traces of themselves or others, users can get a different image of places. By mapping those traces frequently, and putting each check-in in relation to one's own previous check-ins or someone else's check-ins, the user is always grounded in relation to people or places and experience does not occur in isolation. (This will be contextualized in the section related to the relational act.)

Check-in as an Alternative Flexible Form of Sociability

Presence

As this study demonstrates, by integrating the possibilities of social media with GPS tracking systems (that enables tracking users' locations as points and makes connections between those points in space and time), users of such applications experience mediated social co-presence while experiencing urban spaces. Users can thus become aware of who is nearby, and who has already checked in to the same place as them. They also can have a dialogue with others who are not physically co-present (providing attachments or bonds to absent people) and possibly influence the image that others have of places.⁹³ They also can communicate, share their location, comment on each other's activities and places they visit, and so on. *This combination has caused social co-presence, or feelings of the presence of someone else, to enter into the experience of physical place, that thus has implications and consequences for users.*

This application puts users into constant contact with people and places. Being together in places means sharing mediated and direct experience at the same time. Users of this sort of media can share their experience of physical place with others who are in their contact list or people who have visited the same place, so accordingly the experience of physical is not in isolation, rather, it happens with others' virtual presence. Application puts users in contact, grounds them in a temporal relation with places and people and it frequently gets transformed by each act of checking in. Putting users in temporal relation to others in response provides a sense of nearness and intimacy⁹⁴ for users with virtually present friends and families (participants P2, P3, and myself confirmed the significance of closeness provided by media).

⁹² The Game feature of the application seems to appeal most to participants. [P1] refers to it as “a game I play with my friends for who is the mayor of Sheffield”. All participants included earning badges and mayorship as their motivations for using the application. Although aspects of gaming seemed potentially interesting and possibly relevant, since the scope of this study was limited, they were not covered.

⁹³ Fazel, Maryam, and Lakshmi PriyaRajendran. 2015. “Image of Place as a Byproduct of Medium: Understanding Media and Place through Case Study of Foursquare.” *City, Culture and Society*.

⁹⁴ deGournay, 2002: pp. 201–204; Fox, 2006, p. 13. Accessed at (<http://firstmonday.org/ojs/index.php/fm/article/view/4954/3786>).

P3 explained that when he uses the application, the feeling of getting notifications from family members and close friends is reassuring that you are surrounded by people you know. "It is good to know what they do,[...], It is sometimes not about knowing as spying,..it is more like knowing and a joy that knowing brings".

With each check-in users not only represent their physical place but show they are actively present within the sphere of the application.

P4 described that she sometimes checks in right after she gets a notification from a friend's location. In a way she responds to that friend's check-in by sharing her location; this way, she not only shows where she is: moreover, in a responding act, she shows she is also present in the virtual, thus constantly existing there, and performing a sense of co-virtual presence.

Check in thus could be seen as a sign of users actively situating themselves in the virtual and constantly existing there. The more frequently people check in or share tips or likes, the more they are situated and present within the experience of Foursquare. Witmer et al⁹⁵ proposed that a higher degree of involvement and immersion in a virtual environment would result in higher levels of presence. Reinforced in this study, the application responds to some users who share their location too frequently by sending them notifications in the form of "over share" badges, which means they checked in so frequently, or several times in a short period of time: e.g. you have checked in more than 10 times in 12 hours!

"For some users of the application, [myself as well], check-in becomes an irrefutable part of the experience of the space, disseminating and representing where you are is so integrated with threads of the corporeal experience that you feel disseminate your location socially in a mediated-act and sharing it with others while you are simultaneously in physical borders of place is undeniable part of the whole experience." P4 explained, "It becomes like a proof of you being there!"

Disseminating our physical location, presenting/representing ourselves

Based on the findings of this study, users of this application (aside from the interests in its game aspect) sometimes wanted to represent themselves through disseminating their places, to be in contact with others, to show/share their experience of new places, to represent the routines of their everyday life; sometimes check-in becomes a sign representing one's lifestyle.

Being in contact; attached but still mobile

Based on my study, all 9 participants plus myself replied that the reason that they found this application useful relates to the act of check-in. They check in to represent themselves and their location and stay in touch. Staying in contact was one important reason that users check in. Many of the users share their thoughts/actions and location with people (e.g. friends and families) who do not live or study in Sheffield: people from their original country or hometown. For those participants, the reason they wanted to use the application was to maintain their bonds and be in contact with family and their community of friends who they are not physically close to but are still emotionally attached to. For those participants who were students and were away from family (P3, P4, P5), as well as myself, the feeling of maintaining the roots/connection with people from their community was important. Relevant here, Barcus and Brunn used a term "Mobile but still attached to the roots"⁹⁶ to refer to this group of users, who maintain connection through new technologies and seek out new

⁹⁵Witmer, Bob G., and Michael J. Singer. 1998. "Measuring Presence in Virtual Environments: A Presence Questionnaire." *Presence: Teleoper. Virtual Environ.* 7 (3): 225-40.

⁹⁶Barcus and Brunn, 2009, Place Elasticity, exploring the new conceptualization of mobility and place attachment in rural America, *Geografiska Annaler: series B, Human geography*, 92 281-295.

technology to help them maintain relations.

One participant (P5) explained that she does not know any one in particular from Sheffield, so she uses the application and shares her location, because by doing that she can still be part of her old friends' circle; otherwise, there is no way she can call them or get updated about their lives. Another participant mentioned that she uses the application to be in contact with her supervisor: "He is living in Japan now and I want to know if he is still single or married, what sort of places he visits, [...],to know him better, in an indirect way-without asking anyone. Like an invisible spy". P8 also described the reason for using the application as following friends and their activities. Seeing where they have been gives credit to the place they visited.

Locative media provides the possibility of being present/part of a community of people that may not be physically available but still emotionally supporting, and this gives users reassurance that they belong to a community that takes care of them and supports them if needed. P3 explained his way of communicating with his sisters through Foursquare: "my sisters and I, [...] who both married and live in UK use the application. One of my sisters, only contacts me when I do not put check-in in Foursquare, for a day, or so,[...],[Pause], If for a whole day I do not put any check-ins, she probably will get nervous, and will call me /at its? The? night![laughter].., she usually, checks my check-ins and that way knows my location and sort of knows what I do in the day time".

Barcus and Brunn (2009), in *Place Elasticity*, explore the new conceptualization of mobility and place attachments, highlight this alternative way of socializing and communicating offered by new media technologies, and the possibility of being mobile but still in contact. Developing that idea further, I believe those media provide alternative ways of communication with less direct ways of asking questions about other people's lifestyles, their activities, their businesses and more through accommodating mediating devices, and through reading patterns of behaviour in mediums, get informed about and communicate with others⁹⁷.

Check-in as a sign of representing lifestyle

Through the short temporal act of check-in and sharing the experience of being in a place with absent others "living in a shared now, as you traverse different spaces"⁹⁸ place transforms into an entity able to be symbolically gained, shared or even possessed. Here the act of check-in is not only a trace or a marker that represents being in a place, but also for people who communicate through this medium, i.e. people inside this sphere, it means more than being in the place. Sociability and self-expression were reported among the additional reasons for using other social media applications. A self-explorative engagement is one of the main reasons of using Facebook.⁹⁹ In studies on self-representation and online identity, social media users are conceived of as creative actors who find value in using digital media as tools for shaping, exploring and developing themselves, sometimes in innovative ways.¹⁰⁰ In the case of Foursquare, the act of sharing location frequently transforms the whole social interaction into transmission of¹⁰¹ information, a self-expressive act. It transforms the experience for some users into exchange and reception of personal and social-detailed information of places they visit. Place thus correspondingly becomes bits of information, an extra accessory that people gain and present themselves (in the temporal act of check-in) with. When a user passes by a place or stays even a short while he could claim that 'he has been there', 'he has also been here, and there ...', he claims to have 'been in the place', 'known the place', 'used the space, liked the atmosphere', etc; in a way

⁹⁷ Italic to emphasize on the importance of the text.

⁹⁸ Wise, John Macgregor, and Hille Koskela. 2013. *New Visualities, New Technologies: The New Ecstasy of Communication*. Ashgate.

⁹⁹ Quan-Haase, Anabel, and Alyson L. Young. 2010. "Uses and Gratifications of Social Media: A Comparison of Facebook and Instant Messaging." *Bulletin of Science, Technology & Society* 30 (5): 350–61. Entertainment and relaxation were pointed out to be the main primary motivations for using Facebook and IM, providing "a form of escape from everyday pressures and responsibilities" p.358.

¹⁰⁰ Quan-Haase, Anabel, and Alyson L. Young. 2010. "Uses and Gratifications of Social Media: A Comparison of Facebook and Instant Messaging." *Bulletin of Science, Technology & Society* 30 (5): 350–61..

¹⁰¹ Mitra, A. 2013, Mapping Narbs, in *New Visualities, New Technologies, the new ecstasy of communication*, edited by Macgregor, J and Koskela, H. Ashgate.

representing what he likes and what he did not like, what his lifestyle is, what sort of places he visits at weekends, etc. In some ways it depicts a shift from emphasizing place where the user was the marker of the place, to place becoming a representation of the person's lifestyle or a possession that they can show off with.¹⁰² [...] Users imprint their own identity on the places where they live", which can be studied as a change in social/communicative understanding of places.¹⁰³ The value of each check-in in the context of "familiar places" changes from only a sign showing s/he has been in the place to a spectrum of meanings produced inside this sign system (e.g. "she reached the place and now is available", "she wants to meet", or "she is passing nearby and if you are interested you can reach her"), or many other meanings that are significant and meaningful only for users of the same app through their regular engaging.

From the choices provided in the questionnaire, in regard to the question 'what do you feel if you forget to put check-ins?', from the 5 options provided, all participant ticked two rows of the table and declared that they felt unhappy because they wanted to keep track of all the places they have visited, and also, they feel unhappy because they have not represented themselves through the check-in. Five participant referred to their motives of check-in as showing off/representing themselves/tracking activities.

Responding to a check-in as a supporting act

One direct implication of presence is the possibility of supporting users. Users of such an application can show their admiration and symbolic support by liking others' check-ins (e.g. liking a friend's new badge, or recently earned mayorship) – see Figure 5.6; they can also admire and emotionally support a friend for doing a particular activity such as staying long in the library or liking their workout in the gym (Fig. 5.6). They can also show their support of other users' activities by adding comments (e.g. commenting on gym activity, a museum visit, etc). It could also be practical support, such as giving them advice or suggestions on where they should visit, by sending them lists of suggestions, or sharing multi-media context information, such as photos, text, tips, etc. Most participants declared that they have all used lists and multi-media information that friends shared with them.

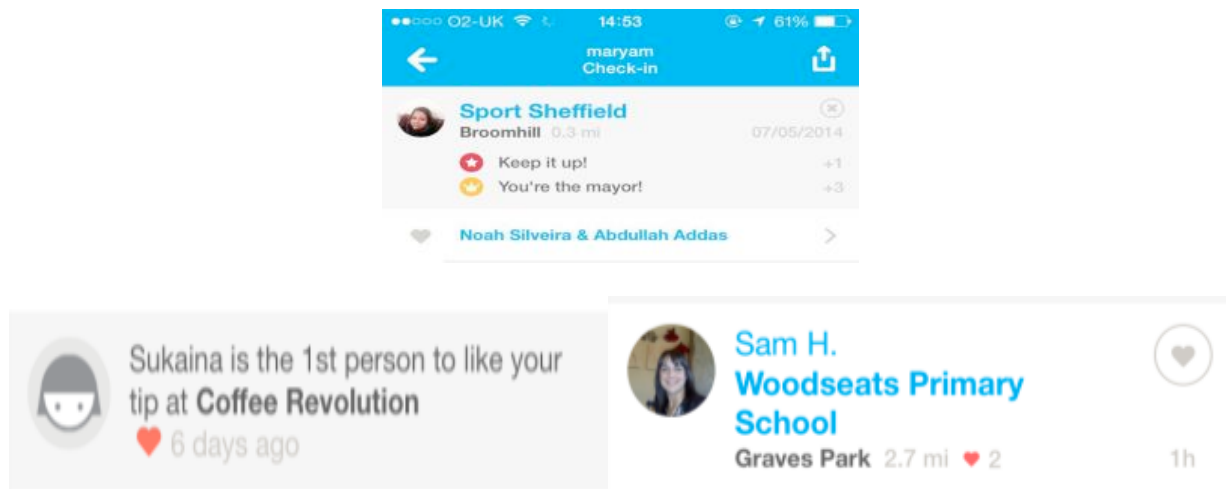


Fig. 5.6 Figure represents examples of check-ins as supporting acts. In responds to check-in, users can put comments, or like the check-in as a gesture of support or to show their admiration for others' activities, etc.

¹⁰²De Souza e Silva, Adriana, and Daniel M. Sutko. 2011. "Theorizing Locative Technologies Through Philosophies of the Virtual." *Communication Theory* 21 (1): 23–42

¹⁰³On Locative Media and the Urban Space, Posted by Luciano Frizzera in Academia, Papers Places, Thoughts, UofA accessed: <http://luciano.fluxo.art.br/2013/01/on-locative-media-and-the-urban-space/>

Check-ins and regular routines/personal tracking

P3, P4 and P9 expressed that they found the most interesting aspect of the application to be those traces of venues/locations which enabled them to see where they have been. Some participants expressed “it is good to keep a record of all places I have visited in the past”. It seems that it was so important for him to document his traces, that, if he forgets to check in when visiting a place, he might even check in later (without physically being there). Foursquare also links to other applications such as Memo and Swarm applications, which provide users with a list of all their check-ins). P8 willingly showed me how, by connecting Foursquare to another app called Swarm, he could get a record of his activities and how all his check-ins become organized in an order based on time/place. He explained that he found value in collecting and keeping track of all the places he visits, and thus creates a history of his own that he can then go back to later, and thus remember where he has visited. “It becomes like a memory book of my life, that every now and then I check and remember some memories by seeing the name of places or tips I have left there[...], I also can check the list and find the name of a place that I do not remember, but I know for example, it is really a good-place”.

