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## LOCATIVE MEDIA, AUGMENTED REALITIES AND THE ORDINARY AMERICAN LANDSCAPE

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LOCATIVE MEDIA, AUGMENTED REALITIES AND  
THE ORDINARY AMERICAN LANDSCAPE

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DISSERTATION

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A dissertation submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy in  
the College of Arts and Sciences at the University of  
Kentucky

By

Andrew John Boulton

Director: Dr. Matthew A. Zook, Associate Professor of  
Geography

Lexington, Kentucky

2013

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## ABSTRACT OF DISSERTATION

### LOCATIVE MEDIA, AUGMENTED REALITIES AND THE ORDINARY AMERICAN LANDSCAPE

This dissertation investigates the role of annotative locative media in mediating experiences of place. The overarching impetus motivating this research is the need to bring to bear the theoretical and substantive concerns of cultural landscape studies on the development of a methodological framework for interrogating the ways in which annotative locative media reconfigure experiences of urban landscapes. I take as my empirical cases i) Google Maps with its associated Street View and locational placemark interface, and ii) Layar, an augmented reality platform combining digital mapping and real-time locational augmentation. In the spirit of landscape studies' longstanding and renewed interest in what may be termed "ordinary" residential landscapes, and reflecting the increasing imbrication of locative media technologies in everyday lives, the empirical research is based in Kenwick, a middleclass, urban residential neighborhood in Lexington, Kentucky. Overall, I present an argument about the need to consider the digital, code (i.e. software), and specifically locative media, in the intellectual context of critical geographies in general and cultural landscape studies in particular.

**KEYWORDS:** locative media, augmented reality, poststructural landscape, cultural landscape, Lexington Kentucky.

Andrew Boulton

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THE ORDINARY AMERICAN LANDSCAPE

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[User\\_Interface.mpg](#). Video demonstrating user interfaces. (Size: 16.1MB. Type: MPEG)

## **1. Place, digiplace, landscape – summary and outline**

This dissertation investigates the role of annotative locative media in mediating experiences of place. Locative media is an umbrella term used to describe digital media and technologies that are tied functionally and/or referentially to specific points on the Earth's surface. *Annotative* locative media refers more specifically to annotations or augmentations, generally in the form of text, images, videos or three-dimensional renderings – such as Foursquare check-ins, Google Maps placemarks or Layar augmented reality layers – referenced to particular coordinate locations. The overarching impetus motivating this research is the need to bring to bear the theoretical and substantive concerns of cultural landscape studies on the development of a methodological framework for interrogating the ways in which annotative locative media reconfigure experiences of urban landscapes.

I take as my empirical cases i) Google Maps with its associated Street View and locational placemark interface, and ii) Layar, an augmented reality platform combining digital mapping and real-time locational augmentation. In the spirit of landscape studies' longstanding (Lewis 1979; Meinig 1979) and renewed (for example: Schein 2010; Boulton 2010) interest in what may be termed ordinary residential landscapes, and reflecting the increasing imbrication of locative media technologies in everyday lives, the empirical research is based in Kenwick, a middleclass, urban residential neighborhood in Lexington, Kentucky.

Overall, I present an argument about the need to consider the digital, code (i.e. software), and specifically locative media in the intellectual context of critical geographies in general and cultural landscape studies in particular.

Coding, I show, should not be viewed simply as a discrete and highly technical series of practices involved in the programming of specific high-tech systems and spaces, but rather as a more diffuse set of subjective processes and practices enrolling individuals in more-or-less obvious ways in the writing of cultural landscapes. The language of coding is well-established in the literature and refers to the discursive construction of spaces as gendered, racialized, or otherwise “coded” in particular ways (Thomas 2005; Nelson 2008). As such, building on my work with Mark Graham and Matt Zook (M. Graham, Zook, and Boulton 2012) and particularly on that earlier work on landscape, locative media and code highlighting the social and spatial unevenness of code and content (M. Graham 2011b; Crutcher and Zook 2009), I elaborate on the argument that a distinction between cultural landscape and digitally-mediated or augmented place is no longer sustainable (Boulton and Zook forthcoming).<sup>1</sup>

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<sup>1</sup> Presenting some preliminary thoughts along these lines at the Association of American Geographers’ Annual Meeting (2011) I was asked after my talk if I meant to suggest that all landscape studies and all landscape theories ought henceforth to be revised to address explicitly the role of digital technologies in every given context. No. From the outset I would clarify that this claim about the inherent commensurability between locative media – and its associated representations of place, code, algorithms, technologies, uneven access, power relations, etc. – and other discourses working on/through landscape is an argument for placing these phenomena within the same analytical space. Although the cultural landscape may be inherently a product of racialized (Kobayashi 2007; Schein 2010; Crutcher and Zook 2009) economic (D. Mitchell 2002; D. Mitchell 1996) aesthetic (Duncan and Duncan 2001; Duncan and Duncan 2004; Boulton 2011) and digital discourses and processes (for example: Shelton, Zook, and Graham 2011; Zook et al. 2010), the existence of a digital annotation about location, in and of itself, is no more foundational to the working of landscape than is a railroad line, an aerial photograph, an historic preservation zoning overlay, a mode of production, a historical marker, environmentalism or a street name. Rather, all are more-or-less intentional products, moments or discourses in the continuous reconstitution of place (Schein 1997).

The often obscure(d) ways in which code works through landscape points to the need to re-politicize its work in ordering and reflecting social lives, rather than accept it as an innocent actor (Zook and Graham 2007a). Examining such questions empirically and critically will require scholars to build upon existing efforts to map digiplaces and their authorship – such as content analysis of Tweets, check-ins and Wikipedia entries – and engage with the ways in which individuals work with and through digiplaces and (thus) landscape. Interrogating the duplicity of code – the balance, in short between its “redemptive and manipulative aspects” (cf. Daniels 2001, 206 on the duplicity of landscape) – re-places software as commensurable with and intrinsic to broader understandings of the ways in which landscape works as an actually-existing material thing and as a way of seeing and being seen (Schein 1997): what I term new visualities and new visibilities as I describe in section 4.5.

Methodologically and conceptually the elision of any distinction between place and digitally-mediated or augmented place points to the prospect of a renewed dialog between the traditionally disparate fields of cultural landscape studies and digital/code geographies (M. Graham, Zook, and Boulton 2012). It is towards this dialog that the present dissertation is directed, and I seek to make explicit the many points of intersection and prospects for cross-fertilization of ideas between these rich subdisciplines. This research then represents both a substantive *and* a methodological intervention in the study of ordinary landscapes as increasingly experienced in relation to, and arguably always-already imbricated with, locative media augmentation.

In order to examine the role of increasingly ubiquitous digital locative media technologies in remediating experiences of everyday landscapes, this study is addressed to two overarching research questions. First:

when exploring an urban landscape, how are individuals' emergent understandings and subsequent descriptions of that location mediated by annotative media in the form of smartphone devices?

This question was addressed using a street-based, semi-structured interview methodology enrolling twenty individuals in an open-ended digitally augmented walking exercise in the Kenwick neighborhood of Lexington, Kentucky (see section 5.6 for a detailed description of this Street-Based Interface). All participants were residents of Lexington, Kentucky, aged between 20 and 30-years-old and college graduates or current students. Participants were recruited from class lists of students currently or previously enrolled in geography classes at the University of Kentucky, and subsequently through a "snowball" effect via my own social/online networks. Participants were assigned randomly – ten in each group – to two separate groups: one explored the neighborhood with access to architectural-themed placemarks, one with access to amenity themed placemarks (see section 5.5).

Second:

when using ICT-mediated interfaces at a remote location, how do the presence and the contents of locative media affect users' emergent understandings, and subsequent descriptions, of an urban landscape?



