

**Locative Histories: exploring the continued influence of early Locative Media Art**

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**Abstract**

This paper, which draws on aspects of my doctoral research, traces the influence of early Locative Media Art on the current form and application of location-aware technologies. The mechanisms and impulse for this influence are introduced and analyzed and it is proposed that they point to new approaches in the consideration of the agency of Locative Media art.

I return to the origins of Locative Media at the Karosta workshop and the ambitions of early practitioners to argue that the practice was based on a prescient analysis of the potential for ubiquitous networked location-awareness. From this analysis was developed an ambitious program aimed at repositioning emergent locative technologies as tools which enhance and augment space rather than surveil and control.

It is demonstrated that Locative Media art projects have foreshadowed all of the key categories of current location-aware applications and services. This is not co-incidental but is, I suggest, the result of an intentional desire and associated actions to shift the meaning of these technologies. As location-awareness has become part of the everyday I advance that the forms it takes and the ways in which it is employed are co-constructed by Locative Media art practice and that this continued influence represents the agency of Locative Media Art.

Drawing on Krzysztof Ziarek's treatment of avant-garde art and technology in *The Force of Art* (2004), STS, software studies and their surrounding debates, I build an argument for this agency and explore the mechanism for this influence. While this influence is historical I contend that once its pathways are fully understood it can be sustained or renewed with future emergent technologies and propose that this approach offers new paths for the consideration of media art.

**Keywords**

Locative Media, situationism, lefebvre, urbanism, new media art, mobilities

## Introduction

In this paper I return to the origins of Locative Media Art and trace the influence of these artistic practices on the form and application of location-aware technologies as they enter the mainstream. The argument to be made is that artistic practices which engage with emergent technologies at an early stage - while they are still in the period of interpretative flexibility to employ a concept from SCOT<sup>1</sup> - have the power to shape these technologies and to expand the range, influence and nature of their application before they are stabilized and become part of the everyday with clearly defined meanings and understandings attached. The case of Locative Media is of particular interest in this respect as it has followed the unfolding of location-aware technologies as they transitioned from military to consumer technology. It is possible to trace the emergence of location-awareness as it becomes part of everyday experience and demonstrate the ways in which Locative Media has co-constructed the technology, producing outcomes which are different than what might have been.

## What we talk about when we talk about Locative Media

Firstly it is necessary to establish what it is we understand by the term 'Locative Media'. Locative media is an art movement which arose in the early 2000s, it was associated with a prescient analysis of the potential of location-aware technologies and exhibited a desire to employ them as platforms for artistic creation.

The term 'Locative Media' is widely accepted to have been first coined by Karlis Kalnins at the 'Locative Media Workshop : Mapping the Zone' event which took place in an abandoned Soviet era military base in Karosta, Latvia from July 16th to 26th, 2003 (Galloway, 2008; Hemment, 2004; Tuters and Varnelis, 2006). The term was originally employed to distinguish between the questioning artistic uses of location-aware technologies from their instrumentalized commercial and military uses. The proposition was that locative technologies, which had at this point only recently become widely available for civilian use, represented a fundamental, perhaps even paradigmatic, shift in the perception and understanding of geographic location. A central concept of Locative Media was a recognition that the artistic uses of these technologies had an important role to play in the opening up of the possibilities of these media to everyone.

It is important to situate Locative Media as a broad set of practices, which engage at the technical, social and critical level, united by a shared vision of the potential for location-aware technologies. At one level Locative Media can be thought of as artistic practices and approaches which engage with an expanding set of locative technologies such as, but not limited to, GPS, Wi-Fi, cellular telephone networks, bluetooth, RFID, mapping, an ever increasing variety of geotagging applications and platforms as well as new location-aware applications and technologies which will become available in the future. These technologies in turn enable an expanding group of location-aware devices; portable GPS units, mobile devices such as smartphones and tablets, laptop computers, and the latest digital cameras and recent web browsers. In addition to these devices which are actively location-aware there exist a myriad of devices which are passively location-aware, that is they can record a user's location at the time of usage for example transport smart cards, electronic toll road cards, credit cards, store loyalty cards and so forth (See Greenfield, 2006; Kitchin and Dodge, 2011).

This definition can be further expanded beyond the hardware level to that of social and critical practices by proposing that Locative Media has a dual approach. Firstly, it is a set of practices

principally, but not exclusively urban based, which seek to renegotiate, re-imagine and re-enchant urban space through the application of location-aware technologies to develop novel and experimental methods for navigating, exploring, experiencing and being in the city. Secondly (as Ben Russell suggests), Locative Media can be considered as providing a framework for critical engagement which re-frames locative technologies, shifting their meaning. In this way it has a role to play in the shaping of these emergent technologies. Locative Media art practices are thus enabled through the affordances of locative technologies but also represent an ongoing critical engagement with the technologies and their evolving modes of operation. Crucially this critical engagement acknowledges that it operates within the parameters of the technology without seeking to disavow this connection or adopt a position of distance or separateness.