Participants who check in regularly (by regularly I mean more than 4 times a day), declare that their check-ins follow their everyday routines and once their activities were visualized (through processing), they admitted that the places that got the most density are the ones they regularly visited. For example, for participants P1, P3 and P9, who were all students, the two main places they visited regularly were the school campus and school café (Fig. 5.4). For those users who frequently check in, the act of checking in represented the intensity of using space/place. If the color of dots becomes darker that means they are overlapped over a period of time, meaning that that space is used frequently. Sometimes regular check-in in the same place denotes their availability. For example, P9 and P2 use the Sheffield School of Architecture in the app, and they both put check-in to show that they are in school: “I am staying in school today,[...], not in the library and not at home”.



Fig. 5.7 Visualization of check-ins

Check-in as a regulating act

As explained so far, not limited to the predefined uses of the application as suggested by its developers, end-point users have their own way of implementing and employing this platform to fulfil their everyday needs. In one scenario, the application is adapted for regulating activities and everyday practices. By regulating I mean users employing the application to regulate everyday routines, for example they use it to develop chances of meeting with friends, or to show their availability to a friend, whether they are in the same area, etc.

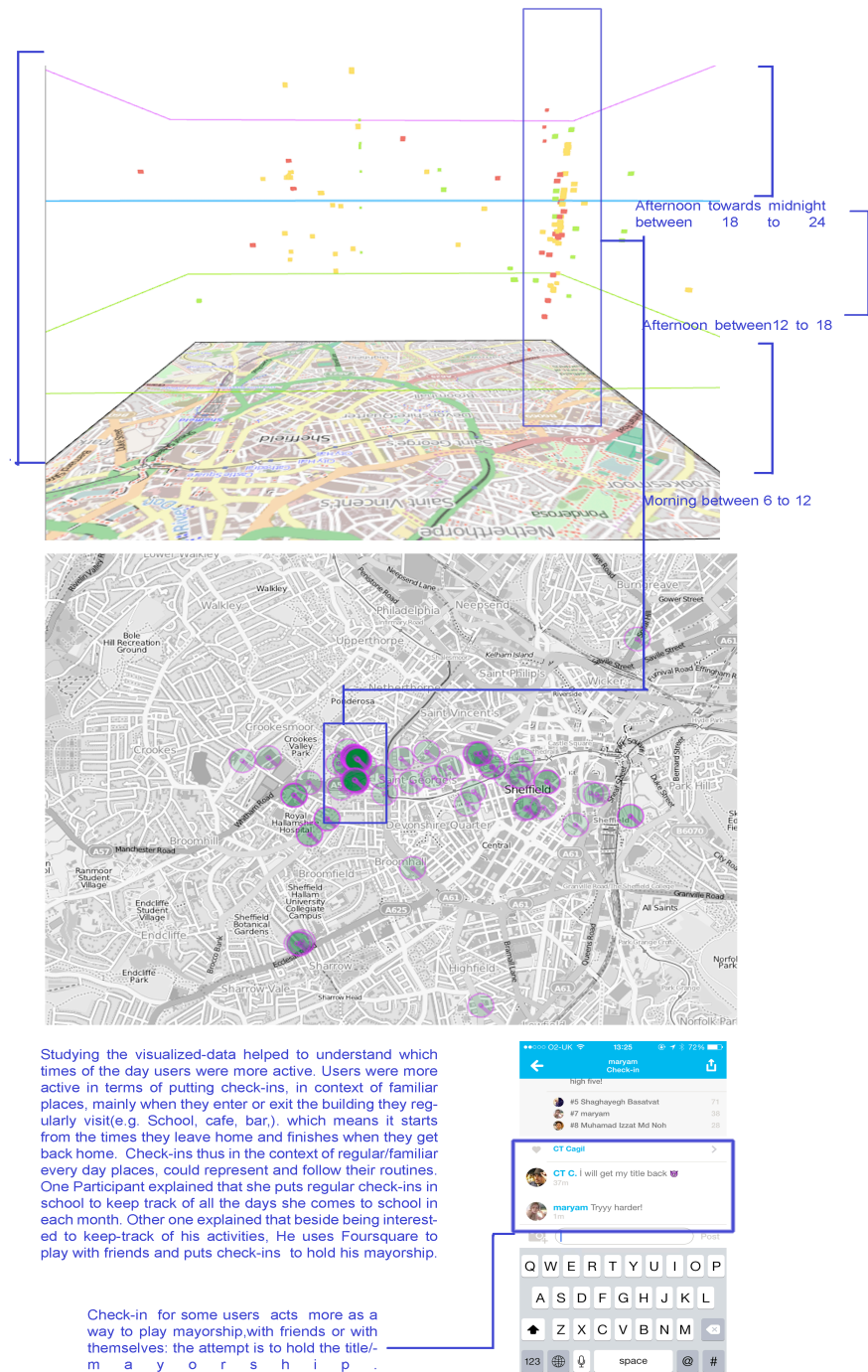
P2 described the reason that he and his partner check in at their home as a sign to show to the other that s/he has arrived back home and now s/he is available. This participant further explained that “my partner and I, instead of texting, prefer to represent our availability [being back at our place through checking in], without directly contacting the other one,[...] simply and easily communicating”.

P1, similarly, explained that she uses the application only when she is in Sheffield to contact another friend who is also using the app and this way they become aware of the chances that both of them might be in school or close to each other in places around the city centre. One other informant described how she uses Foursquare to check in to Costa (located in the city centre) *before* entering the building, as a way of signifying that she might lose her connection/signal when she is inside the building. In her communication with a few close friends and her boyfriend, check-in in Costa means “out of reach! for almost two hours...”.¹⁰⁴

One participant, who was a marketing researcher with more than 660 check-ins teaching at Sheffield Hallam University, explained that she uses the application to meet regular customers who all use the application. By checking in she declares that she has got to the meeting place. She is a super-user and has many badges: more than 50. She explained further the marketing strategies behind the application and the possibility of implementing media for marketing and business purposes. She expressed her view of the application as a marketing platform especially for people who are seeking innovative business opportunities, and for that, she would recommend the application, especially to those business owners who are looking to give their customers incentive cards or loyalty cards, suggesting Foursquare as a replacement strategy. She also expressed that she would try to encourage them to join and get the benefits from Foursquare by running their own page on Foursquare and having the possibility of promoting their business products, especially through Special Offers offered by Foursquare, or being able to add their promotions/tips/comments that appear at the top of the feedback/comment lists of users. She also mentioned that as a “*super-user level 2, I can change the venues, [...], I can edit locations, add venues and even delete similar ones*”. Based on Foursquare’s website, ‘super-user’ is a status granted by Foursquare to users. Those users are chosen by Foursquare staff as helpful contributors to the community, where based on their level they can edit/change/merge venues descriptions of locations, etc.

She also explained that “*I have been in situations where I was asked (by the owner of a place) to deliberately take the mayorship for/[of] their location, because the owner did not like the person who got the mayorship to be the representative on their customer desk, so they asked me to go in to the activity and take the mayorship.[...], This person was a blogger! Who used to write negative blogs about the location, and now he was the mayor.*”

¹⁰⁴ participant number 5



Studying the visualized-data helped to understand which times of the day users were more active. Users were more active in terms of putting check-ins, in context of familiar places, mainly when they enter or exit the building they regularly visit (e.g. School, cafe, bar,) which means it starts from the time they leave home and finishes when they get back home. Check-ins thus in the context of regular/familiar every day places, could represent and follow their routines. One Participant explained that she puts regular check-ins in school to keep track of all the days she comes to school in each month. Other one explained that beside being interested to keep-track of his activities, He uses Foursquare to play with friends and puts check-ins to hold his mayorship.

Check-in for some users acts more as a way to play mayorship, with friends or with themselves. the attempt is to hold the title-
m a y o r s h i p .

Fig. 5.8 Studying the visualized data helped to understand which times of the day users were more active. Users were more active in terms of checking in to familiar places, mainly when they enter or exit the building they regularly visit (e.g. school, cafe, bar,), which means it starts from the time they leave home and finishes when they get back home.

Check-ins thus in the context of regular/familiar every day places could represent and follow users' routines. One participant explained that she regularly checks in to school to keep track of all the days she comes to school in each month. Another explained that besides being interested in keeping track of his activities, he uses Foursquare to play with friends and add check-ins to hold his mayorship.

Place as commodity/possession/self-expression

Within this application, the relation between place and virtual data is of a different nature, compared to an augmented reality application where the relation is direct and more tangible. In the case of Foursquare, application interacts with place through symbolic material or the meaning generated within its representational medium and between users.

Check-in formulates different meanings of place. People use this application with different intentions, thus place, based on their intentions or sign system they use, signifies different meanings. Place could be understood variously, from the physical context for an engagement with media (with borders/territories) to a cultural and social landscape, a social product, or a hybrid entity, etc.

Place becomes a transformative entity that alters according to media. The act of check-in indicates multiple understandings of place within interactions. One user might use the app as a symbolic act, to present herself; place then becomes an associated commodity that she shows off by possessing it. Another user might use the application as a regulating device to meet a colleague or a friend; here, place acts as a fluid setting for their discussion,¹⁰⁵ and it is also contingent on an act of mediated communication. Alternatively, one user might use check-in as a sign system to show s/he is available in a place only for a period of time. Thus, the act of check-in and the intentions of using the app signify her availability, and place respectively becomes the setting for possible interaction but contingent on availability for a finite time period.

Although limited to users of the application, there are instances in which mayorship can be defined as a territorial attitude:¹⁰⁶ the user, by making claims over a particular place/geographic area, declares that area as their own territory or possession, thus defining his/her relation to/ domination over that specific place through the act of check-in. By that I do not mean the user claims physical ownership of a space; rather, it is more tactical,¹⁰⁷ where, through practice and usage of place, one can express relation to/ domination over the place or over the virtual version of the place (as some users believed).

P9 explained that “being mayor means you check-in so frequently that you own that title; [means] you use the space so often that if someone else steals your mayorship [most users refer to the action as stealing], then you become curious, to know the person; to know if that person truly [actually] comes [check-ins] that often he claims to!”

For instance, among the participants, there was a user who by commenting showed his dissatisfaction with someone taking over/stealing his mayorship (Fig. 5.9).

Foursquare allows types of relationships to be developed/practised around urban spaces/public places: a social layer of interaction that superimposes the conventional interaction. Users, through developing feelings of possession/territory, can possibly reinforce their relation to place. But, how strong it is, and how significantly mayorship would reinforce interaction of a person with/over place, was not within the scope of this study, thus this aspect needs to be explored through future research.

¹⁰⁵ Fluid setting is used because through the act of negotiating, users might change the setting of their meeting.

¹⁰⁶ Term used by Brighenti, Andrea Mubi. 2011a. “New Media and Urban Motilities: A Territorial Point of View.” *Urban Studies*, April, 0042098011400771.

¹⁰⁷ Tactical and strategical are terms used in/originating from the military field but adapted by de Certeau, 1984, in the context of urban every day use. Strategy as Lone Koefoed Hanson explained means “position/[territory] hold by entity of power” whereas tactic-[cal], refers to “how a territory is being practiced,[...]the position or actions of those who, in theory, do not have power but in practice manage to maneuver and circumvent the plans made by the strategic entities”. For more information Please see: Farman, Jason. 2013. *The Mobile Story: Narrative Practices with Locative Technologies*. Routledge.p.128.

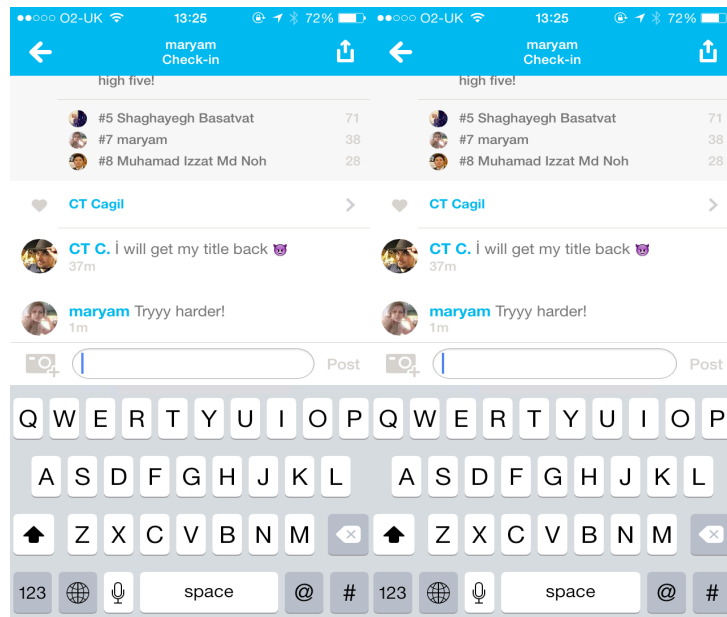


Fig. 5.9. Example of interaction/communication between users..

Map of Foursquare as socio-temporal mapping medium

The possibility of implementing a map and other forms of visual materials with GPS tracking and monitoring systems has opened up new ways of interpreting the map as the medium of representation. 'Map', in its new formats, does not serve only as an abstract representation of the physical-material world, it also communicates with place-experience in new ways and can furnish users with new forms of social interpretations and social-spatial understandings.

In the case of Foursquare, it contributes to an understanding of place that is experienced beyond the conventionally defined borders of space. In this model of experience, referred to here as mediated social co-presence, the user experiences materiality of a place, with physically absent others, who simultaneously are present through mediated channels and mediums (maps, feedback, notifications of their actions, etc).

When the representational medium becomes part of the practices of place-experience

One main ingredient of this medium is its map. Distinct from other forms of maps (printed hard copy), or even different from the digital maps available on desktop), mapping in this new format is user-generated, context-aware and crowd-sourced such that the conventional usage/reading of a map is altered. Accommodating the representational medium (mobile map of this application plus other symbolic materials/information), alters the experience of reading, and of conceiving/perceiving places. That means, due to changes in new media technologies, users are practising different forms of sociability, interactions and presence through mediation. In this form of representational medium, mapping is an act of understanding entities in relation, which is more interactive than ever before.

The representational medium of Foursquare (map, plus other symbolic virtual information) works as a mechanism to facilitate a series of interactions and sets of activities for its community of users that are particular, guaranteed and only available for users of this application, that provide different understandings of abstract data and new ways and patterns of interactions.

Some of those interactions were mentioned in previous sections; in the following I will highlight some aspects of place-understandings which are only enabled by maps in Foursquare.