This second question was addressed using a custom Google Maps emulation interface whereby selected augmentations – placemarks – were provided to participants. Details of this Remote-Based Interface are provided in section 5.7. The participants’ responses to each of three tailored sets of placemarks were recorded via an online survey instrument involving a total of 150 participants allocated randomly to three separate groups: 44 participants were assigned to a group having access to the same amenity-themed placemarks used in the Street-Based Interface exercise; 57 were given access to the same architecture-themed set of annotations used in the Street-Based Interface exercise, and 49 were assigned to a group having access only to the Remote Interface (Street View and Google Maps) but no additional placemarks.

The empirical component of this work is suggestive of some specific and some more broadly applicable contributions that, heuristically, we may group into two major, if overlapping, categories.

The first set of contributions relate to **methodology**. I would argue that the most significant methodological findings relate to the deployment of specific research tools – the custom Google Maps interface and augmented reality application. Locative media as actually existing products and platforms are necessarily a moving target continuously evolving as new, changed and upgraded products hit the marketplace, but we can nonetheless draw out from the experience of using specific technologies – specific iterations of Google Maps, Street View, and Layar – in an experimental/research context some broader methodological conclusions. For example, although opportunities were provided to do so, no participant in the online survey raised questions about or objections to the contrived, controlled nature of the interface. Likewise, only when pressed did

interviewees begin to reflect on questions of the authorship and “authenticity” of the specially developed interface (section 8.2). We might legitimately raise ethical questions about presenting as actually-existing a deliberately selected range of annotations (section 5.6.3). But equally, we might note that the very naturalness and believability of the interface (apparently mimicking well the actual interface, familiar to all participants – see section 5.3.2) confers a good degree of potential generalizability about the user experience of these digital mapping interfaces.

Given the reported level of “usefulness” (see section 8.2) as well as the willingness of the vast majority of online participants to express strong opinions about the amenities and architectural significance of the neighborhood on the basis of an online exploration (see section 6.3.2), I draw attention to the power of digital representations of place and their often taken-for-granted neutrality, drawing on and lending further empirical specificity to the four-part typology of power in augmented realities we developed previously (M. Graham, Zook, and Boulton 2012). In addition, I draw attention at various points to the ways in which the methods deployed here raise some significant and broader methodological considerations for other geographers seeking to lend empirical specificity and contextual, subjective sensitivity to accounts of the workings of digital technologies.

This study, as one should expect with any social research project, raised some problematic ethical and methodological challenges in relation to the dynamics between researcher and researched. In this regard I reflect on the practical and ethical challenges of working with simulated locative annotations and user interfaces (sections 5.6.3 and 8.2), and specifically on some of methodological and interpersonal issues raised in conducting semi-structured interviews in one’s “own backyard” (section 6.4) Arguably

more intensive than any study on the use of locative media technologies in the context of everyday landscapes to date, I would suggest that we ought to be cautious – and modest (cf. Lewis 2003) – in the theoretical and conceptual claims we make in respect of locative media and landscape on the basis of this (or any) specific, empirical context. As Pierce Lewis (2003, 90) urges:

“most of us who knew [J. B.] Jackson admired him for his modesty; not just his personal modesty, but his modest unwillingness to make extravagant methodological claims. [This] is not a counsel of despair: just a modest reminder that all would-be landscape readers need to be cautious and tentative.”

The second set of findings are those that relate directly to the present research context, and the ways in which research subjects were able to learn about, understand, and **experience a residential neighborhood**, Kenwick, with recourse to locative media technologies. I note here, for example, the ways in which participants grappled variously with questions of authority, credibility and authorship vis-à-vis the assertions presented in locative media annotations, in both the online and the street-based portions of the research (section 8.2). I also note the variation in the routes taken and the stories told by participants, which provide significant commentaries on the emotional and aesthetic geographies of locatively mediated place (chapters 6 and 7).

Interesting too is the marked distinction between the relatively consistent and stable perceptions of an aesthetically pleasing, walkable and otherwise “positive” neighborhood reported by those exploring on foot, versus the more varied perceptions reported by those participating in the online exercise (section 6.3.2). While something as “sensuously

passionate” (Duncan and Duncan 2004, 36) and “viscerally emotional” (Boulton 2011, 234) as aesthetic preferences in respect of landscape can never be captured objectively via a survey instrument or semi-structured interview (or any other means), these methods worked as effective prompts to get “ordinary” people talking about ordinary landscapes. Additionally, even as they shed additional light on the power of normative aesthetic discourses, the distinctions between street- and screen-based exploration, remoteness and proximity, investment and detachment, offer empirical corroboration of the conceptualization of a more-than-representational aesthetic developed in my earlier work on Kenwick (Boulton 2011) drawing on the work of poststructuralist landscape scholars (Duncan and Duncan 2004; Schein 1997).

The findings reported in chapters 6 and 7 suggest an enlarged role for interviewing and surveying as methods for the interrogation of landscape aesthetics within a cultural geographic framework, as well as the significance of locative media as comprising important discourses reconfiguring embodied engagement with and subjective understanding of cultural landscapes. As a contribution towards the development of methodological frameworks (including the combination of qualitative and quantitative analysis of qualitative and quantitative data) for understanding the ways in which people respond to, narrativize and represent places, the present study demonstrates commensurability between the methodological and substantive concerns of “internet geographers” and the so-called poststructural landscape studies tradition.

In making these arguments, I proceed in this dissertation by first outlining the basic empirical and theoretical contexts motivating the study (chapter 2). Thereafter, I critically review the relevant, existing literatures related to geographies of cyberspace and

landscape (chapter 3). Having outlined the “gaps” in the present literature on locative media – or, more precisely, having identified those insights from diverse existing literatures that may profitably be brought to bear on questions of landscape and locative media (chapter 4) – I present a methodological approach to studying locative media in the context of landscape (chapter 5). Chapters 6 and 7 detail the findings based on the empirical component of this research. These findings are arranged around the primary themes of aesthetics, and emotion. The concluding chapter (chapter 8) suggests some further potential foci for critical, cultural-geographic studies of locative media and (thus) suggests ways in which the methodological framework outlined might usefully be expanded upon in future research programs.

Each chapter contains a brief chapter summary highlighting the main thread of my argument therein.

## 2. Context and Justification for Research

### 2.1 Chapter summary

- Locative media are increasingly a part of everyday experiences of/in ordinary landscapes. Thus, there is a need to critically examine the spaces and practices of locatively mediated technologies – and especially ubiquitous locational annotations or “placemarks” – as intrinsic to landscape as a critical cultural geographic concept.
- An ordinary residential landscape, Kenwick, in Lexington, KY, provides an appropriate context in which to explore empirically these questions around the speciously banal and often-taken-for-granted lived qualities of locatively mediated landscape.
- Locative media and (thus) landscape are not innocent. They are tied up in complex and power-laden social practices and discourses of knowledge production and consumption.
- As such, critical works extant in cultural landscape studies, critical cartography, and code (software, the digital) geographies, provide a critical vocabulary and a methodological toolset by which to consider the workings of locative media in the context of ordinary landscapes.

The concept of “human-computer-human interaction” is excessively repetitive. Human interaction is always already digitally mediated.

(Wilson 2010a)

### 2.2 A date with locative media

Amid the buzz and clatter of the diner, Nancy checks her phone; Sid should be here soon. Two hours ago he checked in at the grocery store on the way home from the office, and his Tweet from 34 seconds ago indicates that he is “heading into town with @nancyt.” She opens the Places app on her phone to monitor his progress, and is horrified to note that two of her least favorite high

school friends are right here in the Country Kitchen of all places. Time for a quick exit. She looks around; Bebe and her distinctive blond hair are sitting at the bar, but a brunette, not the redheaded Sheila, sits beside her. Safely in the street outside, she takes out her phone again, and un-hides Sheila's Facebook profile. That explains it; 361 profile pictures of her grinning face, the most recent mobile upload showcasing her "new look <3." She needs a new plan and so checks her coupons app: a Mexican restaurant 0.2 miles away has a happy hour special, she notes; two seconds later she is perusing its four star user rating and a glowing review by "Herbert\_Garrison," a recommended reviewer with 36 Urbanspoon contributions to his name. Looks good. She taps for walking directions, updates her status and texts Sid the change of venue.