When the term was first employed, while it was acknowledged that Locative Media could encompass a diverse range of techniques and approaches, the Global Positioning System (GPS) was identified as being of the greatest significance. GPS had only recently become a consumer technology with the lifting of Selective Availability<sup>2</sup> in 2000. GPS enabled practices were singled out as representing what Bleecker and Knowlton (2004) described as "an exciting" set of practices which couldn't have occurred without the GPS system and "its network of satellite and military operations support". It was the novelty of these practices, their appropriation of what was a military system for creative purposes, and most importantly the fact that their very existence depended on a functioning GPS infrastructure which set them apart. GPS is a space based positioning and timing service, a military technology<sup>3</sup> which came with its own meanings and embedded usage patterns that emanating from this past as a specialist technology with a narrow fixed meaning. I will argue that Locative Media in its initial analysis of location-aware technology saw an untapped potential for location-awareness beyond its traditional application, but fully recognized that in order to realize this potential they would need to expand the range of acceptable uses and, in effect, change the meaning of the technology.

### **The Headmap Manifesto**

A foundational text for Locative Media text is Ben Russell's 1999 *Headmap Manifesto*, written when Selective Availability was still operational. It is worth restating a few of its aphorisms to highlight the ways in which they effectively and presciently predicted the landscape for location-based applications and services

there are notes in boxes that are empty

every room has an accessible history

every place has emotional attachments you can open and save

you can search for sadness in New York

people within a mile of each other who have never met stop what they are doing  
and organise spontaneously to help with some task or other.

paths compete to offer themselves to you

<sup>2</sup> The intentional degradation of the accuracy of the GPS signal for civilian use.

<sup>3</sup> See <http://www.losangeles.af.mil/library/factsheets/factsheet.asp?id=5311>

everything in the world, animate and inanimate, abstract and concrete, has thoughts attached

(Russell, 1999)

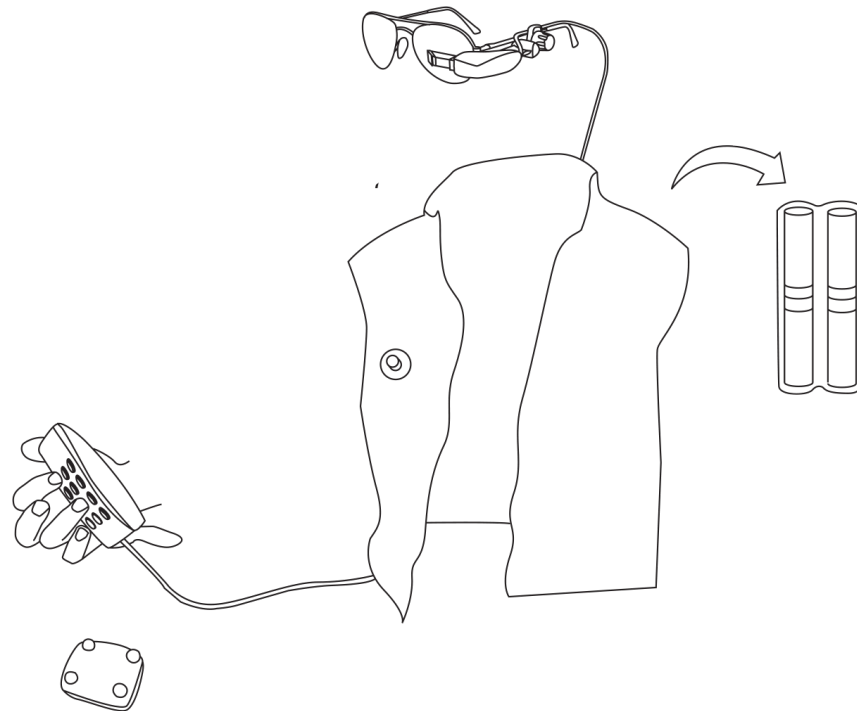


Figure 1. Illustration from the *Headmap Manifesto* showing a Google Glass type device (1999)

What sets Locative Media apart was this prescient analysis of the potential of the technology (see Figure 1) and a recognition that user practices could shape location-aware technologies – and understandings of the technology - through expanding the range of uses for them. Ben Russell's writings both in the *Headmap Manifesto* and later in his Report on the Karosta Workshop sets the agenda for this approach. His understanding of Locative Media was an expansive one that considering the practice in an expanded field of technologically enabled social practices as

a new site for old discussions about the relationship of consciousness to place and other people. A framework within which to actively engage with, critique, and shape a rapid set of technological developments. A context within which to explore new and old models of communication, community and exchange. A name for the ambiguous shape of a rapidly deploying surveillance and control infrastructure  
(Russell, 2004)

Russell suggests that while this discussion isn't solely technological in nature it is foregrounded and made possible by the emergence of location-aware technologies, which "suggest and condition(s) ways

of thinking, ways of doing and ways of seeing" (2004). This in turn creates a space for "a whole range of interesting and rich human centered conversations", facilitating a reconsideration of the nature of urban space and ways of operating within the city. Russell sees this opening up of location-aware technology's ability to "shape and organise the real world and the real space" (1999) to all as a fundamental departure, the implications of which would be felt in a wide range of domains, from social relationships to computing platforms.

According to Russell Locative Media in this context provides a framework which artists can use to "engage with, critique and shape" these emergent technologies. The transition of GPS from the realm of specialists to a consumer technology in the wake of the lifting of Selective Availability presented an opportunity for a reinterpretation of the technology where

"perhaps in the hope that users can tell them what the devices are for. In this sense, they seek grassroots and consumer level interpretation of what these devices are as surely as they seek an answer from corporate users."  
(Russell, 2004).