Maps in Foursquare do not represent a user abstractly, but because they are elaborated with other elements of this medium (check-ins, text, images, notifications, etc), they can ground users in a series of relations, either with their own previous check-ins (traces) or in relation to people nearby, people who have already checked in to the same place as they are now, or who have already added put tips (Fig. 5.11). By making users traceable, this application provides the possibility of relating an *actant* (a person, a point) with another *account* (other people, other points) and by doing so, it enables visualizing/representing the co-presence of users (friends or people who are in your contact list) on a map (Fig. 5.10). By being related to other things—external connectivity¹⁰⁸—places are represented in connection with other entities, outside physical borders; temporarily perceivable.

It also provides the tracing of one's previous check-ins, which allows users to put their current check-in in relation to their previous check-ins or friends' previous check-ins (e.g. if friends have already visited the place the user will get a notification of their friend's check-in or any comments they have left). Users are able to view each other's positions on a map on the mobile phone screen and communicate with each other depending on their relative proximity in physical space. The application puts users in connection, grounds them in a temporal relation with places and people that frequently gets transformed by each act of checking in; some people will be added and others disappear from the map, but still their traces are collected. Putting users in

¹⁰⁸Term used by Relph, E. C. 1976. *Place and Placelessness*. Pion Limited.

temporal relation to others in response provides a sense of nearness, intimacy,¹⁰⁹ awareness of friends and families and the feeling of being connected (Figs 5.10 & 5.11).

Place perceived in a relational act

Foursquare's representational medium is an example of a sphere that provides the possibility of relationally thinking; putting things in relation and thus creating a different level of mediated communication and place-experience.

What seems apparent in the role of Foursquare in people's place-experience, is that users of this application are privileged to experience physical urban spaces within a group of people that they like or have a likelihood of shared interests with.¹¹⁰ Participants P1, P2, P3, P6, and P8 confirmed this idea. P2 used the term 'connect': "[Foursquare] connects me to venues, allows me to see who is where,[...]."

Users make themselves visible by leaving behind the traces of places they visited, liked, or the ones they listed as favorite for other users. "Mobile annotation applications have enabled us to locate things and to be located ourselves".¹¹¹ These types of media thus provide the opportunity to alter the nature of place-experience by bringing another layer of *in-group* experience or communicated experience to the experience of place, which I refer to as mediated social co-presence. Now it becomes a more accepted norm or even a necessity for users of such social media to present themselves and perceive space in connection with virtually present others and thus they are more relational. These media, by becoming part of the experience of place, by bringing community and collective values shared in virtual mediums into the experience of place, serve a meaning-making function and affect the way we make sense of places and develop connections to people and places.

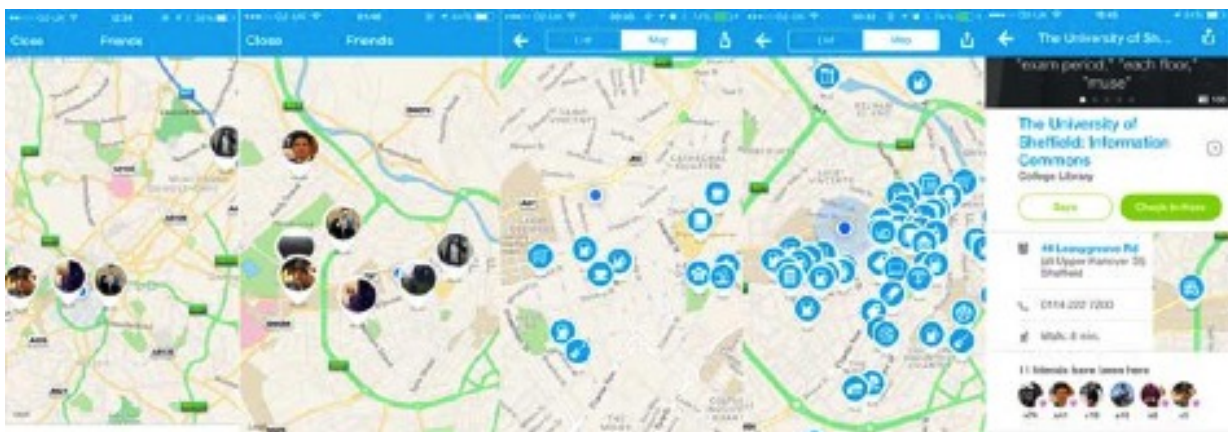


Fig 5.10 Place perceived in the relational act.

Snapshots of the temporal map resulting from check-ins. In the example of Foursquare, users of this application can know about their contacts' locations and what they are doing at any time (by checking their location on the map, or getting notifications of their location). They also can get the life-routines of friends through following their check-ins, or places they visit, and even the time of their activities. This medium constructs and defines new forms of understanding of (being in space and being with others), which is only

¹⁰⁹deGournay, 2002: pp. 201–204; Fox, 2006, p. 13. (<http://firstmonday.org/ojs/index.php/fm/article/view/4954/3786>).

¹¹¹Gordon, Eric, and Adriana de Souza e Silva. 2011. *Net Locality: Why Location Matters in a Networked World*. John Wiley & Sons.

enabled through mediation. Users of such applications are experiencing social co-presence not corporeally, but rather reflected and presented on the medium of a map. *P5 saw the benefit in co-existing on the map by saying "I never check the notification I get from my contact list, I only check the map and instantly I get an idea who is where, sometimes by their check-ins, I can even guess what they are doing. For instance, a friend of mine has some mental issues and sometimes he check-in a hospital. I know, there is something wrong but I never have the boldness [nerve] to ask! It is really a brave act though!! To check in mental Hospital!"*

The application provides a means for sharing mediated and direct experience at the same time. Foursquare is a system that places the user on a map, in relation to other entities, users and places, continually keeping them in touch with their in-group, nearby or worldwide.¹¹² It shows users in connection, grounds them in a temporal relation with places and people frequently transformed by each act of checking in, and represents a sense of nearness and intimacy (see Fig. 5.11).

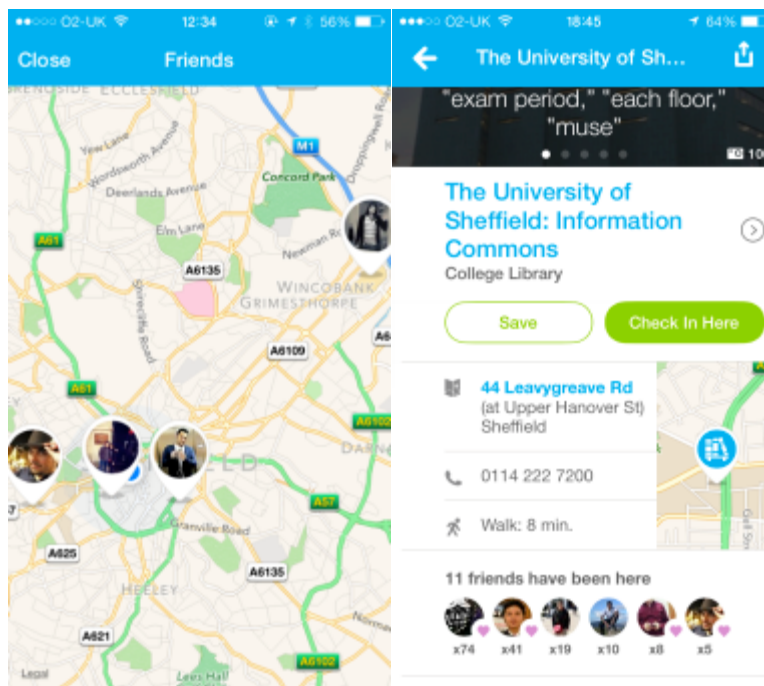


Fig. 5.11 The application, besides locating users on a map and showing who else is nearby, also displays who else has previously checked in to the same place and what are the famous tips left for that specific location. If you are interested in one place, it shows the other options/places that might also be interesting for you. Place thus is perceived in constant connection with other entities, people, places, objects, etc.

Another important aspect of *Foursquare* is that besides changing spatial understanding, this media also changes the sense of temporal perception of time. There are different ways that locative media (*Foursquare* application) disrupt mechanical/social time or converge with other time perception (working time, social time, family time). Here, the user can use media simultaneously with other activities/or other media channels (simultaneous time), be frequently distracted by notifications or the need to reply to a person (disruptive time/time consuming), or to constantly be in contact (accompany time¹¹³—being able to be continually texting,

¹¹² Licoppe, Christian, 2004. 'Connected' presence: the emergence of a new repertoire for managing social relationships in a changing communication technoscape. *Environment and Planning D: Society and Space* 22 (1), 135-156

¹¹³ Some of these categories were addressed by: Kweon, et al, 2011. "Time and Space Perception on Media Platforms." In *Proceedings of the Media Ecology Association*, 12:25. http://www.w.media-ecology.org/publications/MEA_proceedings/v12/8_time.pdf.

getting notifications, replying to a comment/text, regardless of natural time or mechanical time zones, such that the user can communicate from this time here, to that time there). This specific application, similar to many other digital media, certainly reshapes the sense of the temporal as well as spatial perception: there is a form of *continuity of time* that is offered by media which works as follows: a user can reply to a comment or a text of another friend, whenever she visits the page, regardless of his/her mechanical time or even work time; notifications always pop-up, requesting different methods of communication. This media offers and asks for different forms of interaction/communication that consequently have an impact on the way users perceive and conceive of time and space.

Conclusion

Here, I emphasized those works, emerging from many different disciplines, which discuss place, place-experience, and place-attachment, and those which are concerned with the challenges presented by media technologies to place-experience and place-attachment. By combining different ways of thinking about presence, medium and place, the aim was to provide supplementary understanding of place-experience and place-attachment in a contemporary urban context where social media is pervasively used.

What I argued here was that the application of *Foursquare*, and similar LMSNs mobile technologies, mediate physical places but not only through providing context-related information or what is also referred to as generated content, but also through providing networks between users of this social media (in-group experience), and through affording mediated social-co-presence that constitutes a new communicated yet relational understanding of place. Because of the accommodating aspects of representational mediums (maps, visual material, comments, text), the assemblage of social media, with the potential of tracing users' activities, could now dictate other types of presence that influence people's place-experience and their behaviour (mainly the way they decide about visiting places, avoiding unwanted encounters, and so on).

I articulated the causes of the change as: social media becoming present during the experience of physical/temporal spaces, mainly because of integrated GPS technologies that consequently change the modes of sociability, thus offering alternative and flexible forms of sociability. As the case study of *Foursquare* showed, *representational medium is forming and framing this interaction, mainly by changing the attitude of users and encouraging them to share their physical location and represent themselves to others. It also changes place-experience by putting users in constant contact with people and places, (in-group experience) and through simultaneity of presence/perception of a place and dissemination of being there.*

Here, I also discussed other place-related consequences of applying representational medium and through mediated social presence I discussed how by integrating aspects of the representational medium—especially maps—*Foursquare* enables users to perceive place in a more relational nature that puts users in relation to their own traces, and others traces of place. We can say that the traditional feeling of presence (concrete presence),¹¹⁴ has been transformed, due to the “technologies of imagination”, towards creating “communities of sentiment”, groups that “imagine and feel things together”.¹¹⁵ The experience of neighbourhood places for users of this application, besides relying on the physical characteristics of place, relates to socially shared experience of being connected (social/collective aspects of place attachment) as well as collectively shared experiences. Locative media applications can possibly alter or re-value personal relation to places through those shared collective understandings. Users bring sets of values to the experience of new places, and those beliefs and values can be sustained, affected or re-valued through new media technologies.

Those media are also becoming regulating devices with which to arrange meetings and daily visits. Coordinating mundane social activities in more flexible ways, keeping in touch with friends and family, and information-oriented uses of social media may constitute more common instrumental approaches to social media.¹¹⁶

As a result of this integration of the medium of dissemination and presence in the experience of spaces, maybe we should start to think of altering the factors defining place attachment, and now add aspects of medium (e.g.

¹¹⁴This term was cited in Crang, Mike, and N. J. Thrift. 2000. *Thinking Space*. Psychology Press.p.377.

¹¹⁵Appadurai, Arjun. 1996. *Modernity at Large: Cultural Dimensions in Globalization*. Minneapolis, Minn: University of Minnesota Press.p.8.

¹¹⁶Bechmann, Anja, and Stine Lomborg. 2013. ‘Mapping Actor Roles in Social Media: Different Perspectives on Value Creation in Theories of User Participation’. *New Media & Society* 15 (5): 765–81.doi:10.1177/1461444812462853.

mediated social co-presence) and the feeling of in-group experience or self-representation offered by such communication media technologies, as primarily factors or stages for place-experiencing. Perhaps we need to put mediated social co-presence—being socially co-present or having in-group experience or feelings of connection—as a factor or foundation defining our satisfaction with urban experience.

**CHAPTER SIX: LOCATIVE MEDIA TECHNOLOGIES AS SPATIAL-TRANSCENDENTAL TECHNOLOGIES TO SOCIO-
FORMATIVE SPHERES**

Intermission

Mapping the thesis, so far I have illustrated the context of and stage for the study, raised some relevant issues, concerns and questions, and through case studies (with the concomitant development of some tools and methods) I approached those questions. The latter occurred mostly at the level of empirical studies, but those case studies, as I already underlined in the introduction, have also enabled me to think differently about existing theory and to further develop theory. Case studies were not only part of the empirical study, but stepping stones, preparatory stages on the way to introducing a broader and more theoretical discussion. By stepping back from those detailed studies on the usage of new media technologies, in the chapter that follows I will develop more reflective ontological discussion, and deliberately broaden the discussion to include theoretical and ontological tools, views and frames of observation. Developing theory was the final destination of this thesis, thus theory has acted as a frame of reference along the way and helped to make sense of empirical parts and to filter materials respectively. Theory acted as a constructive frame to put together pieces/mosaics of understanding found from case studies, where each empirical case study served as parts/fragments of the whole image/understanding.

But now, to develop the final discussion, I will introduce new supplemental discussion of the case studies by bringing new conceptual tools alongside them. It is not until I have introduced those materials that I will be able to make my overall conclusions. Thus, in the following, there are a number of extra conceptual ideas and literature reviews that will be introduced to support the final analysis. Once these are set out, it is only towards the end of the discussion that the connection between theoretical discussion and empirical studies will become clear.

Locative Media Technologies, as Spatial-Transcendental Technologies to Socio-Formative spheres

Abstract

In this chapter, by going through some literature of place and highlighting moments in which new conceptualization of place were provided (where technologies contribute to, challenge or redefine the concept of place), I argue the necessity for re-conceptualizing place after new media technologies, in a similar way to that which had to be undertaken in a previous era influenced by the new technologies of mobility (automobile, train, and so on), when they significantly affected place and place-understanding.