\*

A typical engagement with locative media (and the basis of a similar vignette in M. Graham, Zook and Boulton forthcoming). Spurred by the rapid coming-of-age of the so-called geoweb, in the form of consumer digital mapping and locational services, geographers have, over the past few years, taken a reinvigorated interest in critical questions around cartographic representation and practice (Crampton 2009a; Crampton 2009b; Goodchild 2007).

User-generated or crowd-sourced mappings entail the enrollment of new publics in cartographic practices as diverse as natural disaster mapping and recreational geocaching, and as banal as "checking in" to locations and sharing locationally referenced photographs. In tandem, the role of digital technologies more generally in remediating the production of space has captured the attention of growing numbers of scholars concerned with the agency of software code to shape everyday lives and places (Thrift and French 2002; Kitchin and Dodge 2011). This body of research focuses on the "automatic

production” (Thrift and French 2002) of space via practices ranging from the policing of access and mobility through congestion pricing and CCTV surveillance, to the software sorting classifications that differentiate between individuals based on postal code origin and credit score (S. Graham 2005).

These two strands of research overlap most notably in the context of the increasingly ubiquitous phenomenon of locative media technologies; that is, the smartphones, online maps and proliferating layers of geographically referenced content which are fundamentally imbricated with contemporary experiences in and representations of place. The scenario presented in the vignette above is commonplace within more privileged parts of the urbanized world, perhaps hackneyed in its familiarity. But just as significant as the spatial and class contours of these technologies – the uneven geographies of digital divides and technological inclusion/exclusion (M. Graham 2011b) – are the behind the screens processes that mediate ostensibly straightforward engagements with locative media. Critical attention is being paid increasingly to the technological, political and social “innards,” in the phraseology of Nigel Thrift (2011, 8) beneath the smooth “surface in continuous motion” (Ibid.) on which digitally-mediated social life is (s)played out.

What is perhaps less well developed in the literature is a coherent account of *why* digiplace<sup>2</sup> matters, or, more specifically, how digiplace *works*: that is, of the difference

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<sup>2</sup> Digiplace stands in as shorthand for “digitally mediated representations and of place”, or in the words of Zook and Graham (Zook and Graham 2007a, 466) the “use of information ranked and mapped in cyberspace to navigate and understand physical places” . I consider digiplace to be the predominantly digital component of augmented realities, as we (M. Graham, Zook, and Boulton 2012) conceptualize that term as consistent with digiplace’s claims about the thoroughly social production of digitally mediated realities.



that the digital makes to experiences, representations, and thus theorization/analysis of place. How does an electronic *dérive* – to borrow the language of the Situationists (see: Pinder 1996) – using Google Street View differ from, for example, a set of captioned postcards of the same downtown streets (or, for that matter, from the original notion of *dérive*)? How does composite, remotely sensed GPS (global positioning satellite) imagery of a city differ from an aerial photograph of the major landmarks and thoroughfares of that city? How does a panning, zooming, rotating three-dimensional representation of the Earth (such as Google Earth) differ from a mass-produced bird’s eye view of an industrializing American city? (Schein 1993)

The insertion of a mobile screen does not simply disrupt a straightforward relationship between scene and viewer any more than a printed map object simply communicates information from cartographer to map user (Montello 2002). But both in the context of “desktop” digital mapping, viewed remotely from the mapped location (for example, viewing the Google Maps/Street View representation of a neighborhood from a home computer), and handheld mapping viewed on-location (for example, using an augmented reality application or other location-based service, such as local search, to view information about one’s current location), locative media entail new and different engagements with cartography. The significance to experiences of place heralded by these consumptive, authorial, embodied practices of/with locative media motivates i) this study’s empirical foci on “remote” locative media (hereafter “Remote-Based”) and on-location (hereafter “Street-Based”) locative augmentation, and ii) its methodological insistence on understanding locative media as discursive representations and material practices shaping and reflecting cultural landscapes (Schein 1997).

### 2.3 Kenwick and the re-reading of ordinary landscape

In the tradition of Pierce Lewis' (1979) *Axioms*, work in landscape studies has noticeably returned to a consideration of the ordinary in the American cultural landscape. Central to this revivification of a Jacksonian/Lewisian tradition in cultural landscape studies is the endurance of geographers' concern with reading landscapes, including the materiality of landscapes and their architectural features, as products of particular sets of social relations. Thus, complementing the postmodernist attention within landscape studies to the power of representation and discourse of/in landscape, the materiality of landscapes as physical, lived spaces has gained prominence from a variety of perspectives. Lewis' insistence on the legibility of landscape as "our unwitting autobiography" (1979, 12) led him to advocate the reading of that autobiography through ordinary landscapes – residential neighborhoods, roadsides and the like. The material landscape, for Lewis, reflects "our tastes, our values, our aspirations, and even our fears, in tangible, visible form" (1979, 12). Increasingly, these everyday landscapes are not only designed, managed (for example: Dodge and Kitchin 2007b) and surveilled (see: Lyon 2006; Dodge and Kitchin 2004) by digital technologies, but are represented (for example: Crutcher and Zook 2009), ogled (for example: Kingsbury and Jones 2009) and experienced (for example: M. Graham, Zook, and Boulton 2012) in conjunction with locative media.

Arguably, the recent work in critical geography on the importance of property (particularly, see: Blomley 2004; Blomley 2003; Blomley 2005; Blomley 2007) and aesthetics – and property and aesthetics (Boulton 2011) – in cultural landscapes can be placed on a direct lineage from Jackson via Lewis in terms of its focus on the frequently

taken-for-granted and highly complex frameworks (legal and discursive) within which ordinary landscapes are materialized (Schein 1997). In particular, there is a growing re-appreciation for the significance of lived everyday landscapes, such as the broad range of work on everyday practices and tactics (after de Certeau) through which landscapes are experienced and created as sites of belonging (Trudeau 2006; Schein 2009), alongside the reemergence of critical interpretation of the house as a key site/sight in the cultural landscape (Hubka and Kenny 2006; Lewis 2003).

Although diverse in their theoretical and political bases, the re-centering of ordinary landscapes represents, in the broadest sense, a grounding of cultural landscape in/as the subjective experience of everyday life. That is, landscape works in various ways as the materialization of dominant discourses, as a set of representations, and as a place of pleasure, fear, contestation, etc. (Schein 2006, 13). Furthermore, it represents a commitment to understanding the meanings of landscapes, including (or particularly) vernacular landscapes, not as an exercise in expert appreciation, aesthetic criticism, or economic determinism, but as affective and deeply personal understandings tied up in everyday experience of place. This is the spirit of my earlier work in Kenwick, and the methodological impetus for understanding the ways in which people think about and make sense of ordinary landscapes in an era of ubiquitous locative media.

Along these lines, Duncan and Duncan's (2004) work on landscape taste describes an elite residential community's shared aesthetic that is deep, socially embedded and as important to its residents' emotional security as it is to their economic wellbeing. That is, investment in a residential landscape is not simply reducible to financial investment in bricks and mortar, even if there is a strong economic or class component or barrier to

entry in the case to which they refer. In part, a theory of landscape aesthetics and an exposé of the role of private property, historical preservation discourse, pastoral idyllism, elitism, and so forth, the Duncans' is also an account, through the eyes of those who occupy, create and attempt more-or-less successfully secure their aesthetic preferences in the material landscape, of the ways in which landscape works as a powerful and power-laden idea.