### User Practices

This approach is echoed by Proboscis, the London based research group<sup>4</sup> who created *Urban Tapestries* a large scale Locative Media public authoring project which operated from 2002-4. *Urban Tapestries* is worthy of close consideration as one of the most extensive Locative Media applications of this early period. *Urban Tapestries* was designed as a research tool which sought to discover what it is that makes places meaningful to communities, a tool local communities could employ to annotate space and assist in community development tasks. Proboscis's approach envisaged a kind of "Mass Observation for the 21st century" (Galloway, 2008, p. 23) following in the tradition of the 1930s English mass sociological survey which had respondents annotate their everyday lives in great detail. Perhaps of more significance was the research teams's conscious attempt to re-balance what they saw as the prevailing view "that saw tourists as the principal general users of such technology" (Angus et al., 2008). They feared that tourism, proximity marketing and other forms of location based advertising would be the only applications for these emergent technologies, a scenario they saw as "unnecessarily impoverished". It is evident from the development team's writing (Angus et al., 2008) and in Anne Galloway's study of the project (Galloway, 2008, p. 236-240) that a core goal for the developers was a desire to provide an enabling framework from which a more user-centric set of practices for engagement with location-aware technologies would develop. This approach sought to

"make the superstructure configurable, very configurable, and instead of designers designing the context stuff, allow ordinary people to design the context stuff" with the ultimate intention that people would "get involved in negotiating place and their own spatial practices, thus enabling a user-generated articulation of meaningful or interesting behaviours"  
(Angus et al., 2008).

Locative Media's engagement with the technology was thus focused on enabling new user practices through providing novel methods of engagement, with the ambition that these practices would in turn

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<sup>4</sup> <http://proboscis.org.uk/>

generate new spatial practices and new understandings of location-aware technology and its uses. It is important to consider the idea of practice further to understand its role in shaping technology. At one level it can be thought of as the ways in which users engage with technology, the usage modes and habits which grow up around new technologies (Agre 2001, p. 5). On a deeper level it is the ways that the technologies are integrated into everyday life which makes them meaningful and therefore useful. Paul Dourish sees the concept of practice as "one that unites action and meaning" describing "how the world reveals itself to us as one that is meaningful for particular sorts of actions". He continues "part of what people are doing when they adopt and adapt technologies, incorporating them into their own work, is creating and communicating new meanings through those technologies as their working practices evolve" (Dourish, 2004, p. 10). This process of making technologies meaningful comes through practice, it is not inherent in the technology, nor can it be inscribed by designers but is rather contingent on real world situations and revealed through practice (see Coyne, 2010). The integration of new technologies into the everyday is dependent, according to this account, on a "supervening social necessity" (Winston, 1998, p. 6). Regardless of how innovative they are, technologies will not be adopted if they cannot be made to be meaningful in the context of the everyday. The corollary is that practices which add meaning to a technology have the power to reposition the technology, changing its meaning from the original intent of its creators and hastening its acceptance.

Smart city researcher Anthony Townsend sees this tension between competing visions for location-aware technologies as crucial in shaping our understanding of these emergent technologies. We are, he suggests, living in the "contested-aware city" where a struggle between the top-down context-aware systems and bottom-up systems typified by Locative Media is played out, one in which he sees artists as "playing an unprecedented role in interpreting context-aware technologies" (Townsend, 2006, p. 346). These concerns were echoed by Katherine Hayles who saw the information intensive environments of ubiquitous and pervasive computing, formed from networks of sensors, location-aware devices and relational databases, as challenging us to use them in "constructive and life-enhancing ways without capitulating to [their] coercive and exploitive aspects" (Hayles, 2009, p. 48). Locative Media engaged in this attempt to re-interpret the technology and respond to Hayles's challenge in a scenario where the varying and competing articulations of location in this early period, as the technology emerged, would establish practices and usage modes which would persist as the technologies became more embedded in everyday life.

I see Locative Media practitioners as operating within this frame developing practices, sometimes experimental and other times eminently practical. These user practices establish a mode of operation for location-aware technologies which reveal uses and functions (Coyne, 2010, p. 4) and ultimately give meaning to, or shift existing meanings for, these technologies which, if successful, remain permanently inscribed. Through augmenting space with location specific narratives and personal annotation, revealing hidden histories, ludically transforming everyday space into digitally mediated game-space and developing proximity based social networking, it can be said that Locative Media projects have foreshadowed all of the key areas of current location-aware applications and services. I propose that this is not co-incidental but represents the agency of Locative Media.

### **Casting Influence**

In considering the agency of Locative Media it is necessary to examine the articulations of location-awareness, orientating around location, proximity and their associated user practices, that have emerged in commercial location-based services. These demonstrate a substantive shift from the early GPS-centric understandings of location which the Urban Tapestries developers found so impoverished.



I suggest that Locative Media's understanding of location was essential to setting the practice apart from commercial, industrial and military uses of location-aware technologies in the post 2000 period, and played an important role in shaping their practices. This spatial understanding which is indebted to work of the French spatial philosopher Henri Lefebvre is most clearly illustrated in the clear distinction drawn between concepts of 'position' and 'location'. This understands position as the instrumentalized localization of space as points in a cartesian grid which can be tracked and targeted (militarily and commercially), it represents a cartesian view of space, a view associated with GPS technology which describes location as points of longitude and latitude. Location, on the other hand, coincides with Henri Lefebvre's concept of "lived space" (*espace vécu*) (199, p. 33, 38-39), the space of individuals and communities replete with histories, narratives and layers of association, which can be made visible through the application of locative technologies. This approach reveals the promise of Locative Media; that is the ability to (re)construct the map which is bigger than the territory (Borges, 1998).