Exploring the ontology of place after new media technologies, by accepting the theoretical discourses that discuss place as a relational concept, my main argument and main contribution is centred around understanding place as a frame-based relational concept, where I introduce frames of observation into the relational thinking of place. By putting place-understanding in relation to both frames of observation and the power of technologies in changing our knowledge, this chapter explains why our understanding of place has shifted from corporeal or personal attachment, to a concept that is more relational—in flux—and is not limited by the borders of materiality. I will then move on to construct a concept of place as a relational frame-based concept, by saying that place in this formulation is an assemblage of sets of relations which is contingent on how we define the frames of observation at any moment in time, resulting in different configurations of entities (immaterial and material tools, technologies) that re-modify place-understanding.

What we do as architects in order to study or design a building is to provide frames of observation. That means whenever we need to, we define points of observation, scale, and level of viewing, where we can zoom-in or define particular points for viewing the object/building. By bringing my own architectural tools and conceptual analytical method of viewing to this present research, and through adopting a dual perspective as a way of both surveying *over and above*, and *from within*, two main sets of understanding are provided here.

Firstly, understanding of mobile media technologies as transcendental tools:¹¹⁷ tools that change the understanding of place by transcending geographical territory and spatiality, and seeing *over and above* the physical limitations, thus allowing our understanding to go beyond the limitations of physical borders. Secondly, by zooming in and seeing things *from within*, the chapter discusses technologies as socio-formative spheres that could reconstruct our knowledge from within particular social and cultural threads.

My contribution here is to highlight how mobile media are helping to facilitate an understanding that place cannot be perceived prior to the act of defining frames of observation. Thus, *I argue that since understanding of place is contingent on frames of observation, technology—as the main ingredient of that assemblage—could be seen as a transcendental technology in one frame of observation and in another observational frame within cultural threads, it could also be formative.* This perspective facilitates concrete understanding which is grounded within socio-cultural logics.¹¹⁸

¹¹⁷ 'Transcendental technologies' is a concept coined by geographer Kellerman to refer to all technologies that help to overcome physical and perceptual borders of understanding (airplane, aerial photography, transportation, information transportation, automobile, telephone, internet, and mobile communication devices). Cited in Kellerman, Aharon. 2006. *Personal Mobilities*. Routledge.p.72.

¹¹⁸ Term used by Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press.p.130.

Background

Prior to the era of mobility¹¹⁹, place was perceived as static and more distinct, with borders and locations perceivable mostly as an area of *space* with less “external connectivity”¹²⁰ and network connections, and more as a contained interior. In those days “place was concerned with the individual’s attachments to particular places and the symbolic or metonymic quality of popular concepts of place which links events, attitudes and places [...]”.¹²¹ Correspondingly, the relation of a person (corporeal embodiment) with the physical world was more at the core of understanding and perceiving place. Moving from that arguably simplistic understanding, another perspective was provided by Marxist philosophers (such as Lefebvre), who set out more reflexive and dialogical theories of space that emphasized the dynamic and contingent production of location with place without having a privileged ontology, where place is viewed as the locus of intersections of geometries, of socio-political forces. Informed by those philosophers, research into place thus was shifted to focus upon processes of production, and to embrace the multiplicity of spaces that are socially produced as intersection of social practices.¹²² In that view place is produced rather than merely being extant.¹²³

Later, after technologies of mobility had become an integral part of the built environment, geographer Doreen Massey discussed how globalization and mobility affects the experience of place, explained that place-experience does not only occur inside the boundaries of physical geography, and that understandings are constructed on a far larger scale than what we happen to define, for that moment only, as the place itself.¹²⁴ Instead of thinking of place as an area with boundaries around it, Massey suggested a “progressive notion of place which is extroverted”, which includes a consciousness of its links with the wider world, integrating in a positive way the global and the local.¹²⁵ From global to local, from intimate space of the body to the space of the globe, space or place are precarious achievements made up of relations between multiple entities.¹²⁶

For Massey, the elusiveness of place can be understood as a collection of “stories-so-far”, where a “multiplicity of trajectories co-exist”.¹²⁷ Massey conceptualized place/space as a meeting point of sets of inter-relations that do not necessarily all exist within the same physical place. She provided a perspective on place as an ongoing and perpetually incomplete process, encouraging us to approach it in an outward-looking way rather than being enclosed and defensive,¹²⁸ thus embracing other definitions or processes that offer different views to place and place/space understanding. As we know, various forms of material and immaterial mobility have already taken hold of the experience and the condition of contemporary life, affecting the way we communicate, travel, and even experience the world around us, thus the experience and definition of place requires clarification.¹²⁹ By acknowledging that and by bringing attention to Massey’s call to consider place in an outward-looking way, as a sphere in which distinct trajectories coexist,¹³⁰ and by embracing other views

¹¹⁹ By Mobility here I refer to the era of mass transport (1850s onwards).

¹²⁰ Relph, E. C. 1976. *Place and Placelessness*. Pion Limited.

¹²¹ Gibson, Chris, Susan Luckman, and Chris Brennan-Horley. 2012. “(Putting) Mobile Technologies in Place: A View from Cultural Geography”, *Mobile Technologies and Place*, edited by Rowan Wilken and Gerard Goggin, 124. New York: Routledge.

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Massey, Doreen B. 1991. “A Global Sense of Place,” *Marxism Today*, p. 28.

¹²⁵ Ibid.

¹²⁶ Hubbard, Phil, Rob Kitchin, and Gill Valentine. 2008. *Key Texts in Human Geography*. SAGE, p.226.

¹²⁷ “Space is the sphere of the possibility of the existence of multiplicity; that is space [...] is the sphere in which distinct trajectories coexist; as the sphere therefore of coexisting heterogeneity”, (Massey, 2005: 9), cited in Hubbard, Phil, Rob Kitchin, and Gill Valentine. 2008. *Key Texts in Human Geography*. SAGE, p.228.

¹²⁸ Space is always under construction; “it is always in the process of being made. It is never finished; never closed” (Massey, 2005: 9), cited in, Hubbard, Phil, Rob Kitchin, and Gill Valentine. 2008. *Key Texts in Human Geography*. SAGE.

¹²⁹ Hjorth, Larissa. 2012. “Still Mobile: A Case Study on Mobility, Home and Being Away in Shanghai.” In *Mobile Technology and Place*, edited by Rowan Wilken and Gerard Goggin, 141. New York: Routledge.

¹³⁰ Cited in, Hubbard, Phil, Rob Kitchin, and Gill Valentine. 2008. *Key Texts in Human Geography*. SAGE.

offered by mobile media scholars and geographers¹³¹ who bring to view the challenges and potentials new media technologies have posed on place-understanding, place-attachment and sense of place (discussed in Chapter 5), what I want to echo and develop from their arguments is to recognize/appreciate/embrace the power of new media technologies to enable a different understanding of place that was not available prior to their arrival.

Place as a relational concept

As I pointed out in a previous section, prior to the introduction of electronic technologies, physical materiality was the main contributor for constructing place-experience, but affected by modern technologies, the experience of place is less constrained to physical borders and is rather understood more relationally (relations which run ‘into’ and ‘out from’ location, or which are in connection with entities that may not physically exist in the same proximity). This interesting view, which is mainly influenced by the philosophical work of Deleuze and Guattari, is a relational thinking of space and place,¹³² where the complexity of the urban condition is best recognized and described, and which explains place as an assemblage of a series of connections between entities (natural and social, political, technological, etc)—what they refer to as actants. Space and place are formed based on relations, and as relations change, space and place are also in constant flux.¹³³ In this approach to place and space, both are conceptualized as *forms of assemblage* (embodied and non-embodied vectors, material and immaterial entities, where everything in the natural or social world is treated in the same terms as elements: actants of the assemblage,¹³⁴ unfolded and played out even across distances). In relational thinking, *place is an assemblage of bodies, technologies, social relations, location, materials entering or exiting the location*, where each change, shuffle and fluctuation in relations between those elements—actants—through any possibility of modification or change of those elements or their set of relations, causes understanding of place to be altered. For instance, through connecting here (real) and there (real or virtual) through technology of mobility, as we know, sense of distance, place, and even the value of communication has altered. Richard Ek, elaborating on studies regarding relational approach to place, has argued that the conventional ontology of space (as absolute) is thus questioned in favour of new technologies, in particular, where technology, by showing the flux of materiality/immateriality into and out of a location, challenges the conventional understanding of space as constrained to and held in a fixed section of space or geometry.¹³⁵

One significant example that validates this approach is provided by mobility. In the present urban context, with all its attendant material and immaterial forms of mobility, and because there are more possibilities to simultaneously connect to different places, objects, mediums and flows, frames that previously captured and isolated place can now include flows from inside and outside of that frame. Accordingly, all entities, actants,

¹³¹ such as Wilken and Goggin (2012), and Gibson, Chris, Luckman, and Brennan-Horley (2012),

¹³² John Law has argued that there is little difference between Deleuze’s *agencement* (that is strangely translated as “assemblage”) and the term “actor network” (Law 2009, P.146). “Both refer to the provisional assembly of productive, heterogeneous systems”. Concerned with productivity of practices/systems, sociologists and others scholars interested in this theory used scientific semiotic methods/language/tools to describe socially and materially heterogeneous systems (P.143). Both theories are a different family of material-semiotic tools, sensibilities, and methods of analysis that treat everything in the social and natural worlds in an equal manner, as a “continuously generated effect of the webs of relations within which they are located”, where everything could be seen as effects of a set of materially heterogeneous relations.

John Law used an example of how the Portuguese reached India and controlled half of the world; he explained that “ships, sails, mariners, navigators, stores, spices, winds, currents, astrolabes, stars, guns, ephemeredes, gifts, merchants’ drafts were all translated into a web. That web, gave each component a particular shape or form that was to hold together for 150 years”(p. 146). For more explanations please see, Law, John. 2009. “Actor-Network Theory and Material Semiotics.” In *The New Blackwell Companion to Social Theory, 4th Edition*, edited by Bryan S. Turner, 141–58. Oxford: Blackwell.

¹³³ Cited in Introduction Ek, Richard. 2006. “Media Studies, Geographical Imaginations and Relational Space.” In *Geographies of Communication: The Spatial Turn in Media Studies*, edited by Jesper Falkheimer and Andre Jansson, 45–56. Göteborg: Nordiskt Informationscenter for.

¹³⁴ Text between parentheses was cited in John Law, study of actor network theory and material semiotics, p.145.

¹³⁵ Ek, Richard. 2006. “Media Studies, Geographical Imaginations and Relational Space.” In *Geographies of Communication: The Spatial Turn in Media Studies*, edited by Jesper Falkheimer and Andre Jansson, 45–56. Göteborg: Nordiskt Informationscenter.

vertexes,¹³⁶ relations and connections that used to define firm relationships between a person and physical place are now constantly being configured and reconfigured. As Rob Shields stated, “[With the] growth of movements and flows of goods, capital, people, and information, place cannot be perceived as a fixed portion of space, as an anchoring point of community [...] We have to face new dimensions of place, and see it as an intersection of flows”, and as a “hub, dynamically produced in time”.¹³⁷

Place as a relational frame-based concept

What I argue here is that in order to provide a conceptual understanding of place after new media technologies, I need to introduce frames of observation to supplement existing theories of place as a relational concept. Frames of observation in this discussion are understood as the frames through which we observe, investigate and understand the world around us and are employed as a linking concept between technology and place.

By accepting relational thinking about place as a significant theory, best configuring and defining relations between mobility, place and technology, where place is discussed as an assemblage encompassing a series of relations, frames of observation is introduced in this discussion in order to understand place comprehensively. Frames of observation¹³⁸ in this discussion are understood as the frames through which we observe, investigate and understand the world around us and are employed as a linking concept between technology and place. Interestingly, it can be argued that technology has the power to change these frames of observation,(for example, by expanding the notion of not only being related to location and/or embodiment) technology allows to perceive place, in relation to outside-of-the-frame of location, as series of connections(connections that cannot be spotted if we only focus on embodiment, physical space and location).

Place here is understood as a relational frame-based concept, and is contingent on how we define the frame of observation at any moment in time, and how, based on that frame (where we put it; what the scale is; what it does, undermines or highlights), entities that form place (the assemblage of sets of relations) are respectively re-configured. The discussion thus explains how place could be understood as a state of sets of relations, but it is also contingent on frames of observation, *plus the power of technology to change or relocate those frames*.

By setting the frame of observation¹³⁹ outside physical borders, our knowledge is liberated from the physical-material, and from only being a personal/social property. For instance, the technologies of mobility acted as an important factor, which changed our understanding of place by affecting our knowledge of our location, by putting it in relation/comparison to other places, other people and outside geographies. That specific technology freed our relation to place from its previous attachment to physical borders. What happened at that specific moment in time when trains and automobiles were introduced was that the frames of observation were no longer grounded in a physical location we used to know as the base or center of our world, changing a

¹³⁶ Vertex is a metaphor to refer to a line that relates to two things/objects, the concepts of line, vertex, actant, are metaphors that are used to refer to connection and association between entities.

¹³⁷ Cited in: Lemos, Andre. 2010. “Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society” 13 (4): 403–20.

¹³⁸ Those frames help us to understand that place is not a fixed concept, definable prior to the frames of observation: rather, it is an a posteriori meeting point of sets of relations observed from a certain point.

¹³⁹ Frame of observation is a conceptual frame that I use to accentuate the limitation of observation/understanding. Each frame is a boundary that separates inside and outside, that reveals some forms of relations and understandings whilst undermining other relations located outside that frame. The frame I refer to here could be located in a very close-up position to an object/assemblage and show in detail a limited number of entities inside that frame whilst overshadowing other entities/relations; in this way those elements or entities that were involved but placed outside the frame of observation remain unseen/or less important. For example, by choosing a different frame of observation, we can see/define place, only in relation to bodies, psychological aspects, memory, personal/physical qualities, etc—similar to the way environmental psychologists study place—or it could be defined through choosing a much bigger frame that includes social, economical, geographical, and technological factors. What I want to point out here is that by altering the point of observation/frame of observation, stress will be put on a different set of ingredients/elements. I am using frames of observation because later in the discussion, I argue that due to consciously defining two set of frames of observation, two sets of understanding will be provided/emerged regarding place and locative media technology.

person's relationship to the world: due to changes in the frames of observation we were able to see outside the limitation of physical-perceptual borders. So here it can be seen that technology by changing/relocating our frame of observation (from inside an specific location/geography, to, in between locations/geographies) has changed our relationship and understanding of place.