In seeking to broaden the purview of the (broadly) poststructuralist landscape aesthetics developed most explicitly by the Duncans (2004) I sought to adapt the theoretical and methodological insights of their work to a different kind of residential landscape – the less rarefied, middleclass, urban Kenwick neighborhood of Lexington, Kentucky. Chapter 6 details my findings about some of the ways in which individuals make sense of and tell stories about their aesthetic preferences with respect to residential landscapes.

But even as critical works extant on the imbrications of landscape and aesthetics deal with the deeply personal investments of individuals in particular economic-aesthetic regimes, the focus nevertheless remains on self-identifying communities of insiders: those whose participation in the aesthetic regime (and/or in scholarly research on the aesthetic) hinges on their residence and real property investment in the residential landscape. The present study builds on my earlier work in Kenwick where I was concerned with the self-identification of the neighborhood's residents with a specific aesthetic regime, a bungalow aesthetic underpinned by particular enactments of property. Novel among critical studies of landscape aesthetics within cultural geography, this study explicitly explores the aesthetics of “outsiders” *and* interrogates the role of locative

media representations and practices in sustaining and challenging normative landscape idea(l)s.

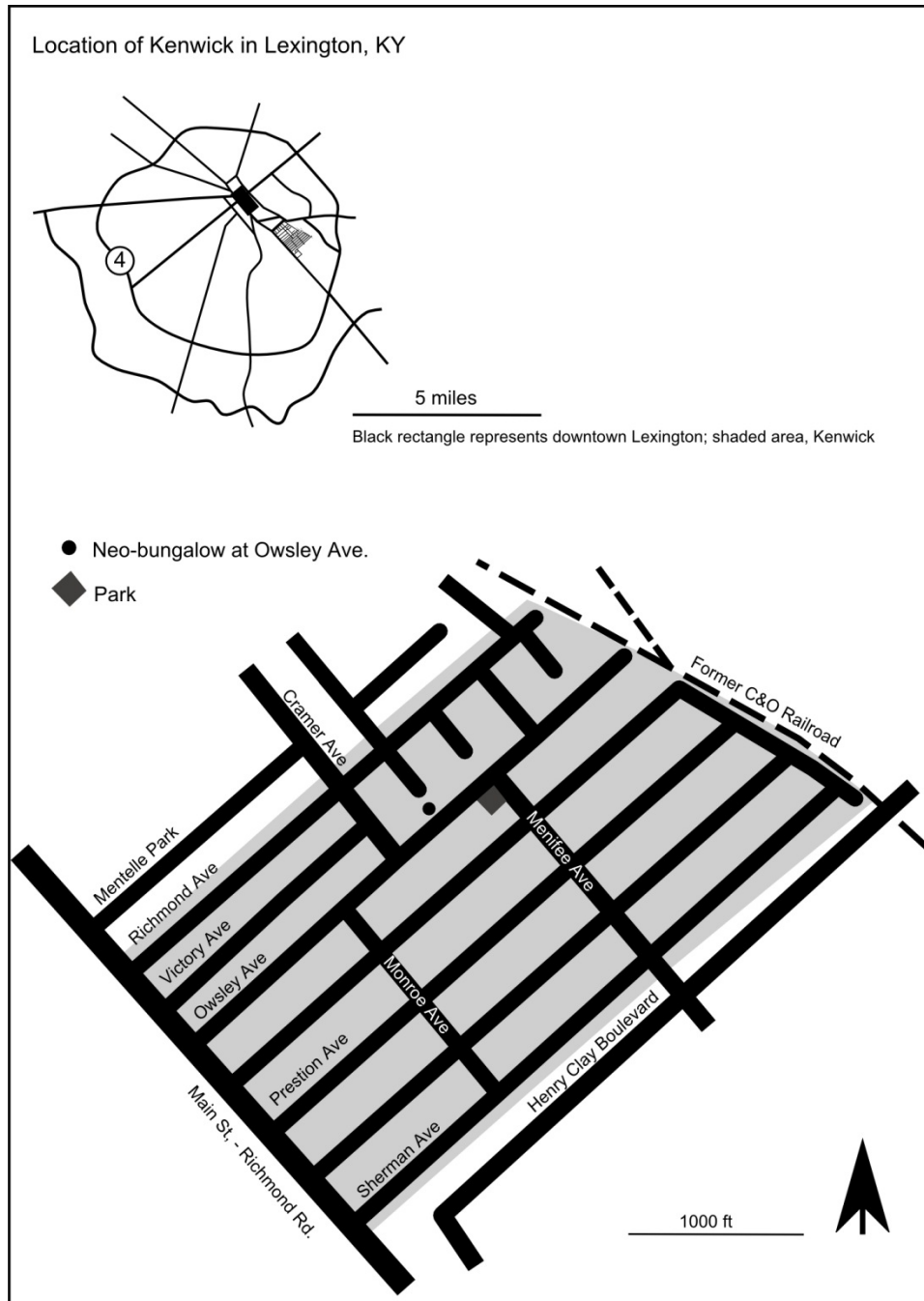
The interviews and online exercises conducted with a specific emphasis on locative media dovetail with this earlier work by i) broadening the participant pool beyond neighborhood residents to a general Lexington community expressing a range of landscape architectural preferences and ii) suggesting a broadening of the purview of landscape aesthetics within cultural landscape studies. Doing so situates neighborhood insiders' Kenwick bungalow aesthetic (section 6.3) within the context of a broader aesthetic discourse, but also broadens the purview of landscape aesthetics to include locative media a significant discursive domain in which aesthetic preferences may be represented, coded, challenged, sustained and experienced in various kinds of ways. Chapter 6 reports on findings about the landscape aesthetic preferences expressed by outside (non-resident) individuals exploring Kenwick via a Remote Interface (entirely digitally mediated platforms accessed away from the neighborhood), and via a Street-Based Interface (digitally mediated street-based exploration).

### **2.3.1 Kenwick**

Kenwick is an ordinary residential landscape. Kenwick is a residential neighborhood, subdivided between 1909 and 1930 and located approximately one mile southeast of downtown Lexington, Kentucky – a downtown neighborhood in a city characterized by suburban sprawl, including subdivisions that extend more than seven miles from the city center. The physical extent of the neighborhood, for my purposes, coincides with the Kenwick Neighborhood Association/subdivision boundaries; I do not seek to delimit a

coherent place, and note that the socio-economic and imaginary boundaries of Kenwick may far exceed the spatial and material extent of the neighborhood so defined.

Kenwick contains around 900 households, though fewer buildings owing to the numerous duplex homes and handful of converted apartment and condominium buildings. Once decidedly working class, the neighborhood is currently home to a broad spectrum of residents, including, increasingly, the young professionals, academics, and others who are priced out of the neighboring Ashland Park Historic District (Schein 1997). In particular, the “first block” of Kenwick – those streets adjacent to Main Street – can be characterized as representing a spillover, in terms of socioeconomic makeup, from neighboring Ashland Park. Kenwick spans six Main Street blocks in length and expands up to three blocks northwest of Main Street. The neighborhood is bordered thus: to the south by the Ashland Park Historic District, with numerous bungalows and predominantly larger, detached single family homes, including the Henry Clay Estate (Lancaster 1999) to the east by Henry Clay Boulevard, the western edge of the later Fairway neighborhood; to the west by Mentelle Park, part of an earlier subdivision, exhibiting similar architectural styles to, if larger homes than, those found in the first block of Kenwick; and to the north by tracks of the former Chesapeake and Ohio Railroad.