As location-awareness becomes a feature of the everyday, employed in an expanding range of location based services and applications, these locational understandings have assumed an added importance. Locative Media sought to enrich locative practices beyond a narrow positional understanding of location, focused on the ability of the technology to find the user's location as a point of longitude and latitude, with a more expansive understanding of location built on Lefebvrian theories of space and place.

The central tenet of Lefebvre's theory of spatial production is that space cannot be considered as an empty neutral container in which objects and people are situated (1991, p. 68). Rather space is a social product, the "outcome of a sequence and set of operations" (1991, p. 73) produced through a complex set of interrelationships resulting in a multiplicity of interconnected and overlapping spaces which influence, and are influenced by each other (1991, p. 86-87). Lefebvre proposes that space is composed of three elements or types of space with social space the result of a "triple dialectic", where the practiced (perceived), thought (conceived) and imagined (lived) space elements are synthesized together in a social spatialization which Lefebvrian scholar Rob Shields describes "as a dialectical contradiction of: everyday perception/practice versus spatial theory/concepts relativised by a transcendent, entirely other, moment: creative, fully lived space" (Shields, 1999, p.120).

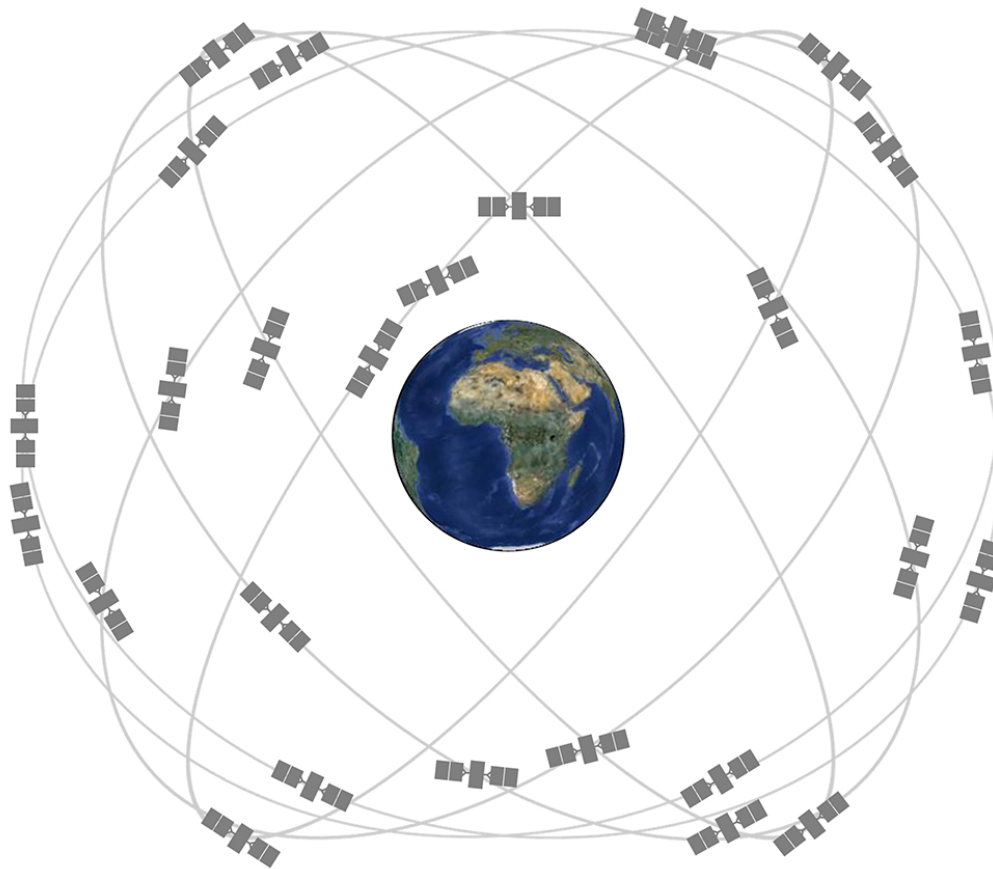
Therefore if space is in a state of continuous production, a state of continually being brought into existence, then it is the process rather than the product which is of most interest. This leads to an acceptance that position, for example as defined by a set of coordinates of longitude and latitude, is of little importance in and of itself. Of greater significance is how that location is related to other locations and to the practices which define that location. It is the practice, the procedures and the process that lead up to, for example, standing at a specific location as a participant in a locative art work that matter, rather than the GPS coordinates of that location. This Lefebvrian notion of lived space, I suggest, lies at the heart of Locative Media's ambitions for the technology, a concept which when applied to location-aware technologies amounts to a rethinking of how they might be used.

When distinguishing between these competing articulations of position and location it is important to place it in the context of the technology of the early 2000s, that is commercial GPS devices, rather than today's smartphones and location-aware devices. GPS was primarily a military technology with limited commercial use prior to the lifting of selective availability (SA). The main area of commercial product



development in the period after the lifting of SA (in 2000) was the satellite receiver business model, primarily as in-car satnav.