There is a strong relation between place, frames of observation, and transcendental technologies. 'Transcendental technologies', as explained in Chapter 3, is a concept coined by geographer Kellerman to refer to all technologies that help to overcome physical and perceptual borders of understanding (including the airplane, aerial photography, transportation, information transportation, automobile, telephone, internet, and mobile communication devices).¹⁴⁰ Lash and Urry used a similar term in their investigative study of the changes in social notions of time and space, where they refer to cars, trains and buses as devices that transcend what was formally understood as the "tyranny" of distance.¹⁴¹ Urry argued that urban society is a society on the move, and each mobility, whether it is material or immaterial, shapes specific configurations and relations. Moreover, by each reconfiguration of a person's relation to the outside world, whether it is near or far away, they are exposed to a different perception and understanding of place. In a way, transcendental technologies provide new perspectives on the world by means of altering our knowledge of the world around us, sometimes by helping us to overcome our physical limitations. Transcendental technologies provide possibilities for us to change our observational frames, liberating our experience from being grounded in physical places by moving us instead into a more relational experience, one that can be more outward looking, open and welcoming to new possibilities. *The frames of observation as I pointed out in this discussion are understood as the frames through which we observe, investigate and understand the world around us.* Before the advent of new technologies, observational frames were more grounded in physical places; therefore place was understood through borders, actions and interactions that took place only within those frames. But now, because of all the newly introduced forms and modes of mobility (material or immaterial) and transcendental technologies, understanding of place is only loosely grounded, and less contingent on physical locations, while becoming more closely tied in relation to other entities such as other flows, objects and locations, relations that take place outside the location. Therefore, understanding *place* is now strongly defined in relation to other entities/actants; always in change and configuration, no longer only concerned with personal attachment, or personal characteristics that could only be explored or discussed on a personal level. Today, we can see the intersections of objects, flows of material and immaterial entities inside and outside the boundaries of space, *and their interaction constructs a new understanding of place itself.*

By each change and re-positioning that takes place in our frames of observation, certain sets of social-cultural or political connections will emerge that will define place as the meeting point of those relations. Massey discussed how place is the meeting point of socio-spatial and political relations. And whilst developing David Harvey's concept of time-space compression, Massey used the example of the *satellite* as a tool to explain how "If one moves in from the satellite towards the globe, holding all those networks of social relations and movements and communications in one's head, then each 'place' can be seen as a particular, unique point of their intersection". "[...] It is thus place, indeed, a meeting point". John Law argued that the notion of level or scale is a relational concept.¹⁴² With each zoom-in or zoom-out, we observe different sets of relations, and the choice of the frame shows a certain set of socio-cultural or political relations that define place as their meeting

¹⁴⁰ Kellerman, Aharon. 2006. *Personal Mobilities*. Routledge.p.72.

¹⁴⁰ Schmidt,A., Langeheirrich, M.,Kersting,K., 2011. 'Perception Beyond Here and Now.' *Computer* 44(3), 86-90.p.87.

¹⁴¹ Cited in Green, Nicola. 2002. "On the Move: Technology, Mobility, and the Mediation of Social Time and Space." *The Information Society* 18: 281-92.

¹⁴² Law, John. 2008. "Actor-Network Theory and Material Semiotics." *In The New Blackwell Companion to Social Theory, 3rd Edition*, edited by Bryan S. Turner, 141-58. Oxford: Blackwell.

http://bookshop.blackwell.co.uk/jsp/id/The_New_Blackwell_Companion_to_Social_Theory/9781405169004.p.4.

point. Configuration of those sets of relations is contingent on the frames of study, and with each change in frame and point of observation the arrangements are reconfigured accordingly. I use this specific explanation again here to show that, if we put technology outside the frames of observation (although this is now impossible in our contemporary life) then place still could be described or defined at a personal level, in relation with rootedness and connection. The reason why all definitions and ontologies of place were contingent on personal relations to the material world before media technologies (when embodiment was the key issue defining place relation) was because frames of observation were situated within everyday interaction and within the borders of place, in relation to the body or embodiment of the observer, whereas if we apply mobility or other forms of technology, they re-position the frames through which we observe and understand our interaction with the world around us to a different point of observation.

In the case of place, once one changes the frame, i.e. if the frames of observation are no longer grounded in physical place and are not in close contact with physical materiality, it is clear to see different sets of relations defining place. This explains how technology and the power of mobility (material-immaterial) have significantly relocated our frames of understanding, and how because of that, we are now able to see relations and flows outside the borders of the physical locations.

Returning to the main objective of the thesis, which is to provide a framework for understanding place after media, this chapter implements the approach in architecture as a method, examining an ‘*over and above*’ and a view ‘*from within*’. In the following section I examine the present urban conditions, investigating the setting of technology and forms of mobility in order to move towards understanding place after media technologies as a relational concept contingent on technologies and frames of observation. The illustration below explains the methodological approach adopted in this chapter.

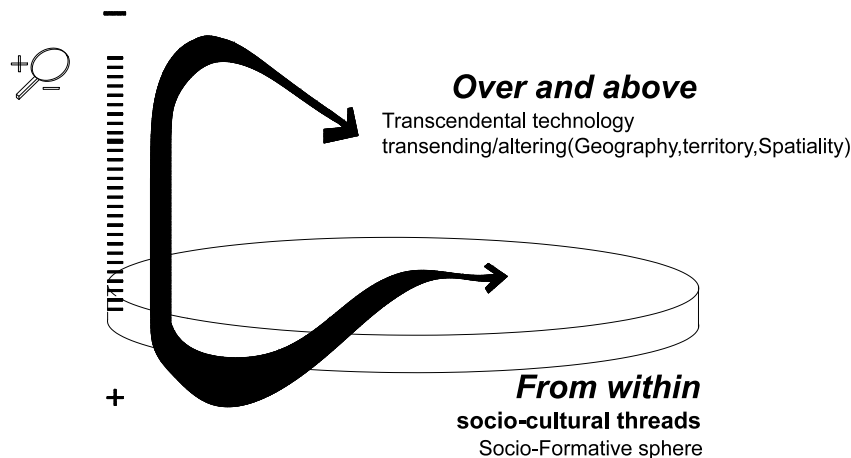


Fig. 6.1 Architectural Approach as a method: the methods of viewing are borrowed from the field of architecture. I argue that new media technologies not only can be understood as transcendental technologies but after changing the frame of observation they can also be considered as the formative sphere that affects place perception and experiences from within the assemblage.

Understanding from Above/Over: Locative Media as Transcendental Technologies (Transcending Geography, Territory and Spatiality)

Locative media broadly encompasses another group of technologies that help to change the frames of observation, and in turn change our understanding of our world. As a transcendental tool, it has number of characteristics. Here I will address three of these in particular: transcending geography, territory and spatiality. The first allows communication to happen despite physical, geographical separation. As examined in the case studies (*Foursquare*, Chapter 5) these media technologies can transcend geographical separations, and provide users with access to local events, maintain their bonds¹⁴³ with detached geographies and communities from/to their place of origin, and discuss and experience places in groups with like-minded people. Hjorth (2012) stressed that those technologies, by blurring the boundaries between lived/imagined, local/global and inside/outside,¹⁴⁴ encapsulate some of the other paradoxes of what it means to experience place today”.¹⁴⁵ “Mobile-media practices provide insight into the complex and paradoxical ways we imagine, sketch and render places”.¹⁴⁶ She referred to those technologies as domesticating technologies,¹⁴⁷ saying “feeling of senses of domesticity may no longer be physically located in an actual home”, and understanding of place is not only geographical and physical but also involves “evoking cartographies [which are] of imaginary, emotional, mnemonic, and psychological.”¹⁴⁸ In the contemporary urban context people are continuously exposed to transformations and reconfigurations of their relation with spaces, objects, flows and entities, experiencing a constant flux of spatiality and place-relation as a consequence. Media and mobile technologies, as a form of mobility of people and information, have resulted in shifting the popular cultural notion of geographical space,¹⁴⁹ where connection and communication brings closeness and intimacy despite the distance between locations. Many scholars have discussed mobile technologies as devices to transcend the limitations of geography, including those posed by geographical differences in the location of work and home activities. This will be discussed in more detail in the following section.

The second characteristic of new media technologies of interest here concerns what sociologist Andrea Mubi Brighenti referred to as “territorial devices that increase the complexity of all existing territories. Territory should not be conceived as an ‘all-or-nothing’ object but rather as a multidimensional set of relationships defined by prolongations, affordances and events”.¹⁵⁰ From the telegraph to telecommunications, a new territory, a *third nature*, has been overlaid on top of the *second nature*: the physical geography of cities.¹⁵¹ With this third nature—telecommunication—information flow creates an informational landscape that almost entirely covers the old territories, where it possibly also redefines or reconfigures the old territories of urban built environment.¹⁵² Lemos referred to control and access as territories created/re-defined within places by

¹⁴³ Barcus, Holly R., and Stanley D. Brunn. 2010. “Place Elasticity: Exploring a New Conceptualization of Mobility and Place Attachment in Rural America.” *Geografiska Annaler: Series B, Human Geography* 92 (4): 281–95.

¹⁴⁴ Hjorth studied the role mobile media played for students to (re-)connect to place—and particularly their *home*—whilst they were away. By studying the Chinese mobile media application QQ, she argued that *these mobile media are reinforcing the multiplicities of what constitutes a sense of place*. Users of the application were able to reconnect to their family and keep their original ties, which were relocated outside the physical space of home.

¹⁴⁵ Hjorth, Larissa. 2012. “Still Mobile: A Case Study on Mobility, Home and Being Away in Shanghai.” In *Mobile Technology and Place*, edited by Rowan Wilken and Gerard Goggin, New York: Routledge, p.140..

¹⁴⁶ Ibid.,141.

¹⁴⁷ Other examples are TV, radio, and their attendant, mobile media.

¹⁴⁸ Hjorth, Larissa. 2012. “Still Mobile: A Case Study on Mobility, Home and Being Away in Shanghai.” In *Mobile Technology and Place*, edited by Rowan Wilken and Gerard Goggin, 140. New York: Routledge.

¹⁴⁹ Green, Nicola. 2002. “On the Move: Technology, Mobility, and the Mediation of Social Time and Space.” *The Information Society* 18: 281–92.

¹⁵⁰ Brighenti, Andrea Mubi. 2012. “New Media and Urban Motilities: A Territoriologic Point of View.” *Urban Studies* 49 (2): 399–414.

¹⁵¹ Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge.p.134.

¹⁵² Ibid.

information and communication technologies.¹⁵³ He uses the following example: Wi-Fi network access in a public area/park creates an informational territory (people who have informational power can log on to the Internet to produce and receive information) so that it has to be taken into account when to think about a place and its quality. Nowadays, especially within cities, places are expected to have the bases of access and communicational affordance in order to be seen as a good place. In the example I mentioned in Chapter 5, a user of Foursquare, before entering to a Costa café (a place she checks in to usually to study), used to put a check-in to signal the poor quality of communication in that specific place, showing that she would not be available as long as she was in Costa. This example showed how access to information in an urban context and availability are becoming the bases of what is considered to be a good place: we are developing expectations in regard to communication within a place, which should be fulfilled and if not, users normally find a way to signal that weakness of communication to others if necessary. Another example that similarly shows how media technologies are redefining territories of place within the place itself as a negotiation between physical materiality and informational territory is when a tourist uses a tourist guide application such as *TripAdvisor* (2000) and looks for a restaurant: only those places that are already signed up to the application are visible and potentially have the chance to be seen, while other places, although they physically exist, have much smaller chances of being explored. This specific example shows that communicational and informational technology covers the old territory of physical and built environment and place transforms as a result of negotiations among territories.¹⁵⁴ Informational territory changes the place because all places are dependent on the synergy between imaginary, subjective, corporeal, technological and legal territories. “Territory as a term is often understood in terms of control, power and exclusion largely defined as a political device.”¹⁵⁵ Territory as a relational concept does not necessarily address spatiality, and might not be perceived as a spatial tool. Thus in the following I will provide another characteristic which is spatiality, and through a few instances based on my case studies, provide evidence of how these media are spatially transcendental.

Regarding the third characteristic of locative media—spatiality—in Chapter 2 (Streetmuseum) I borrowed an explanation offered by Jansson, where he discussed how each space has a spatial-communicational affordance (textural affordance) and how by changing that affordance, media transcends or alters spatiality. I showed in the case study of Streetmuseum how new media technologies can extend spatiality outside the approaches anchored to embodiment and direct interaction. By providing different visual and sensorial experiences (multisensory_ experience) and by connecting the here and now to there and then (old times, old memories or collective memory), by providing the possibility of mediated and immediate experience, these new media technologies could be seen as spatial transcendental technologies. Place-understanding, as we saw in that case, exceeded the borders of the physical frame and was perceived in relation to outside-of-the-frame connections. McCullough, whilst discussing how these kinds of media technologies are throwing the importance of physical place into question, asserted that although they imply aspects of disembodiment and cause trouble for place and space as we know them, they become spatial in operation and place-based in content.¹⁵⁶

Today, the means to grasp the deeper layers of place reside in understanding the simultaneity of flows and situations which traverse its spatial fixedness. As Mark Tewdwr-Jones argues, “what is more revealing, and now required, is a discourse on spatial change and space-place characteristics as discovered through other stories and spatial representations”,¹⁵⁷ such as what new media practices and technologies have to offer and

¹⁵³ Lemos, Andre. 2010. “Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society” 13 (4): 403–20. p.406.

¹⁵⁴ Lemos, Andre. 2010. “Post—Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society” 13 (4): 403–20.

¹⁵⁵ Pullan, Wendy. 2013. “Spatial Discontinuities: Conflict Infrastructures in Contested Cities.” In *Locating Urban Conflicts Ethnicity, Nationalism and the Everyday*, edited by Britt Baillie and Wendy Pullan, 17–36. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.

¹⁵⁶ McCullough, Malcolm. 2006. “On the Urbanism of Locative Media [Media and the City].” *Places* 18 (2). <http://escholarship.org/uc/item/84x6m3nf>.