**Figure 2.1:** The location of Kenwick within Lexington, KY (inset).

Labeled locations – “neo-bungalow” and “park” are described in Boulton (2011). Source: author

## 2.4 Locative media and the re-thinking of maps

“Rethinking Maps” (Kitchin and Dodge 2007), *Rethinking the Power of Maps* (Wood, Fels, and Krygier 2010). Mapping continues to be thought and rethought by critical geographers, even as key themes endure. In particular, critical cartographic scholars continue to revisit and to build on the classical cartographic works of Harley (for example: Harley 1989; Harley 1990) and Pickles (for example: Pickles 2004), addressing the power of mapping and cartographic practice in the context both of emerging empirical contexts – new, digital mapping modalities, for instance (for example: Wilson 2012) – and diverse vocabularies or theoretical/disciplinary perspectives (Lapenta 2011a).

Harley’s work on the power of/in mapping was groundbreaking, arguably the catalyst for a thorough and discipline-wide reconsideration of the entire modern cartographic enterprise, and (inevitably) a product of its time. Although his postmodern insistence on the ideological underpinnings of mapping and cartographic representation was both novel for its time and very much pertinent today, subsequent critiques have noted the arguably simplistic – relative to more recent Foucaultian cartographic scholarship in geography (for example: Crampton 2001; Crampton 2010) – treatment in Harley’s work of the concept of power (see Pickles 2004 for a sympathetic elaboration).

As Harley (Harley 1989, 14) argues:

“once embedded in the published text the lines on the map acquire an authority that may be hard to dislodge. Maps are authoritarian images. Without our being aware of it maps can reinforce and legitimate the status quo.”



Harley was very clear, therefore, in his belief that maps are powerful social actors that both (re)present and (re)make the worlds in which they work. It has subsequently become fashionable to reject Harley's work on the power of maps as simplistic or otherwise flawed. For example, Mark Monmonier provides a hatchet job of a foreword to *The New Nature of Maps* (preface to Harley and Laxton 2001) which reads more as a character assassination – Harley's habit of publishing in paid outlets comes under attack; his hyperbole promoted "conspiracy theories" (p. xiv), Monmonier opines – than substantive, engaged critique. Nonetheless, Monmonier's rant aside, critical cartographic theorists have tended to finesse rather than reject Harley's understanding of power, via a more explicit incorporation of his seminal Foucaultian insights.

Thus, for John Pickles (2004), central to the relationships between text (map) and context is the power of/in/over the map. Mapping technologies are technologies in the Foucaultian sense of technique, *and* in the sense of printing presses, projection techniques, and Information Communication Technologies. Qualitatively different mappings – real estate maps, landscape painting, GIS – feed into and constitute specific regimes of visibility and control. More banally, they constitute (reflect and produce) a geographical imagination in which the visual and visualizable are privileged, in which claims about space, knowledge and meaning are rendered affective in and through persuasive maps.

Power is not conceptualized as an unevenly distributed item or attribute – the oppressive practice of some (those with power; the powerful) upon others (those without power; the powerless) – but as a continuous process/relationship of contestation and indeterminacy. That is, maps do not *simply* represent power, are not *simply* powerful, and are not

*simply* effects of power, though all of these are important observations in the critical consideration of maps. Maps are inherently social, Pickles suggests, setting out a framework in which to examine maps and mapping as socially embedded processes and not (just) as things/objects in their own right. In other words, understanding the map entails understanding the discursive, institutional and temporal/spatial (etc.) contexts of its production *and* consumption: that is, not only the site of the map itself, but the sites/sights of its production and consumption – its *use* – too.

Pickles is not denying – and I would not deny – that particular individuals and institutions hold, by virtue of their technological/economic/political privilege, greater sway than others over the production/dissemination – control – of ground truth. These power asymmetries are, of course, vitally important questions that raise issues around (among other things) state/corporate control of spatial data: *whose* maps (whose annotations) circulate, *whose* maps (whose annotations) dominate, and *whose* maps (whose annotations) therefore constitute popular geographical imaginations? These questions are important to Pickles' orientation. But what he does particularly well, for me, is to place all maps in the same conceptual/analytical terrain: to be analyzed as social products, as texts (even if that metaphor is not necessarily unproblematic, especially in the context of authorially ambiguous digital representations). Propaganda maps are his case in point: the relationships between authorial (cartographic) intent and audience reception are not pre-given, he emphasizes. Rather the consumption, as well as the production, of maps is shown to comprise a collection of situated, embodied practices. Propaganda maps are only propaganda, as distinct from not-propaganda, in my reading, insofar as they are *explicit* about their intent: to persuade.

Contrast Pickles' sympathetic reading of Harley with Monmonier's stance. In customary style, Monmonier (2007) opines that Crampton's thoughtful essay on the social and governmental contexts surrounding the proliferation of choropleth maps (Crampton 2004) is doused in "superfluous Foucauldian shellac" (his term, I think, for theory?) (2007, 377). With a belligerent realism that relegates ideology as secondary (if that) to utility in accounting for the content and apparent biases in particular mappings, he argues forcibly that power is not inherent to maps (fine, as far it goes), effectively denying that "maps have any real power" (Turnbull 2006, 470). Eliding questions of institutionalized power over cartographic representation or any ideological/discursive/rhetorical basis to particular mapping practices, he claims that the proliferation of various counter- and participatory-mappings suggests that "[because] the map is a tool with diverse uses, cartographic power is inherently ambiguous" (Monmonier 2007, 377). Presumably we could apply the same argument about, say racism: because racial identity is used in a variety of ways ranging from community solidarity, to get out the vote efforts, to genocide, we should probably avoid theorizing something as "ambiguous" as race since, in any case, something common-sense (racialism) that "everyone believed" is obviously benign? (cf. Turnbull 2006, 470). Referring to the tendency of the Mercator projection substantially to overstate the size of mid-latitude, northern hemisphere land masses (Europe) at the expense of low-latitude equatorial regions (largely, the colonized world), Monmonier dismisses the geopolitical content or significance of this rendering, attributing the prominence of this undeniably useful projection to "a mix of comfortable familiarity, public ignorance and institutional inertia" (2004 p. 14) rather than anything more sinister.

Although I lack Monmonier's strength to resist being "seduced by the 'power of maps' as an intellectual agenda" (2004, p. 174), I nevertheless find elements of his skepticism useful. While the claim that "cartographic scholars engrossed in ideology and empowerment have vastly inflated the importance of maps<sup>3</sup> and with it the significance of their scholarship" (470) seems a little uncharitable, unfair even, his reasoning for rejecting exclusively theoretical treatments of cartographic power is more persuasive:

"self-proclaimed theorists demand little evidence for innovative monocausal arguments (like Peters) that might seem sensible were their proponents not aggressively trouncing equally plausible explanations."

(Monmonier 2004, 174)

As a methodological statement, a charitable reading of Monmonier's argument is that it may provide a helpful reminder that theorizing from the armchair is likely to produce incomplete or otherwise partial understandings of the ways in which a particular map works, relative to a more empirically and textually expansive account. As such, we might agree that arguing for and theorizing the ways in which maps work in the world is but one component of a critical cartographic endeavor that takes seriously the specificity of actual mapping practices and actual reading publics, such as the use of consumer locative media in everyday landscapes. I would note the other potential reading of Monmonier –

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<sup>3</sup> Such scholars have not merely mis-theorized power, but have inflated the significance of *maps* per se, he argues. By downplaying the significance of the power of maps as objects, as representations, Monmonier walks a tightrope between on the one hand arguing that maps are only powerful insofar as they are deployed in particular ways and, on the other, arguing that maps are essentially innocent, devoid of agency to reshape worlds and subjects in their image.

implicit in the broader argument of *Rhumb Lines* (2004) – that a plausible account (the Mercator projection was popular because, objectively, it made practical sense for its readers) is a good or complete account, should spur caution against relativist readings of innocent and unproblematic<sup>4</sup> maps.