While this model has proved to be an intermediary phase, as dedicated satnav units give way to lower cost smartphone navigation solutions, satnavs played a significant role in bringing a culture of location-awareness to a wider public and in fostering a particular understanding of location-awareness in the early post SA period. Satnav applications are direct descendants of their military antecedents in their approach to position as points on the Cartesian grid identified by coordinates of longitude and latitude, with the connection between the satnav unit and GPS satellites orbiting above ever-present (see Figure



2).

Figure 2. The GPS Satellite Constellation (Source US Government)

Of course this makes sense in an application designed for navigation, up to a point. As satnav gained a wider user base and became part of everyday situations, so too did the anecdotal and media reports of its shortcomings. The familiar accounts of mishaps attributed variously to an over reliance on fallible technology but more cogently to the inability of satnav's practices to account for real local conditions, and to deal with contingency. It is not sufficient to route from position A to position B based on the shortest driving distance, even incorporating (as the most current versions do) live traffic data, without considering local knowledge and conditions. Positional knowledge alone leads to situations such as the much cited case of the Norwegian tourists in Rio de Janeiro shot when their GPS, using the most direct

route, led them through a gang controlled favela on their way to the airport<sup>5</sup>. This lack of relational knowledge points to the shortcomings of a purely Cartesian approach in complex urban space characterized by contingency (Thrift and Amin, 2002).

In contrast if we consider the articulation of location evident in Urban Tapestries, we see location as a relational 'lived' space which allows for local knowledge, rather than a top-down model where location is conceived as a standard data-set to be applied. Urban Tapestries was built around a "pervasive computing platform developed specifically to support public authoring in its many expressions" (Angus et al., 2008) which enabled this sharing of local knowledge. This approach was conceived to effectively counter what they perceived as a reductionist view of the potential of emerging location-aware technologies which saw them as a broadcast medium with limited opportunity for user involvement (Angus et al., 2008; Galloway, 2008). When the project was initiated in 2002 it adopted an alternative stance to the prevailing view of the potential for location-aware technologies that saw tourism, heritage applications and proximity marketing as the potential users, seeking to instead find out

“what it was about local places that mattered to people as they went about their daily routines. True daily life is richer and more complex than the traditional view, relying as much on social networks, personal experiences, and chance interactions and connections, so pervasive computing applications should attempt to reflect this “  
(Angus et al., 2008)

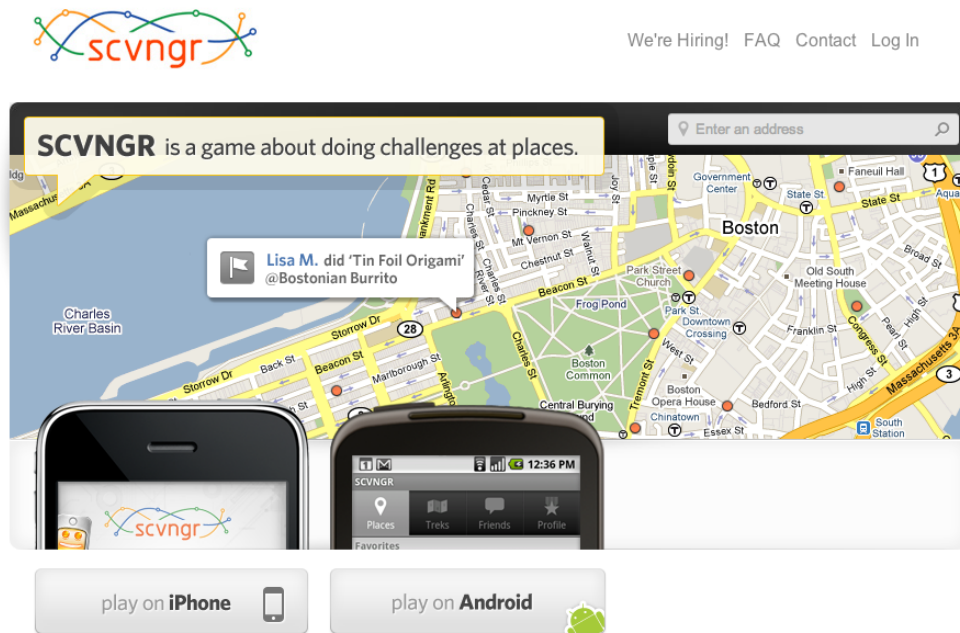


Figure 3. A screen capture of the SCVNGR website

This is not only a succinct iteration of the ambitions of Locative Media, it could be the mission statement for so many location-based mobile startup companies launched as location-aware devices

<sup>5</sup> See <http://www.smh.com.au/travel/GPS-guides-norwegian-tourists-into-trouble-in-rio-20081126-6inc.html>

became widely available. Consider a range of smartphone apps; *Color*, *Local Mind*, *Ditto*, *Whatser*, *Weddar*, *Foursquare*, *Gowalla*, *SCVNGR*, *Yelp* and *Dopplr*, among many more<sup>6</sup> (see Figure 3). While these represent a disparate group of products they share this concept of location as a social space defined by relationships and communities of interest, and attempt to build on this through providing user tools for virtually annotating space and generating ad-hoc communities of interest. Each builds on the ability to quickly and accurately locate the user's mobile device. With a focus on location as lived space, they employ a myriad of approaches and exhibit an ambition to enhance space through fostering and building location based connections between individuals. This connection between the ambitions of *Urban Tapestries* and current trends in LBS is not coincidental but is indicative of its persistent influence on location-aware applications.