¹⁵⁷ Mark Tewdwr-Jones. 2011. *Urban Reflections: Narratives of Place, Planning and Change*, Bristol: Policy Press.

how they already have altered our everyday urban living practices. This newly defined, constantly changing nature of place illustrates with more accuracy the processes of perceiving and understanding place, surpassing the fixedness of classical representations and notions about the stability of spatiality. The reconstructive process generated by interaction with contemporary spatialities produces a new fluctuating re-assemblage of place-relations.

In Chapter 5 (case study of Foursquare), I showed that one of the implications of these media technologies is to overcome the separation of the physical and virtual, such that new possibilities are provided for social/spatial understandings where users' perception of space extends into a hybrid format. I showed that by changing the format and the conventions of interaction, these applications expand and enlarge the context of our activity beyond physical borders, mainly into mediated formats. Through the case study of Foursquare (Chapter 5), I demonstrated that users of locative media can become aware of others' presence through offering mediating mediums—that is, through offering others the opportunity to be virtually co-present. In this format of interaction beyond physical borders, users are consistently aware of others, and interact with them, whilst they might not necessarily be in physical proximity. This possibility of this medium to provide the feeling of co-presence was referred to in that chapter as mediated social co-presence. Mediated social co-presence is evidence of media interactions expanding or extending outside the borders of space, and shows that not all interactions necessarily happen only in physical places.

Moving the Frames of Observation into/within the Socio-Cultural Threads: Understanding Locative Media as a Socio-Formative Sphere

In this stage of the discussion I will move the frames of observation to *within the cultural and social threads of everyday life*. Certain other aspects of media technology will be discussed here, particularly with reference to their operation or impact *from within* in relation to social, cultural and everyday practical and collective issues. This specific view was proposed by Dourish and Bell (2011) as the best view from which to study media technologies, from the angle of everyday use, and from within the cultural logics, where they discuss that media technologies are not acting in a different spheres, but rather that they are produced and consumed within the cultural logics or “series of collective understandings through which space, spaces, and their representations take on particular kinds of meaning”.¹⁵⁸ The emphasis here is to see locative media from a different angle, not as transcending spatiality, territory or geography, but rather as a formative sphere that works within the cultural threads and context of everyday use. Instead of discussing geographical or territorial effects, here I discuss those media as formative spheres defining regulation/interactions.

Approaching and discussing the effects of technology from *within* the spheres of social and cultural practices, as hinted at in the few lines above, Dourish and Bell have argued that our knowledge of the environment is shaped through the way we encounter space, and is mainly framed by *cultural logics* which help to shape particular meanings. These logics themselves are a product of socio-cultural encountering—constructed on action-reaction bases in our everyday life—and this is exactly the context and explicit point at which information technologies meet cultural logics in our everyday social encountering: *Not as a separated sphere, but rather as a socio-spatially constructed interaction*. “Technological mediation supports and conditions the emergence of new cultural practices, not by creating a distinct sphere of practice but by opening up new forms of practice within the everyday world, reflecting and conditioning the emergence of new forms of environmental knowing”.¹⁵⁹ Supporting the emergence of new cultural practices and manners *from within*, Rosenberger used the term *field composition* to refer to the potential of mobile technologies as a constituting medium to recognize and organize the overall structure of one's field of awareness “that *constitutes a part of the manner* in which the user's experience happens [...].The notion of field composition points to a change in the user's overall awareness that occurs as she or he takes up a particular technologically-mediated relation to

¹⁵⁸ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press.pp.130-131.

¹⁵⁹ Dourish, Paul, and Genevieve Bell. 2011. *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing*. MIT Press.

the world”.¹⁶⁰

It is important to note here that places mediated by technological mediums (locative media) do not stand separately or apart from our everyday life, and indeed as Dourish and Bell argue, they provide a new set of ways (sites and occasions) for the physical world to be practised and understood (Dourish and Bell refer to them as technologies for the development of new forms of environmental knowing).¹⁶¹ Locative media technologies open up possibilities of interaction in the context of our everyday world (practices).¹⁶² Lefebvre—as one of the main contributors to how we understand place in relation with practice—noted that space is a social product, and each society—more precisely, “each mode of production, along with its specific relations of production”¹⁶³—produces a space. Moreover, as “each mode of production has its own space, the shift from one mode to another must entail the production of a new space”.¹⁶⁴ Dourish and Bell discuss how the dissolving of virtual information into the physical world does not happen within the uninhabited spheres; it rather enters into spheres that have already been inhabited by users’ everyday practices.¹⁶⁵

As my empirical research supports, virtual/abstract spaces, in both case studies, coupled with lived spaces, produced spatiality and socio-cultural practices that work within the cultural logics of the everyday. In the case of *Foursquare*, representational medium (as a form of abstraction), when used as the basis of everyday interaction, provided alternative forms of sociability, new ways of understanding users’ patterns of behaviour in space. Locative media technologies (especially social networking media), were shown to be socially situated,¹⁶⁶ and alter socio-spatial relations and regulations: now people can communicate, feel, and socio-spatially exist in/through those environments/spheres. I referred to locative media as socio-formative spheres. First they are *socio-formative*, because they collectively and communally construct meanings (e.g. through accumulated social information, shared with friends and family members). And *formative*, because these media have an instrumental effect on *regulating* activities such as meetings, scheduling, visiting friends; *appropriating* time and space interactions; coordinating social activities that affect the way users might communicate and arrange their times based on the possibility of others to be in close physical proximities; and (en-)framing the conventional possible ways by which places were known or experienced. By all these things, a user can experience a constant presence of people who are physically absent. These media technologies are contributing to changing relations of physical presence and absence in newly formed urban spaces, and a changing subjective understanding of what Giddens calls “presence-availability”, or what was referred to as *mediated social co-presence*.

Third, the term sphere is used to embrace the notion that we are passing beyond that stage where these forms of media were used only as entertainment tools. Now, users of such applications live inside this environment/sphere, communicating with non-corporeal presence. It has become a fixture of everyday life where users of these services regulate their activities (meetings points, networks, and possibly mobility decisions) by exercising these mediums and by being simultaneously within these spheres whilst in contact with people who might only be virtually accessible. As evidence of those media becoming constructive spheres, Scott Lash has argued that software and code are no longer just mediating social associations and interactions, but that they constitute those interactions.¹⁶⁷

¹⁶⁰ Rosenberger, Robert. 2010. “The Spatial Experience of Telephone Use.” *Environment, Space, Place* 2 (2): 63–77.

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Lefebvre, Henri. 1991. *The Production of Space*. Wiley.p. 31.

¹⁶⁴ Ibid, 46.

¹⁶⁵ Cited in online journal, written by Michel de Lange, available at <http://www.themobilecity.nl/2011/07/27/review-paul-dourish-genevieve-bell-divining-a-digital-future/>

¹⁶⁶ Adapting the term used by Rowen, here it refers to technologies engaged with social parameters, and issues related to community and place. Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge. p.137.

¹⁶⁷ Cited in Heywood, Ian, and Barry Sandywell. 2014. *The Handbook of Visual Culture*. Berg.p.572.

The idea of the socio-formative sphere is to direct focus onto the constitution of new social appropriations and functions that articulate socio-spatial properties and perceptual implications of integrating mediums of communication and locative media practices in everyday life. This theme helps to discuss from another perspective how locative media can influence place-understanding, through framing interactions; as Heidegger stated, our world is enframed by technology, taken together with a logic of socio-technical systems”¹⁶⁸.

As explained in Chapters 1 and 3, the term *locative media* covers a wide range of practices that involve location-related information. In some scenarios, locative media deals with practising and understanding everyday places, and by providing information about the physical places in different set-ups, that additional information means that places are possibly constructed, or revealed, in new ways to users, causing different levels of environment-knowing.¹⁶⁹ From other observational frames, it affects socio-spatial interactions, and the way users appropriate daily practices. I covered this aspect in the case study of Foursquare (Chapter 4), where users were observed to adjust their interaction and navigation of their personal/social life through representational medium (through check-ins, uploaded images/comments they have shared, etc). Frissen used the term *space-adjusting technologies* to articulate ways in which mobile media provide the means for understanding a sense of place and relationships in both professional and private life.¹⁷⁰ However, as I covered in the previous chapter, transcendental technologies are not just space-adjusting technologies or spatial tools, but based on the frame of observation and viewpoint, they could be understood differently, and that specific choice of word represents only one aspect of that media seen/viewed narrowly and one-dimensionally.

By opening up the possibility of imagination and “presenting the un-presentable”¹⁷¹ and by extending the virtual beyond the limits of representation, by bringing representation into habitable spaces, these forms of media are becoming formative mediums of communication and spatial perception. To support this proposition, as I discussed in Chapter 4 (case study of Foursquare), as a form of bottom-up media,¹⁷² different audiences make sense of daily life by adopting and sharing personal views of people, places and events on related platforms.

By bringing representational medium, personalizing and adopting locative media, users appropriate social interaction: for instance by applying *Foursquare* as a filtering system, a user can avoid unwanted interactions or places. Users can have selective attention to places and avoid places by becoming aware of their existence through mediated interaction on a screen-based map:¹⁷³ if there is a specific activity in any part of a city that a user is not willing to encounter, by checking their location and their further plans of movement, they can act selectively and choose alternative routes (e.g. traffic guide application). It is also noticeable in some other scenarios, when a celebrity tweets her/his location, how this act of sharing information concerning their physical location becomes the motive for fans specifically to interact differently and maybe affect the traffic stream.

In Chapters 4 and 5, I examined how defining our interactions through representational media and through accommodating maps has opened up new ways of knowing about the life routines of others, promoting the

¹⁶⁸ Cited in Arnold, M. 2003. “On the Phenomenology of Technology: The ‘Janus-Faces’ of Mobile Phones.” *Information and Organization* 13 (4): 231–56. doi:doi: DOI: 10.1016/S1471-7727(03)00013-7.

¹⁶⁹ Term used by Dourish, Paul. 2006. “Re-Space-Ing Place: ‘Place’ and ‘Space’ Ten Years on.” In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work*, 299–308. CSCW '06. New York, NY, USA: ACM. doi:10.1145/1180875.1180921.

¹⁷⁰ Valerie, Frissen. 1995. “Gender Is Calling: Some Reflections on the Past, Present, and Future Use of the Telephone.” In *The Gender-Technology Relation: Contemporary Theory and Research*, edited by Keith Grint and Rosalind Gill, 79–94. Taylor & Francis.

¹⁷¹ Term used by Niall Lucy 2000 Cited in Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge.p.137.

¹⁷² Townsend, Anthony. 2006. “Locative-Media Artists in the Contested-Aware City.” *Leonardo* 39 (4): 345–47.

¹⁷³ Frith, Jordan. 2013. “Turning Life into a Game: Foursquare, Gamification, and Personal Mobility.” *Mobile Media & Communication* 1 (2): 248–62.

sharing of opinions and new ways of socializing. Relevant to the current discussion, acknowledging that by adopting location-based applications (*Foursquare* for instance), users can discuss all steps of decision-making within the single environment of the *Foursquare* application (all-steps-in-one): possibilities of meeting up, by filtering choices based on destination/interests, sending a place's homepage to friends/families, commenting on those choices, and finally coming to a decision. They also provide the possibility of checking the availability of others without directly contacting them (through their check-ins) or negotiating the time at which places will be reached, and many other issues only through adopting locative media platforms into conventional interactions and ways of everyday life.

Hence, locative media technologies, by acting at a practical level in appropriating everyday practices, are becoming formative spheres, forming and (en-)framing our interactions. These media platforms, as discussed in the case studies, are becoming an integrated part of social systems through which people read the city and validate places: they are becoming legibility lenses. As I examined in the findings of the *Foursquare* case study, one interesting aspect of these media being integrated into everyday life is the possibility of representing ourselves through location/check-ins and by checking into places, telling others that we found a place that is worth visiting, thus validating some places and appreciating others less; this way we are giving values to places and making them visible to every member of our contact lists. Locative media platforms are becoming more and more integrated as part of the conventional social mechanism, through which we read the city, validate places, define the mobility of agents, and give legibility to locations/places.

Conclusion

The chapter approached a number of discourses regarding place-understanding after new media technologies and mobility. One objective of the chapter was to provide a framework for understanding theories and literature of place, after the advent of media technologies, especially those theories that discuss place as a relational concept. Relational theory of place provides generative understandings of relationships between technology and place and shows how technology is more and more becoming an undeniable element of the assemblage defining place. Adopting the existing approaches and extending them wherever necessary by employing my own analytical/conceptual tools, I represented two main sets of understandings regarding how technology and place interact. In addition to that, these analytical tools/tactics have helped me to consider which is the best way to delineate these locative media technologies: Should they be pronounced as transcendental technologies (technologies that transcend the limitations of materiality and perception)? Or rather, are they better characterized by locating them within and in relation to other socio-cultural aspects of every day: as formative spheres? Considering the analytical tactics employed, I have argued that the best approach to study locative media and to explain the effects of technology on place and place-understanding is to first define a frame of observation, because the knowledge that is gained is intertwined with the frame that is chosen and it changes from one frame to the other.

The major parts of the discussion have been drawn from a number of disciplines involved in exploring the consequences of media technology on place-understanding (often discussed from only one aspect of spatiality or geographical effects of media, communicational aspects, social aspects and so on). Here, by borrowing the method of approach from architecture, as a way of surveying *over and above*, and at the same time able to zoom-in and see things *from within* (in detail), the discussion served to provide a better understanding of how place is perceived differently after the development of new media technologies and mobility, and why place-experiences are less contingent on physical embodiment, and more perceived as a relational yet frame-based concept. My contribution here is to highlight that place-understanding cannot be perceived prior to the act of defining frames of observation, and in order to get a better insight into place, I put place-understanding in relation to both power of technologies in changing our knowledge as well as frames of observation. In doing this, the chapter contributes to place-understanding by examining and presenting its interconnection to technology, and frames of observation which also forms the crux for approaching the multiple perspectives adopted in this study. These multiple perspectives provide a comprehensive framework for studying and

approaching place-understanding after media by bringing different kinds of thinking into consideration: *from over and above* and *from within*.

In the *over and above*, new media technologies were considered as spatio-temporal transcendental technologies that expand place-perception beyond the limitations of the physical-material, and not being attached to place to consider aspects of imagination, communication, connection and representation, as tools for producing spatiality. By blurring boundaries between lived/imagined, local/global and inside/outside media technologies, they leave place-experiences in a state of constant flux and ambiguity. In the *from within*, by zooming in through the *socio-formative sphere*, various socio-spatial implications of locative media as a form of socially constructing sphere were considered. Through this view, it was discussed how these mediums become spheres which enable and regulate various kinds and levels of socio-spatial interactions and appropriations. The further implications of those mediums on urban studies and spatial practices can potentially offer significant insights into how they can be adopted and appropriated in contemporary urban practices. I conclude by saying that mobile media, as transcendental-yet-formative technologies, are helping to facilitate our understanding that place cannot be perceived prior to the act of defining frames of observation.