#### 2.4.1 The power of locative media: a quadripartite typology

“Control of code is power”

(W. J. Mitchell 1996, 112)

In an attempt to think through if and how locative media and emerging digital mapping technologies transform the power relations of map production and consumption, Mark Graham, Matt Zook and I (2012) propose a four-fold typology of power “types” within digital mapping. Written concurrently with this dissertation chapter, the arguments are consistent with the case I am developing here regarding the need *both* to situate emerging locative media within longer-run theorizations of landscape/cartographic representations *and* to consider the specific ways in which particular iterations of locative media work.

Arguing for a conceptualization of power in/of augmented realities familiar to cultural geographers and critical cartographers, we<sup>5</sup> state that:

Our account of power in augmented realities draws on the Harleian tradition of cartographic critique in asserting the contingent and incomplete nature of the map as socially embedded discourse.

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<sup>4</sup> Although Monmonier objects to the use of “problematic” as a noun (“cultural studies lingo”) (2007, 377), fortunately its use in this context is acceptable.

<sup>5</sup> The next two paragraphs are based on my contributions to earlier drafts of this *Transactions* paper and do not appear verbatim in the published version

While Harley cannot have anticipated the emerging geoweb phenomenon we nevertheless draw attention to the prescience of his anti-foundationalist, Foucault-infused accounts of cartographic power (Crampton 2001). His insistence, for example, of breaking down the categorical distinction between propaganda maps and other (truthful) maps represents a necessary first step towards recognizing that all maps – including digital, crowd-sourced maps – are products of and productive of, social relations and associated power relations.

While power is productive, we argue, of mapping subjects from amateur cartographers (Wilson 2010a) to casual breadcrumbers<sup>6</sup> ‘checking in’ at locations throughout the day – it is not inherently oppressive or negative (Elwood, Goodchild, and Sui 2012). Indeed, in the case of user-generated mappings we note the broadening of mapping publics with access to modes of cartographic representation and a marked socio-spatial unevenness obscured by a veneer of democratization.

Based on our reading of existing work within the neogeographies<sup>7</sup> and code geography literatures, and informed by critical cartographic scholarship on the power of maps, the four-fold typology of cartographic power (developed in the *Transactions* paper) is intended to provide a heuristic framework for the analysis of the diverse *work* that digital representations do in and through landscape. By stating explicitly the potential ways in which digital representations may work, they inform (even as they draw on) the analysis

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<sup>6</sup> In the study of information architecture and online navigation, a breadcrumb is a sequential, hierarchical path locating the present content within the context of its site. The breadcrumbs metaphor from Hansel and Gretel is more apt in that it suggests a record of a path actually taken rather than topographically

<sup>7</sup> Neogeography is a broad and much-discussed term, but here I take it to refer simply to cartography involving “non-expert” authors (and the study thereof).

of empirical material produced in the present study. When one of my interviewees noted that

“[locational] search results seem, you know, generic? I’m more interested in graffiti and crime, sex offenders, than this, well... restaurants and reviews and what not”

(Denise, 27)

she is engaging with the power of locative technologies to foreground particular representations of place, while sidelining others, even as the coded and social mechanisms in which these valuations consist are systematically elided; she is engaging with the *communication power* of augmented realities (M. Graham, Zook, and Boulton 2012).

Because – in common with the framework-constructing intent of this typology – these methodological signposts undergird my exploration of the power of locative media mappings in the present study, I want to specify briefly those four dimensions of power (highly objectionable to one reviewer, as I describe below) that form a methodological basis for the context-specific examination of the workings of locative media in/through an ordinary residential landscape.

#### ***2.4.1.1 Distributed power***

*Distributed power* refers to the complex and socially/spatially distributed authorship of the geospatial content that forms the basis of augmented realities and consumer locative media products (such as Google Maps and its associated layerings of information). And,

additionally, it recognizes the similarly diffuse power of consumers to view, promote, rank, comment, redistribute (etc.) geographically referenced information. While distributed power points to the relative and potential democratization of spatial data production and consumption under the auspices of crowd-sourced spatial data, it also recognizes the potential that a veneer of democratization – the notion that, as we write, “because everyone can contribute, all voices will be heard” (M. Graham, Zook, and Boulton 2012, 6) – leads to a potential depoliticization of code’s work and the power relations inherent in geospatial authorship. This has strong implications, drawn out in the present study, for the level of citizen/consumer engagement with questions of power and authorship if the alluring implication goes unchallenged because mass-participation in geocoding content is possible, the packaged outcomes of these content creation processes are democratic and (therefore) authoritative.

#### ***2.4.1.2 Communication power***

*Communication power* refers to the ways in which augmented representations are brought into being: the ways in which particular representations gain prominence, while others may be unheard by, or incommensurable with, prevailing modes of representation. Communication power refers then to the differential capabilities of particular groups, individuals or interests to assert and to stabilize particular representations of place, and the practices by which those capabilities are realized. Referring both to the behind-the-scenes work of “programmers” (coders) and the continuous, often more visible work of “switchers” (users) – in Manuel Castells’ terms (2009, 47), although the binary distinction is problematic in the case of user-generated spatial data – communication power is not (just) exercised covertly or insidiously. Rather, communication power points



to the complex relationships between programmers who have the power to, literally, program the rules of the geocoded game (via algorithms), and switchers who may endeavor continuously to “nurture” particular pieces of content which, in the case of Web content, typically requires linking, blogging, retweeting and updating to retain their prominence (according to typical algorithmic ranking regimes such as those operationalized in Google and Microsoft’s [Bing] search engines).

Though not explicitly the focus of this study, the processes of spatial content creation were occasionally engaged by participants who grappled with and/or sought to comprehend the genesis of the map with which they were asked to interact. Communication power is always lurking in questions of locative media’s accuracy, usefulness, and authority, and from where those values derive – questions engaged by my interview participants in the Street-Based exercise (section 8.2).

#### ***2.4.1.3 Code power***

*Code power* is used to refer to the autonomy of software code to regulate actions, or mediate content – whether by proscribing or requiring particular actions (see S. Graham 2005), or ordering representations in particular ways. In other words, code power refers the role of code in transducing space (Kitchin and Dodge 2005): that is, bringing (representations of) space into being via reiterated processes and in conjunction with other actors. Inextricably linked with communication power and *distributed power* (2.4.1.1, above) – which are, in turn, products and constitutive of it – code power works in what are frequently opaque ways to order representations of place. For example, the data presented to a particular user via the Google Maps interface is a product not only of the particular search terms used, but also complex algorithmic judgments based on the

user's past tracked online activity, their geographical location, and any number of inferred characteristics based on segmentation of user populations, or even derived from the recorded behaviors and preferences of individuals in users' social networks (C. Miller 2011). This is to say nothing of the characteristics of the actual content served which is, in turn, valued and weighted according to myriad more-or-less documented factors, increasingly including locational relevance (proximity) and currency (time).

Although code power, as we suggest, is inseparable from the performances and politics of its distributed authors/consumers who stabilize and claim particular representations within the ephemeral and continuous reiterations of augmented realities, we also draw attention to the fact that code power is, often, "exercised in a very centralised yet hidden manner" (M. Graham, Zook, and Boulton 2012, 7).