### User Practices in Locative Media

The question arises whether these influences go beyond a superficial appropriation of certain engaging aspects of the model, or whether they reflect values inculcated into these practices pervading the emergent usage modes and shaping the emerging technology. Locative Media foregrounded the ability to overlay locations with context specific information which would enhance space through revealing hidden histories, narratives of place and other contextual information rendering them accessible through location-aware technology. Locative Media projects, such as *Trace* (Rueb, 1999), *[Murmur]* (Sahwney et al., 2003), *34n118w* (Knowlton et al., 2004) and *Media Portrait of the Liberties* (Nisi, 2004), have established this as a significant genre of its own. The influence of the genre is now to be seen in a plethora of heritage applications offering historical, architectural, and cultural guides, typified by Berlin's *MauerGuide*<sup>7</sup> and the *SoundWalks*<sup>8</sup> alternative walking tours of cities. Similarly influential are the articulations of location enmeshed in the urban games of Locative Media, involving the ludic transformation of urban space mediated through mobile devices, with aspects of the game simultaneously taking place on the streets and on the network. This owes much to the "playful-constructive behavior" (Debord, 1957) of the Situationist *dérive* and the 'striving for playful creativity' (Debord, 1958) of the constructed situation which called for a blurring of distinction between play and real life (I discuss this influence in detail in McGarrigle 2012 and outline its limitations in McGarrigle 2013b). This concept of city as game space, notably introduced in Locative Media projects such as *PacManhattan* (2003) and Blast Theory's mixed-reality games such as *Uncle Roy all Around You* (2003) and *Can you See Me Now* (2004)<sup>9</sup> (see Figure 4) has in turn have filtered through to LBS with the 'gamification' of location.

Location based social networks such as *Foursquare* and *SCVNGR* describe themselves as games and incorporate gaming elements, however tenuously (Bogost, 2011), to increase user motivation and involvement in their model. Location based play is also to be seen more straightforwardly in location-based games such as *Gbanga*, Grey Area's *Shadow Cities* and Google's *Ingres* where the game arena is the city itself. While the validity of the game aspects active in LBS are undoubtedly questionable, the concept of the location based game and the ludic transformation of urban space has been imported wholesale into LBS from Locative Media, and is further evidence of its influence.

6 While three of these services ceased in 2012 and 2013, marking a transition in LBS, they received a great deal of attention when they were released and were seen to represent the future of LBS and as such are important in a discussion of the influence of Locative Media.

7 See [www.mauerguide.com](http://www.mauerguide.com)

8 See [www.soundwalk.com](http://www.soundwalk.com)

9 Other examples include *Dodgeball*, *Asphalt Games*, *Noderunner*, *Mogi Game* and *Botfighters*



Figure 4. Blast Theory, *Can You See Me Now* (source Blast Theory)

Proximity sensing as location-awareness, that is the practice of detecting proximity to other users rather than absolute position, has become one of the fastest growing areas for LBS with the commercial success of dating/contact apps such as *Gaydar*, *Grindr*, *Skout* and *Whoshere*. The concept of proximity as a location strategy is familiar from Locative Media works such as *Umbrella.net* (Brucker-Cohen and Morakawi, 2004) and *Aura* (Symons, 2004) in which location based interaction between participants produces the work. Proximity is about the physical locatedness of being in a place and in this sense is a phenomenological experience. It also acts as an ad-hoc transformation of a specific location, a re-coding so to speak, foregrounding the space as one where social interactions are enacted. A transformation which approximates Lefebvre's view of the city as a "place of encounter, assembly, simultaneity" (2003, p. 118). In this sense proximity is essential to the spatially enacted social aspects of these apps with their specific enactment of proximity, calling on the affordances of locative technologies in combination with ubiquitous network access to bring around a re-coding of location, not as absolute position but as relational space.

Proximity in this context has a dual function; that of a set of practices hinging on the concept, providing a plethora of ways of incorporating proximity into gameplay and into a wider field of locative artworks, and collaterally a novel way of thinking about location as relational space. This is location not as a point on a grid but as connectivity to location-based self organizing networks (Rossiter, 2006) which are leveraged on specific interests, from gaming to activism and location-aware



social networking. While the most successful category of proximity based apps remain contact/dating apps designed to meet people solely based on their proximity, a more diffuse range of apps relied on proximity sought to generate ad-hoc communities of interest or of place. These offered a wider scope for user interpretation as opposed to the more focused efforts of the dating apps. Apps like the photo sharing app *Color* (which generated much attention but few users) and Localmind, a location based variant of Quora, the popular question and answer web community. Apps which foster communities of interest such as *Mobli* and *Whatser* (location based recommendation services) and *Broadcastr* (Social Media Platform for Location-Based Audio Content), even *Waze* the crowdsourced traffic report app build on notions of proximity which have emanated from Locative Media practice and if they are to succeed rely on users to appropriate them to build communities of interest based on proximity.