CHAPTER SEVEN: CONCLUSION

This research, by having an interdisciplinary approach and by borrowing methods and theories from media studies, urban studies, mobile studies and mobility, human geography, ethnography, mobile methods, and online ethnography, has explored some aspects of mediatizing urban places with virtual materials and representational medium. This thesis contributes to the ongoing theoretical discourses regarding place-understanding after new media technologies, and its interconnected issues of mediation, media, embodiment, mobility, technology, and virtual community. Having an interdisciplinary approach, and through studying works done in other disciplines (including communication and media studies, human geography, sociology, urban studies, and visual studies) and gathering a range of ideas related to technology, locative media and architecture, place, spatiality and mobility, the objective was to reveal the complexity of issues that are now integrated into place-understanding in contemporary settings.

By acknowledging that the “basic assumption can always be challenged or reinvigorated by new ways of thinking from elsewhere”,¹⁷⁴ a constructive use of terms and themes from other disciplines was conducted. In some places, in order to clarify the inherent meaning of phenomena or of complex ideas, and in order to ensure that the meaning is fully conveyed, I gave them a name. It was also to differentiate any theme/term from similar and neighbouring concepts. In regard to this act of naming, Wilken stated: “One way to give form to emerging theoretical developments,[...], is to grant them [a] name”. : that means by designating an enclosed set of various yet related ideas within a term, give form to emerging phenomenon and all inherently involved issues.¹⁷⁵

Contributing to the congregation of interdisciplinary studies and discourses, and by identifying the limitations and potentials of studying a subject outside comfortable architectural disciplines, this thesis borrowed new ways of thinking about the spatial potential of media and brought “fresh perspectives”¹⁷⁶ to discourses involving place and media. My intention was to bring into dialogue those disjointed areas and by combining different ways of thinking about mobility of text and context, medium and place, provide supplementary understanding of place-experience and place-attachment. The thesis contributes theoretically and conceptually to the understanding of place among people/users embedded in mobile technologies, a technology that leaves the immediate physical locality of the person in question. In a broader frame, by bringing together a number of theories related to spatial experience, mediated-experience, place, and media studies, it contributes to the field of social science and human geography and media studies. One of the main contributions of this thesis was to articulate illustrative theory that demonstrates the current states of thinking in practice that concern locative media. The audience of this PhD includes those from mobile media studies and urban studies involved in exploring the spatial potentials of media, researchers concerned with mobility and the agenda of the ‘spatial turn’: all different forms of spatial practices resulting from convergence of mobile media and mobile people.

In line with architects’ interests in the potentials of alternative spatialities and practices engaged with representation, mediation and the spatiality offered by technology, this PhD engages with some forms of spatial implementation and usages of technology, and gives a detailed examination of a number of newly introduced locative media technologies. Here I study the potentials of abstract spaces and representational mediums integrated into spatial understanding of space; I provide some evidence on how spatial understandings could be practised/alterd through integrating some aspects of medium and mediation, and how by applying different forms of representation we can expect the development of new forms of social and environmental knowing, and a change in experience of spatiality or new understandings in regard to those practices dealing with place and spatiality. Challenging the ways urban spaces could be conceived and perceived, those media technologies were also discussed in terms of changing the communication levels of

¹⁷⁴ (Moran, 187) cited in Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge.p.2.

¹⁷⁵ Wilken, Rowan. 2011. *Teletechnologies, Place, and Community*. New York: Routledge.p.127.

¹⁷⁶ Ibid.p.2.

space, and providing alternative and flexible forms of sociability and new forms of interaction, and possibly generating different relational understandings of places through the juxtaposition of representational medium and physical places. The juxtapositions of representational medium (e.g. maps, images, hypertext, etc) with the material-physical world could create different spatiality (socio-spatial understanding/spatial practices) that cannot be known, or mapped, without knowing how representational mediums are interacting with urban (real) spaces and how they are involved in practising space and spatiality. Maybe here is the right place to consider suggesting a term that explains the form of spatiality that is created from juxtaposition of material and immaterial. Thrift used *automated spatiality* partly to refer to the same issue but I feel, for what is under scrutiny here, instead of signifying automation, machine and technology, a term should be used that signifies mediation/practice/doubling. De Silva used *hybrid experience*,¹⁷⁷ which is one of the terms closest to conveying the meaning I was seeking, but still, the term lacks representing the social aspect of the experience, which is one of the strongest aspects of the experience. Probably *mediated spatiality*, or *socio-mediated spatiality*, or *soft spatiality*, would be better terms to be used for referring to the same phenomenon.

There is an equal contribution to empirical studies and theory building on discourses regarding media and place. To discuss and illustrate the process of developing and doing this PhD, I started with theory: theories related to media in particular, plus theories of 'place and spatiality'. *Place-making potentials of media*, *spatial-transcendental technology*, *image of place*, and *live montage*, are the themes of theories that this PhD either empirically tested or has helped to develop. I found empirical data to support existing theories: aligning, testing and supporting discussions that either had only been set out theoretically, or had thinly related empirical studies exploring them. I also developed and tested a number of innovative tools (methodological innovation) to compile knowledge about under-studied applications. Detailed study of those applications not only gave explanations to the implications of those media, but also the knowledge gained from that process fed back to theory and the existing discourses concerned with the place-making potentials of media and the spatial implications of locative media.

Reconfiguring the structure of the thesis as presented above, in what follows I will break down the contribution in another way, describing a journey I took throughout the PhD, *based on the themes* and organized into two main categories: first, *identifying and testing theory*, and second, *developing tools for ethnographic studies*. Discussing concerns and questions through this theme-based approach helped to negotiate the key theories, and the significance each has in explaining media involvement in spatial understanding. It also aided the empirical understanding of contemporary urban technologies.

Identifying and examining theories related to locative media through case studies and theoretical chapters

As I explained in the case study chapters (3, 4, 5), the analyses and findings of cases supported the foundation theories and built on and extend those assumptions and discourses. By bringing snapshots of the complexities of urban spatial practices involved with media, a theoretical theme-based understanding of interactions and interconnections between spatial technologies and notion of place was provided. Through theme-based chapters, I tried to highlight the important and relevant discussion on each theme by either providing supporting relevant evidence or related theories that revealed the complexity of those theories involved. Each chapter contributes to either testing theory (through empirical study) or building on existing theories of locative media. Since the field of locative media is very new, theories and ways of discussing related phenomenon are not strongly developed, thus whilst examining existing methods of describing each issue and phenomenon, whenever the terms or themes were not appropriate or practical to discuss those issues or observations, I adopted a term or a theory. I developed a vocabulary to explain the complex phenomena of: live montage, mediated stage authenticity, socio-formative sphere, and trans-medium methodology.

¹⁷⁷ Silva, Adriana de Souza e. 2006. "From Cyber to Hybrid Mobile Technologies as Interfaces of Hybrid Spaces." *Space and Culture* 9 (3): 261–78. doi:10.1177/1206331206289022.

Live montage as setting up section: this chapter helped to ground the text in relation to a wider context concerned with media and place, studies that have already been circulated and which discuss related interests and concerns. Live montage was a way of exploring aspects of contemporary urban space and practices, a way of setting a wider understanding of the current state which is an amalgamation of media practices and visual technologies in all forms—including screens, projections, video projections, game hubs, etc—and the urban mobilities of bodies or information flow. It also demonstrated the established theoretical background of the study.

Urban implications of locative media:

The contribution of this chapter to architectural discipline was to provide an insight into the possible ways of adaptation and potential implications of new media technologies as tools and mediums for architects to communicate with community of users and planners: tools to generate organic cities, or as mapping tools for site analysis. By discussing these three categories of application (urban electronic tags, user-generated maps, social media), the chapter mostly gave an insight into how such newly introduced platforms work and act in relation to architecture. The chapter also set out what we could expect from representational medium (maps, images, multi-text) in terms of altering spatiality, appropriating existing urban spaces (e.g. urban transit space), or becoming intermediary platforms, or linking tools between communities, architect and policy makers.

What I discussed in this chapter was effectively the opening of a discussion of how spatiality could be produced through integrating some aspects of representational medium, and how by applying different forms of representation we can expect the development of new forms of understanding of physical spaces. It is becoming hard to distinguish the extent to which spatiality perceived by an urban traveller is a result of on-site potentials of the material environment or the possibilities that technology bring to the site.

I set out the spatial implications of a number of representational mediums and how they effectively mediate spatial experience. Going through different examples of locative media and their implications on urban experience from different perspectives, the aim of the chapter was to serve as an introduction to the key concepts and terms of reference deployed in the following case-study chapters. The applications that were covered represented aspects of place through their visual-representational mediums, and in those cases, representational medium was part of the experience of urban space. After that, through categorizing the findings into three main themes, I discussed the possible urban technological implications of locative media from an individual/personal level through to that of governance and planning. The potential alternative spatiality of those three categories, and issues related to them, were later examined and discussed through the case studies. Those three main categories, and issues raised from studying them, determined the selection of case studies.

Case studies:

Case studies not only acted as sites in which to pursue empirical studies, but also as instruments to test and understand theory. Here, case studies worked at different levels: they provided a set of lenses to refine the initial research questions I had in my PhD, and polished them based on the context; they also acted as generative sites to explore, produce and test socio-cultural knowledge of current technological use of locative media.

The first case study was *Streetmuseum* as an example of locative media application. Through this particular case study, socio-spatial implications and patterns of using an augmented reality application were explored (which negotiated the social and behavioural norms of using this application in real time and promoted the

discovery of associations between the contents of locative media and the physical urban context). In parallel with that, I developed the concept of the place-making potentials of media, based on the close reading of relevant theory. Besides examining theories of hybrid space and authenticity of media experience, this case study helped to develop the theory further, and built on existing theory. I discussed how media could alter the spatial experience of places by bringing cultural and social aspects of (urban) context into play, in real-time, and by making visible hidden narratives of space. Those media, by linking memory and personal subjective opinion with collective memory, connected users to the materiality of urban spaces. This in-depth study of Streetmuseum supported the investigation of the dimensions that new media might bring to a place, by overlapping urban materiality with immaterial layers of images or films, and by effecting the associations of users with that place. Here, representation becomes part of the sensory experience of place, and by that I mean that locative media, by defining new frames to explore familiar spaces, allowed users to perceive space differently. Since the urban explorer experiences the city through the lens of location-based applications—which encompasses screen-based images and texts—media, by bringing representation (as a virtual potential) into the moment of exploring a space involved in the process of shifting from pure optical vision into an augmented medium.

The idea was through close observation (zooming in) of the spatial implications of media, and establish the correlation of observed behaviour against the existing theories. By having a theoretical frame, this allowed focus to be placed on existing theories related to the particular case under study, and to examine aspects of those existing theories: by doing this I was able to develop a clearer review and to discuss whether those theories were applicable or not in my cases, and if so to what extent.

Through discussing relevant theories, and based on the findings of this specific case, I discussed the concept of '*place-making potentials of locative media*' to emphasize the inter-dependency of place and 'on-site media'. I also showed that through the usage of media in urban contexts, the borders and values of familiar places could be (re-)defined according to the practice of interface-dependent place production, or in other words, through the potentials of interface in offering different types of place-making. By placing the interface of information with place at a *local level* and relating it directly to location and bodily-corporeal experience, that abstract information, for a user, exceeds being representations of physical places, and become part of experience, constructing strong dependency between place-experience and virtual information. Based on the findings of this case, I can say place-experience after accommodating new media technologies is considered to *have a media-interactive fabric where media with immaterial quality contributes to creating and altering the stage, borders and situation of an activity*.

From a slightly different frame, I negotiated the potentials of media in providing a stage for representation to exist simultaneously with the site: as the object of referent. I approached the reconceptualization of authenticity proposed by new media that challenge the conventional ways of viewing and have the potentials of creating relative meanings by simultaneously displaying the object of referent and its representation.

Thus, we can say what media explicitly does is to offer authentic experience for users (subjects), which might or might not originate from an authentic site/object, but rather by providing a stage for representation to exist with its original object, a unique experience is constructed from a fusion between self (subject) and object, that also relies on elements of orientation, viewing, etc. This authenticity, which results from implications of images in its new format of *augmenting the real*, puts object-subject relations into question or at least opens up space for renegotiation of those relations.

In this new format, new elements are involved in the production of authenticity of place-experience. Media technology, viewing, representation, directions and orientations towards the augmented images are becoming new aspects involved in production of authentic place-experiences.

The authenticity of the experience does not come only from a real object or a site of a building; nor does it necessarily come from the representation. It happens at the stage created for both to exist simultaneously—

created through the assemblage of both image as a reproduction and object of reality, and made accessible through the medium of mobile screen, accessible to the subject from particular positions and orientations.

I believe incorporating media into this equation offers a different form of authenticity; here, the type of authenticity that is offered for an urban explorer challenges the conventional free viewing of an object: now, it is reliant on correct positioning of the viewer in relation to the object and its representation. As William Uricchio states, through the lenses of augmented reality applications, there is no such a thing as innocent gaze, “the act of gazing and the views consequently seen are transformed into a process of signification as images are laden with particular meanings.”¹⁷⁸

The integration of *soft space of data* and *hard space of architecture*¹⁷⁹ offers a different spatiality that might sound unfamiliar to conventional architects who only concern themselves with the materiality of architecture, and thus undermine the potentials of media/immaterial aspects of architecture to provide different spatiality. However, locative media is finding a significant place among architects that do not alienate themselves from consideration or testing of potentials of this technology either as a tool/medium (e.g. to communicate with users, develop awareness, make connections to city, and so on) or as a strong medium/ingredient of assemblage that could provide or design new forms of place-experience. It seems that with the arrival of these new technologies and their consequent opportunities, we are at the stage where, as architects, we should start to think of the implications/applications of those media. Some examples of new adaptations were provided in Chapter 2’s section on urban implications. Different forms of developments in sensors, augmented reality applications, GPS tracking systems, annotation mediums, and many other forms of mediation, all have effects on the built environment and thus things are in a state that we have never experienced before. We have to think more about the opportunities they offer at the same time, critically examine the direction in which those technologies are taking urban living: “if we do not think critically now about the technologies we put in place for the next centuries of cities, we can only look forward to all the unpleasant surprises they hold in store for us.”¹⁸⁰ Therefore it is important to think and design for the impacts and the ways these newly introduced media can be integrated in architectural experience, not as a tool for accumulating data, but rather as a platform to generate different spatiality and place-experience.