Centralization of code power entails a hard limit on the creativity or power of a system's switchers – ordinary users and their deliberate/unwitting promotion of content within digital representations of place – imposed arbitrarily by a sovereign, such as Google. A clear example of the latter is the deliberate editorial cleansing of so-called Google bombs created by distributed users. In high profile cases, such as the mass-utilization by liberal activists of the phrase "miserable failure" in reference to President George W Bush, countered by similar actions by conservatives directed towards President Jimmy Carter and documentary maker Michael Moore, Google chose to claim that the defusing of the bomb was "completely algorithmic" (Sullivan 2007). Similarly, no editorial intervention was claimed in the relegation of anti-Semitic "Jew Watch" from its top ranking for the term "Jew" (Bar-Ilan 2006). The fact that lower profile public figures are still targeted in such ways – see, for example, the neologism coined around Senator Rick Santorum's last

name – belies the claim of algorithmic neutrality, even as it provides a source of optimism that some algorithmically determined democracy/openness may exist, unless or until the algorithmic neutrality threatens the search engine’s reputation. The experience of users with locative media interfaces – whether the Street-Based or Remote Interfaces used in the present study, or any other consumer locative media interface – is, to a large degree, a product of the power of code to enable/limit particular functionality.

The hidden nature of code power to which Graham et al. (2012) refer invokes, I think, the idea of black boxes: a limited popular awareness *that* code works, and a generalized and deliberate (on the part of software/algorithm intellectual property owners) ignorance about *how* code works as both a technical question and one tied up with individual and corporate interests (cf. Zook and Graham 2007b on the “privatization” of digital representation). This is not intended to imply that the power laden action of software code is any more or less opaque than other sets of social relations working in/through landscape. But the work of code in reconfiguring experiences of and representations of place is, perhaps, especially duplicitous given the veneer of innocence/authority appended to these representations, evidenced by my interviewees’ acceptance of and commentary on questions of authorship within augmented realities (see chapter 8).

#### ***2.4.1.4 Timeless power***

Timeless power refers to the ways in which digital representations of place reconfigure temporal relationships, particularly sequence and duration, between people and events. Although cartography has always entailed the synthesis of multiple temporalities – whether in the form of (hidden) data collection or surveying processes taking many months or years, or in the form of labels, references or imagery relating to historical

events/significances – digital representations of place arguably entail a deepening of this effect. Primarily, I would point to the privileging of the present in digital representations of place. Although digiplaces are, as I have suggested, products of distributed individuals, coded rules, and various more-or-less visible practices of social- and software-sorting (S. Graham 2005), they are also positioned in an ambiguous temporal relationship to their consuming audiences. Not only are familiar representations of landscapes such as Google Earth or Street View imagery, as well as the Flickr photographs, user-generated points of interest and Wikipedia articles served up as current, of-the-moment representations of place, but they are put to work as such by individuals who act upon and in relation to these representations. Manuel Castells (1996) describes this flattening of time as timeless time, wherein society is installed within an infinite ephemerality of continuous re-cycling and copresence.

None of this is to suggest something as dramatic as an epochal shift in the ontological basis of being, as is common in technology-boosting accounts of brave new timeless worlds (see, for example, Simons 2008): the supposed novelty of the present situation being a powerful claim to intellectual legitimacy (Savage 2009). Rather, I emphasize a change in degree: rhetoric of currency around locative technologies with an associated set of practices taking for granted the currency of representations. In other words, for me, timeless power identifies and questions the security of this rhetoric equating presence – the existence of an artifact, photograph or representation – with the present. With the advent of mass-audience photography – mechanical reproduction – Walter Benjamin similarly observed the ability of photographic representation to deliver a “posthumous shock”, potentially to “fix an event for an unlimited period of time” (Benjamin 2009, 46).

Echoing Todd Presner (2009, 167–173), the concept of time power points once more to the tension between continuity and discontinuity in time and place of locative media artifacts, their production and their consumption: that is, “the contiguity of the non-contiguous, the simultaneity of the non-simultaneous” (Presner 2009, 178).

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A particularly truculent reviewer took extreme exception to our specification of a four-part typology of power in/of augmented realities. Although the exact characterization of these four categories differs slightly, in emphasis perhaps, from those set out in our article (M. Graham, Zook, and Boulton 2012), I would argue that the relevance of these issues to any consideration of power in the context of digital representations of place is relatively uncontroversial. “These are not types of power”, the reviewer insisted, “these are contexts”. Which is, inadvertently, a very concise summary of the argument I am making here, the argument we make in our paper. That is, locative media work in and through the landscapes they produce and of which they are products. Rather than present a grand, unified theory of power per se, I am interested in the ways in which locative media work in particular (power-laden) practices, (power-laden) relationships, (power-laden) places: yes, contexts.

The point about the typology is not to specify the ways in which all locative media always and everywhere work for every individual. Rather, the typology represents more of a methodological framework, a set of signposts for considering the ways in which particular iterations of locative media, in particular contexts, might work in particular ways. Using a handful of examples to illustrate these types of power relations in action in various types of digital augmentation: Google Street View, where we use the temporally

asynchronous imagery of downtown Lexington as means to explore the timeless power of augmented realities and, with that, questions around the temporality of landscape/representation; and Wikipedia, where we draw out the interconnections between communication power and distributed power in a detailed case study of Wikipedia's multiple, multi-lingual augmentations around the post-Soviet controversy of Tallinn's Bronze Soldier statue.

While the duplicity of code lies (in part) in its appearance of neutrality and its complex and technically impenetrable nature, code never simply "is" as it appears to be. Rather code's effects are felt in its reiterative combination with other spaces, situated actors and material places. Power is not a property of code, or of the map, contained within it or working unidirectionally through it. The contemporary coded map is part of a more social and general "discourse of power, which both enables and abridges possibilities for people to act" (Crampton 2001, 236). Emerging locative media products are increasingly the maps in/through which claims about place are asserted and contested, and towards which critical concern with the work done by cartographic representation ought to be directed.

### **2.5 From place to digiplace: from page to screen**

DigiPlaces [provide] an important new research avenue through which to explore the interactions between culture, code, information, and place as they create new lived spaces which transcend the cyberspace versus physical place binary

(Zook and Graham 2007a, 466)

Geographers are beginning to develop methodological frameworks by which to examine the subjective, variegated ways in which locative media touch the ground, for want of a

better expression, in/through landscape. Our earlier work on augmented realities and accounts of the power-laden, embodied practices of digital cartographic knowledge production by critical scholars such as Matt Zook, Mark Graham, Martin Dodge, Rob Kitchin, Michel Crutcher, Jeremy Crampton, Matt Wilson, Paul Kingsbury, JP Jones, Sarah Elwood and Todd Presner constitute a core group around which concerns about the ways in which digital cartographic representations of place matter coalesce.

It is a well-worn argument, but one that bears repeating as a prelude to a deeper examination on the scholarly literature around locative media and place, that: precisely at a time when the public is engaging more than ever with maps – in the form of online and handheld locative media, locational search and so forth – geographers are, arguably, withdrawing from the business of map-making (see, for example, Dodge and Perkins 2008). While this claim might not be entirely fair as a blanket assertion – geographers are, after all, relative to scholars in other disciplines at least, centrally involved with the types of critical analyses of digital technologies alluded to thus far – there is a sense in which, I argue, geographers in general, and particularly cultural/urban geographers, ought to re-implicate themselves in debates about maps and mapping and, in particular, with debates around the social and political implications of the increasingly pervasive digital technologies of locative media (cf. Wilson 2010a). As a modest effort in map-making – and a little web development – the interfaces developed for the conduct of this research (see chapter 5) represent another foray into map-making as a methodological intervention in cartographic critique and a necessary component of an empirical engagement with locative media usage.

One novel area of cartography in which geographers are, increasingly, leading the way is precisely the representation of crowd-sourced and social information, or “big data” (C. Anderson 2008). “Big data” is shorthand for the massive and expanding body of digitized social data being produced continuously: Tweets, check-ins, web content, and the sharing, commenting and reiteration of these data. Floating Sheep (floatingsheep.org 2012), the collective of geoweb scholars initiated by Matt Zook and Mark Graham, is at the forefront of mapping in novel and socially interesting ways the digital artifacts of mass online participation. The “church versus beer” map of Tweets is one in a long line of mappings to capture the imagination of media outlets such as the *Guardian* (Burn-Murdoch 2012) and *The Atlantic* (Florida 2012).