### **The Agency of Locative Media**

I have demonstrated that Locative Media art projects have foreshadowed all of the key categories of location-aware applications and services. This is, I suggest, the result of an intentional desire and associated actions, designed to shift the meaning of these technologies, and represents the agency of Locative Media. It is necessary, though, to further explore this agency to uncover the nature and mechanisms for this agency in order to determine whether this agency can be sustained in a still dynamic field.

As Locative Media practice engaged with location-aware technology its influence was exercised along two principle pathways; firstly it shaped the technology and its usage which in turn caused it to produce space differently (in a Lefebvrian sense). Put in another way, as location-aware technologies become available to a wider constituency through mobile devices and as everyday applications, they assume forms which are different to what they might have been. This is the effect of Locative Media, it changed the ways in which location-aware technologies are used through changing our understanding of them. In their classic study of the social construction of technologies, Bijker and Law examine the trajectory of technologies as they pass from new technology to ubiquity and propose that "things might have been otherwise" (Bijker and Law, 1992, p.3). That is there exist multiple possibilities for technologies, and the final outcome of the stable technology is subject to shaping by a myriad of processes including user practices. In this way Locative Media set out to shape the technology in an effort to fulfill a different vision of the potential of the technology. This is the first aspect of Locative Media's agency. The second aspect arises through the spatial action of location-aware devices and context sensitive applications. The new spatial practices associated with these devices produce a hybrid space, a lived space where the internet leaks onto the street (Lefebvre, 1991; Russell, 1999) one which owes its character to the nature of the production process. This double effect constitutes the agency of Locative Media, a shifting or re-purposing of the technologies which, in turn, through the action of their associated spatial practices, produce space.

Literary critic Krzysztof Ziarek in *The Force of Art* (2004) proposes an alternative way of thinking about art which is useful in thinking about the agency of technological art. His approach emphasizes the role of technological art in critical art practice, positioning it as radical critique in a time when art is considered to have lost its critical relevance. Building on Adorno's concept of "negativity" and Heidegger's radical revision of the idea of "poiesis" he outlines a re-articulation of "art's transformative potential with regard to technological forms of power" (2004, p. 6). This he proposes "offer(s) a new way of understanding art's intimate yet critical relation to the very modalities and operations of power in today's society". Ziarek considers art as a "force field" (2004, p. 7) where "forces drawn from historical and social reality come to be formed into an alternate relationship" with the "forcework" of

art as this transformative event, or the work that art does. According to Ziarek the work (the work that art does rather than the art object) of art occurs in "an almost subterranean fashion, beyond the threshold of perception and representation" (28), is typically overlooked by an aesthetic reaction to art yet "reworks the very parameters within which we make judgments" (29). Considering art as forcework thus means that artworks take on a social relevance without explicitly having to deal explicitly with a social problematic, for their importance for praxis is not in thematic critique or even in formal subversiveness but rather on the level of force relations, where artworks not only intervene and interrupt but also recode relationships - rewire the connections so to speak (2004, p. 60). Following Heidegger, Ziarek sees the current "information age" as the most recent incarnation of technicity with "an increasing capability, desire to digitize everything, and thus to turn being into a global, continuously modifiable and expandable data bank"(2004, p. 63). This is equivalent to Heidegger's "standing-reserve" (1977, p. 298) where the very essence of being is reduced through technology to the role of raw material. Technicity (or digitality) is thus characterized by a relentless drive toward the intensification of power (65) and art's complicity and participation in this intensification is called into question. Art according to Ziarek can be made "to conform to aesthetic standards - including the historically changing precepts for aesthetic radicalism and subversiveness" (2004, p. 124). Even radical and subversive artworks are "always already prescribed as aesthetic objects and commodities" acting as "conduits for inscribing art (into) ... the power matrix of contemporary society". However as "society becomes more and more technological" (2004, p. 65) with technology increasingly ubiquitous and invisible he sees the traditional fascination of the avant-garde with technology as having an increased relevance and importance, positioning technological art as a contemporary avant-garde art at a time when it is considered to be a spent force. The question of whether avant-garde art is a "form of technowork, an extension of technopower" or a questioning of technicity he considers as central to its importance as it "allows us to keep thinking of technicity as a question and therefore to keep it in question" (2004, p. 65- 66).

The agency of Locative Media then can be thought of as emanating from forcework, causing a recoding and re-positioning of the technology, whilst operating outside of the logic of that technology. The work done by Locative Media in shaping location-aware technologies operates at two levels; firstly it has established a set of practices for engaging with location-aware technologies such as GPS and other positioning systems, and with the networked devices that are enabled by them, secondly it causes us to think about location differently. This double effect has influenced the ways in which these technologies are articulated as devices, applications and services. In turn this changes the ways in which they are used and their action in society, the modes of engagement of their users, and the nature and quality of the spaces they produce. As location-aware technologies are incorporated into services and applications, and have just begun to emerge into everyday use, the forms they are taking and the ways in which they are being used "might have been otherwise" (Bijker and Law, 1992, p. 3). That is, from the multiple potential outcomes, those favored by Locative Media practitioners have achieved prominence. These modes of operation emphasize their potential as tools of creation while ameliorating their potential as tools of surveillance and control. Central to this process is the role of the Locative Media artist as a user of the technology. Studies of the relationships between technology and its users orientate around varying conceptualizations of the user, and her role in constructing and shaping technologies, which attributes agency in greater or lesser degrees. This body of literature is extensive ranging from social constructivist approaches, (Pinch and Bijker, Wajcman and MacKenzie), systems theory approaches focused on the development of large industrial systems (Hughes), to Actor-Network Theory (Akrich ,Callon and Law, Latour) addressed socio-technical assemblages which come together

to construct technologies. Building on Ziarek's notion of the force of art I introduce a rethinking of the Locative Media artist as an augmented-user of location-aware technologies which accounts for her activist engagement with the technology.