Second case study: Foursquare

Moving on from the Streetmuseum application as an augmented reality application where the relation between virtual/symbolic materials and materiality of urban space was tangible and direct—where the interaction was occurring at the stage created from incorporation of object and its representation—I studied Foursquare. In the case of Foursquare, whilst the application affected the experience of space, the relation between representational medium and urban space was not direct: by that I mean representation was not directly augmenting experience and the effect of virtual material was passing through the *Image of place* as a channel or a medium, between information in the virtual and materiality of physical.

From a different viewpoint, the visual/symbolic material of the Foursquare application and its *representational mediums of locative media contribute to the construction of identity of a place that is detached from, yet in connection with, the physical realm.*

Two related chapters were extracted from the findings of this study, and discussed two main contributions. First, through the notion of *image of place*, I investigated the influences of representational medium (e.g.

¹⁷⁸ Cited in: Uricchio, William. 2011. “The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image.” *Visual Studies* 26 (1): 32.

¹⁷⁹ Lorenzo-Eiroa, Pablo, and Aaron Sprecher, eds. 2013. *Architecture in Formation: On the Nature of Information in Digital Architecture*. 1 edition. New York: Routledge.

¹⁸⁰ Townsend, Anthony M. 2013. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company.

applications as platforms) on image formation, or the construction of image of place. The communally shared information (knowledge of places, shared in virtual mediums) could become a generative mechanism or motive to move people in space, enabling people to appropriate social interactions, to increase the functionality and legibility of places in terms of making sense of the urban environment, and to perceive place, or assist them in their process of decision-making. New media technologies have opened up possibilities for image of place to come into existence, as another dimension of place itself that exists detached from the physical place located instead within the ecosystem of media. Regarding the interests of architects and our familiarity with concepts of image of place, it is conventionally discussed as an image constructed and developed within the minds of users of built environment, by emphasizing media and its potential to produce a different image of place. I recognized the possibility of integrating locative media in the formation of image of place outside the conventional ways, emphasizing mediums as sites of production and formation of image of place. Through adopting the concept of Narbs, I theoretically discussed the construction of image of place within medium from small blocks of inter-subjective data. I discussed how the image of place within a representational medium, specifically in the case of Foursquare, exists within the virtual but the effect of that image exceeds the virtual and communicates with real/physical places, evolving as a driving mechanism that helps not only to create a condition for making decisions (to choose or avoid places) but also to engage with them meaningfully in terms of appropriating social interactions, as well as enabling a multi-sensorial perception of place-experience (Pink 2011). The effect of the medium passes through the channel of the image of place as a linking concept, and if the communally constructed image of place is convincing enough, users will decide to visit and engage with that place. The image of a place constructed within the representational medium, thus serves as a link connecting the virtual and symbolic material with the physical places.

As part of suggesting future studies regarding locative media applications and their impact on image formation, since the number of studies from an architectural point of view are very limited and they have been only discussed from tourist and marketing studies perspectives, or for branding strategies, other potential trajectories for this study could be to negotiate the process of defining and exerting value on places, as potential implications on urban planning, governing and policy-making aims and objectives. The possibility of such an application giving recognition and value to places is an important factor that needs further detailed study for its implications in urban studies.

Mediated social-co-presence

In the second part of studying Foursquare, the aim was to address the necessity of embracing the change in relations between new social media technologies and perception of places by discussing the potentials of the representational medium—*especially maps*—to mediate the socio-spatial aspects of place-experience.

By acknowledging that the theories of place-experience and place-attachment do not deliver the essence of the situation in which social-media entered urban experiences, or where mobility of text and context are converging, I studied the concept of mediated social co-presence: explaining that the development and adaptation of tracking systems coupled with accommodating the representational medium,¹⁸¹ which enables place and place-understanding to be perceived in a more relational nature and as more dependent on medium. I argued that medium is becoming actively involved in the practice of place-experience and sense of place. What I also discussed was that the application of Foursquare and similar LMSN mobile technologies mediate physical places but not only through providing context-related information or what is also referred to as generated content, but also through providing networks between users of this social media (*in-group*

¹⁸¹By representational medium I refer to the ways information is represented within each application and how it interacts with reality. Representational mediums mainly comprise a number of elements (maps, images, text, annotations, notifications, etc).The visual/representational aspects of each interface differ from one application to another.

experience), and constitute a new communicational yet relational understanding of place. Because of the accommodating aspects of representational mediums (maps, visual material, comments, text), the assemblage of social media with the potential of tracing users' activities now could enable other forms of presence that influence people's place-experience and their behaviour (mainly the way they decide on visiting places, avoiding unwanted encounters and knowing where friends are). *We can say that the traditional feeling of presence (concrete presence)¹⁸² has transformed, due to "technologies of imagination", towards creating "communities of sentiment", groups that "imagine and feel things together".¹⁸³* I discussed how mobile media are evidence of the phenomenon that is occurring of mediums getting more involved in the way we perceive/understand/interpret the world around us, and my study showed that the medium of map is involved in the way users of the application interpret their friends' patterns of behaviour, especially if they observe their interaction over a longer period. It suggested new/alternative methods of sociability and social/environmental knowing.

I articulated the results of the change as: alternative flexible forms of sociability. As the case study of Foursquare showed, *representational medium is forming and framing this interaction, mainly by changing the attitude of users and encouraging them to share their physical location and represent themselves to others. It also changes place-experience by putting users in constant contact with people and places (in-group experience) and through simultaneity of presence/perception of a place and dissemination of being there. Those media are also becoming regulating devices to arrange meetings and daily visits.* Coordinating mundane social activities in more flexible ways, keeping in touch with friends and family, and information-oriented uses of social media may constitute more common instrumental approaches to social media.¹⁸⁴ *Here, I mainly approached mediated social presence as the key concept and through the frames of this concept I discussed that Foursquare, by integrating aspects of the representational medium, enables users to perceive/interact with maps as a more relational medium.*

As a result of this integration of the medium of dissemination and presence in experience of spaces, maybe we should start to think of altering the factors defining social and collective factors of place-attachment, and now add aspects of medium (e.g. mediated social co-presence) and the feeling of in-group experience or having the possibility of self-representation as primary factors or stages for place-experience. Maybe we need to put mediated social co-presence as a factor or the foundations defining our satisfaction of urban place-experience.

Locative media technologies: from spatial-transcendental technologies to socio-formative spheres

Moving on from the case study chapters, the contribution of the discussion chapter was to develop theory and provide a framework for understanding theories and literature of place, after the advent of media technologies, by implementing *an architectural method of approaching from 'over and above' and 'from within': to zoom-in* and see the implications of those media from within the cultural frames of every day.

The major parts of the discussion have been drawn from a number of disciplines involved in exploring the consequences of media technology on place-understanding. But the method of approach came from architecture, as a way of surveying *over and above*, and at the same time being able to zoom in and see things *from within* (in detail). The discussion served to provide a better understanding of how place is perceived differently after the development of new media technologies and mobility, and why place-experiences are less contingent on physical embodiment, and more perceived as relational in nature.

¹⁸²This term was cited in Crang, Mike, and N. J. Thrift. 2000. *Thinking Space*. Psychology Press.p.377.

¹⁸³ Appadurai, Arjun. 1996. *Modernity at Large: Cultural Dimensions in Globalization*. Minneapolis, Minn: University of Minnesota Press.p.8.

¹⁸⁴ Bechmann, Anja, and Stine Lomborg. 2013. 'Mapping Actor Roles in Social Media: Different Perspectives on Value Creation in Theories of User Participation'. *New Media & Society* 15 (5): 765–81.

Mobile media helped to facilitate an understanding that place cannot be perceived prior to the act of defining frames of observation and in order to get a better insight into the intersection of new media technologies and place, I suggested defining the frame of observation first, and that because, by each change in the frame of observation, new understandings would consequently be provided. Two frames were chosen and thus, two understandings were provided.

In the *over and above*, new media technologies were considered, as spatial transcendental technologies (transcending spatiality, geography, territory). This frame enables us to understand place-experience beyond the limitations of physical material, where aspects of imagination, communication, connection and representation become tools to produce spatiality. By blurring boundaries between lived/imagined, local/global and inside/outside, media technologies are leaving place experiences in a state of constant flux and ambiguity. In *from within*, by zooming in through the *socio-formative sphere*, various socio-spatial implications of locative media as a form of socially constructing sphere was discussed. Through this view, it was discussed how these mediums become spheres which enable and regulate various kinds and levels of socio-spatial interactions and appropriations. The further implications of those mediums on urban studies and spatial practices can potentially offer significant insights on how they can be adopted and appropriated in contemporary urban practices.

Adopting tools or developing them further

Because of the nature of this study, focusing as it does on new phenomena that have only recently become recognized and consequently discussed, I needed to adapt old methods, making new alterations to these in order to be relevant in this changed situation. I conducted a multi-methodological approach and developed tools/methods that responded to the needs of this study.

My contribution in terms of adopting and developing methodology was to define a specific method which I referred to as a *trans-medium methodology*, where through this concept I offered an insight into the possibility of the interconnected relations of mediums and meaning production and I suggested that in order to generate new meanings and overcome the limitations of mediums involved in recording, analyzing and representing information, to transit back and forth between mediums. By transiting between mediums that are conventionally used separately to collect/analyze/represent data, there is a chance that hidden information can be revealed; that information that was otherwise hard to obtain. The contribution of this methodology was to draw attention to the potentials of the act of transiting as a way of creating an exploratory space.

I discussed how since each medium has its specificity, its unique capabilities/affordance, by moving from one medium to the other, the researcher can overcome the limitations of each medium, and its constraints, and thus this act creates a more complementary and dynamic exploratory space.

The significant aspect of methodology applied in the second case was to combine a few different methodologies. The *multi-method* data collection included *mappings and ethnography*, *artefact collection*, *semi-structured interviews*, and *the processing/visualization of check-ins*. The multi-method approach also involved artefact collection (snapshots of users' activities as well as screenshots of different methods of searching for venues, lists, tips, etc.) and behavioural pattern study: collecting users' check-ins over a period of five months. The study aimed to gain the best insights on the emergent practices of engaging with Foursquare; it was also conducted to understand how the virtual medium of representation was involved in the experience of space, and how representation and reality communicate. One of the main steps of this study was to observe users' patterns of use. For this purpose, artefact collection methods were chosen. This method of observation dealt with virtual materials and artefacts, and as the observer did not necessarily need to communicate directly with users or participants, but mainly through observing patterns of interacting with the app, the observer developed understandings of the process. Visual materials were thus collected from screenshots, over the course of a five-month period. This method facilitated capturing the complexity of interaction and usage of the application by freezing the moments of engagement through screenshots. One of the other significant parts of my work was to get better insight into users' patterns of use, through visualization of check-ins. I took part in a

Processing course to develop appropriate techniques of data visualisation, and by using Processing (having asked all participants to submit their 25 check-ins, two or three times over a course of a three-month period), the collected data was used to produce a data visualisation map of users' check-ins. By using the Processing program, users' daily usage of this application was studied to show daily patterns, and their regulations of use on a daily basis.

Through combining those different ways of collecting and visualizing data, used in combination with more accepted methods of observation and survey (interviews) I gained a better understanding of the sphere of application that covered online and offline socio-spatial practices.

Limitations of the research and ideas for Future works,

Choosing the right application for case study, and finding willing participants who use locative media applications that possibly lived in Sheffield, were the two difficulties that this PhD faced. At the time of doing this PhD, when I wanted to decide on the choice of case studies, limitations in number of users, and difficulties in finding relevant and practical applications that best replied to the initial questions, regarding place and spatiality, were major obstacles. And in order to overcome that limitation, I decided to extend the length and the depth of my observation and instead of collecting bigger numbers of participants, I developed the involvement of participants and conducted a better in-depth study. Thus I managed to keep my connection with them and asked them regularly to feed the study with their updates and check-ins.

Regarding the conducted Internet ethnography of Foursquare, this information was collected through screenshot recordings, subjective observation and through interviews, in which I was, justifiably, involved a great deal. I believe if instead the process was conducted through running and writing a program/API script, to collect all those data directly from the Foursquare data sources, it would have surely produced many other interesting insights regarding users' choice of places, the words users apply to express their emotions, times, regulations, and patterns of interactions with space and place.

I have conducted the study based on only 3 categories of applications, (my priority was to look for applications that have incorporated the medium of maps to their interface), but if location-based applications are approached and categorized from another viewpoint, for example, from a particular discipline: (e.g. social, cultural, architectural, tourist-related, etc), or based on implications (game implication, entertainment, tourist, etc), then surely many new exciting insights will emerge.

Other possible lines of research enquiry might be to examine the relationship between narrative of locative media and its possibility to become a repository of information, and to see how applications with the medium of annotation/tagging could become a critical tool, or conceptual sites for architects/researches to examine user's associations/relations with the place and to see the possibility of those applications to become a repository (of site-related data) or to be considered as tools for site analysis.

Future research projects can also look for the innovative ways of integrating locative media application to enhance the importance of physical places—in a way to consider potentials of locative media as a regenerative tool that enhances values of urban spaces (for example, the researcher can look for the potentials of locative media platforms that encourage exploring/visiting part of the urban contexts that are left abandoned, and look for ways locative media can give value back to spaces that need development/improvement).

We are at the beginning of the path to exploring locative media applications for urban and architectural purposes. One research area could be to explore specifically the possibility of producing/altering urban place-experience.

Studies can lead to understanding the importance of the temporal aspect of architecture, and thus design for temporal engagement/experience of urban space. Parallel to conventional architecture, which deals with materiality, new branches can be established that study temporality and potentials of virtual layers to remediate

the built environment and architecture; to reduce the hardness of material with softness/excitement/possibilities of the virtual layer.

Therefore it is important to think of implementing as well as designing for those impacts/possibilities and the ways those new introduced technologies can be integrated in architectural experience, not just as tools for accumulating data, but also as a platform to generate different spatiality (temporal/momentary spatiality) or new socio-spatial understandings.

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