### **The Augmented-User**

Locative Media practice is in essence a user practice. Its practitioners are not developing the core location-aware systems or technologies. Their engagement in one respect falls within the confines of the end user of a black box technology. They, for example, employ the GPS system to locate devices using the inbuilt hardware and software tools which have been designed and made available for that purpose. In this sense they do not, and cannot, intervene in the essential operation of a closed precision system which is not open to user modification. In another respect Locative Media practice clearly goes beyond a straightforward instrumentalized consumer or prosumer engagement with the technology with its implications of a user using a technology within certain preordained constraints (Bruns, 2007). The Locative Media artist is clearly going further, typically developing custom software applications and practices which interface with the core black box technologies. Examples of this mode of engagement include projects such as *Walking Tools* (Stalbaum and Cicero, 2009) which consists of a set of software tools which can be used to reprogram low cost mobile phones for artistic purposes. *Walking Tools*, while not producing artworks itself, acts as an API which enables Locative Media projects such as the *Transborder Immigrant Tool* (Dominguez et al., 2009) project which reprograms low cost mobile phones to be used as aids to (illegal) border crossings from Mexico to the USA. Neither project transforms the core technologies of GPS or the operations of the cellular network, rather they re-interface the technology, that is, add a software (*Walking Tools*) and practice (*Transborder Immigrant Tool*) interface which substantially transforms the usage of the technology. The Locative Media artist, therefore, while a user of the technology can be thought of as a super-user who goes beyond the expected parameters of what a user does. This is what I term the augmented-user. A user who while not designing the technology from first principles, or even accessing the core functionality of the system, augments the technology with an interface layer which interprets the underlying technology. This mode of engagement is characterized by the development of custom software applications, by creating novel applications using APIs, by hacking and modification, and through creating practice-based interfaces, all of which frame the core technologies of location-awareness (see also my expanded discussion of this engagement with AR technology in McGarrigle 2013a). This framing then re-interprets the technology for the user emphasizing certain aspects while constraining others. It is through this mechanism that Locative Media practices re-interpret the technology by shifting the emphasis through providing an interface to its underlying affordances. We can consider Locative Media's augmented-user then as a creator of custom interfaces for the software and hardware of location-aware technologies. These practice led interfaces focus attention on certain aspects of the technology while obfuscating others, offering a re-interpretation of the meaning of the technology. For example, shifting focus onto the ability of GPS to augment the safety of illegal border crossings from Mexico to the USA, rather than GPS as a tool of the border patrol to aid in the detection and prevention of border crossing.

To conclude this discussion of the agency of Locative Media I draw attention to the declared intentionality of the practice. Locative Media practice arose from a prescient analysis of the potential for location-aware technologies, tempered by an acute awareness of their potential as tools of surveillance and control. Locative Media set out to shape these technologies to align them with a specific vision of the potential of the technology. To a considerable extent this has come to pass, and



the forms of everyday location-aware products, applications and practices today reflect these foundational ambitions. Of course in a dynamic field these influences can change and influence can fade<sup>10</sup> therefore it is important to determine the mechanisms for this agency in order that it can better understood and be sustained.

### Conclusion

When speaking of the agency of Locative Media it is worth re-iterating that it is exercised in an incremental manner. We do not expect the killer app, the game changer, after which nothing is the same. A more probable scenario is that the practices of Locative Media art become assimilated incrementally into the mature user practices and usage modes of location-aware technologies. This is not necessarily a linear cause and effect, in some cases it might be, but often the effect is more subtle. *Urban Tapestries* is an example whose influence is evident in the application of current location-aware applications, not as a direct connection with a plethora of applications and services explicitly aimed at letting communities annotate their local areas, but in the more nuanced concept that location-awareness lends itself to user interaction and annotation. This leads to a tendency toward the expression of location-awareness as a two way channel that provides the user with tools that are sufficiently open to permit this with a recognition that their success depends on the user practices which will grow up around them.

The practices of Locative Media act in a cumulative manner alongside other engagements, disruptions, and emergent practices. Each eking out their respective grounds, incrementally creating the conditions for further expansion of the range of permitted and normalized practices associated with the technology. Locative Media practices can be seen to provide a framework which facilitates usage modes and ways of operating which shift the meaning of the technologies, enabling an expanded range of uses, approaches and applications. These practices can be thought of as the ways in which technologies are integrated into everyday life which makes them meaningful and therefore useful. This is not inherent in the technology, nor can it be inscribed by designers, but is rather contingent on real world situations and revealed through practice (Agre 2001; Coyne, 2010; Dourish, 2004). The challenge now is to continue this influence through new practices and new modes of engagement which will continue to shape rapidly deploying emergent location-aware technologies and their application to ensure a continued agency for Locative Media in its future forms.

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