Thus, one important way for geographers to establish the discipline’s relevance with respect to emerging geographical data – or, perhaps more accurately, the spatial/geographical contours of emerging data, particularly social media – is via these activities with “fun” and/or popular cultural topics, which appear to be of interest to a wide, non-academic audience (relative to the venues in which academic geographers’ maps – when academic geographers make maps (Dodge and Perkins 2008) – typically appear!).

The subsequent task of engaging consumers of these undoubtedly interesting maps in something beyond a superficial critique of their claims (i.e. describing and attempting to explain the apparently clear red state/blue state, north/south divide between “beer belly” and “bible belt” regions) is substantially more problematic (DeLyser and Sui 2012, 3). Nonetheless, as I demonstrate in the present study, it would be inaccurate to suggest that consumers of locative media mappings simply accept uncritically the cartographic claims



to which they are exposed, even as we recognize the powerful, rhetorical effects of attractive, authoritative mappings. Similarly, in the case Floating Sheep's published maps, online commenters frequently praise the renderings, even as they question the methodology or offer alternative explanations for the observed patterns. Finding critical vocabularies to interrogate the significance of these big data sets and the ways in which big data works in small ways, in individuals' experiences of place, is a critical task that geographers are beginning to take seriously (Crutcher and Zook 2009).

Thus, as part of this renewal of geographers' interests in the everyday significance of cartographic representations, I would draw attention to the opportunities that exist to bring cultural geographic "tools" to bear on questions of the digital and its imbrication with social life through landscape. I place tools in scare quotes to flag that these contributions from/to cultural geography, writ large, are not masculinist methods to be transported immutably to this virgin territory, but broad methodological sensibilities and thematic concerns. This is the primary contribution that this dissertation research is intended to make: to situate the study of locative media technologies within the broader intellectual context of cultural geographies and, particularly, landscape studies. I make this argument about the need for geographers to engage with the difference that locative media make for two main reasons.

First, if we are to develop theoretically and politically informed accounts of the ways in which locative media technologies and digiplace work in practice, discourse on these technologies "cannot be left only to those who would unproblematically reproduce excitable futurist advocacy or reduce 'improving' [them] to a technical/technological challenge" (Boulton 2010): that is, the technology/locative media industry, as well as the

state and other actors with various vested interests. The critical social moment to highlight here is that emerging locative media technologies are interesting (in part) because of their increasing ubiquity and the fact that they are and will continue to be socially affective tools used in ways that modify in important ways what it is to dwell and navigate the street/life, what it means to know and to represent place.

Thus, and second, if we accept, as I do (along with Zook, Crutcher, Graham, Crampton, Wilson and others) that digital mapping and representational technologies are (increasingly) affective objects/actants in everyday life, constitutive of (and constituted by) everyday places, and tied up with ways of knowing/being-in-the-world, such concerns call for the mainstreaming of locative media/digiplace within broader cultural geographic disciplinary concerns.

This research therefore represents both a substantive engagement in the geographical study of locative media, but also a methodological intervention in questions of locatively mediated landscape as a real and significant phenomenon in the contemporary urban experience.

It is a speciously straightforward claim made increasingly by a range of geographers, and in particular by those engaged in work on cyberinfrastructures, GIS (geographical information systems) and neogeographies, that code, the “virtual”, cyberspace are fundamental components of contemporary experiences in and representations of place. Work on code (qua software) and its role in the ordering and production/transduction of space has explored/theorized in some detail the ways in which digiplace, and locative technologies of calculation/surveillance more generally, work to produce spaces and subjects of (urban) mobility (Thrift and French 2002; S. Graham 2005). Increasingly,

these engagements with locative technologies pervade mundane acts from navigation (map-based, step-by-step instructions) to augmented walking (via augmented realities and locational search for instance). In addition, emerging work on neogeography offers welcome empirical and theoretical illustrations of, for example, the extent to which and the ways in which digiplace (re)produces relations of domination, inequity and racialization, vis-à-vis control of and access to mapping technologies, representation and (thus) what counts as authoritative knowledge (Crampton 2009b; Crutcher and Zook 2009).

It is paradoxical that a key enabling technological layer of this superficial fluidity is packed away in the black boxes (sometimes literally) of the computers and cell phones that mediate our access to and experiences of the always-already digitally augmented world. When we talk about landscape we are talking about material places and ways of seeing that are (re)produced through computer screens, cell phones, traffic management, circulations of images and discourses, geospatial surveillance and myriad other more-or-less insidious and more-or-less taken-for-granted manifestations of code's work. When we talk about subjectivity and experience we are talking about identities and perceptions that are coproduced with or reconfigured by digital technologies in various kinds of ways: whether through engagement in the witting theatricality of social media, or the unwitting individuation and software-sorted unevenness of, for example, border security, and credit approval (S. Graham 2005).

In the next chapter I critically examine these core literatures in which the imbrications of code and space are asserted, drawing out the contributions each might make to the

development of a critical, methodological framework for the examination of locatively mediated landscape.

### 3. Literature and theory: geographies of place, digiplace, landscape

#### 3.1 Chapter summary

- Geographers are increasingly studying cyberspace and the digital as intrinsic to the production of space. This work spans a broad range of theoretical and empirical commitments.
- Literatures on *transnationalism*, *virtual communities* and emerging work in *neogeography* highlight the myriad ways in which contemporary social life is experienced as routed simultaneously in “virtual” and “material” worlds with no clear delineation between the two.
- The emergence of new modalities of geographically referenced data – i.e. locative media – entails the construction of remediated subjects in the production and consumption of representations of place.
- This study builds on and is situated within an emerging body of empirical work concerned with understanding the ways in which individuals make use of locative media in experiencing and understanding the places they inhabit and produce.
- Existing empirical studies suggest the utility of attending both to the development of nuanced theoretical understandings of locative media, and to the particularity of specific practices and places. For example, as emerging studies suggest, the cultural, historical, economic, discursive genesis of something as ostensibly straightforward as a Wikipedia article or even a Google Map (like architectural style or the color of a street lamp) is far from self-evident. Studying such phenomena requires a broad range of methods.

A diverse range of geographers are increasingly engaged in, and at the forefront of, the study of technology, cyberspace and digital mappings. This dissertation’s argument about the necessity of considering the particularity of locative media representations and practices within a critical, cultural landscape studies framework draws on and contributes primarily to three main, established geographical literatures. Though there is no stark delineation between the areas of scholarship, the primary literature contexts can be drawn broadly as:

i) the neogeographies literature where the political economy, authorship, consumption, and democratizing potential of new mapping modalities – specifically, user-generated spatial annotations – is a central concern; ii) poststructural landscape studies, and iii) critical cartographic literatures.

This chapter begins with a review of the ways in which geographers are increasingly studying cyberspace and the digital as intrinsic to the production of space. Such scholarship is varied, but I begin with a selective overview of the cyberinfrastructures literature since this is an area in which I have conducted work previously and where the intrinsic relations between material and virtual connections between and production of (urban) space are grappled with most frequently (see: Boulton, Devriendt, and Brunn 2012; Devriendt et al. 2011; Devriendt et al. 2009). The empirical concerns and disciplinary niches to which these works pertain are, frequently, far removed from the domains of cultural landscape studies. I want to suggest, however, that there are potentially important points of intersection between these subdisciplines, even as a cultural-geographic/cultural landscape studies approach might usefully expand upon and finesse this literature's important contributions to the study of (digitally-mediated) place.

### **3.2 Cyberinfrastructures and world cities<sup>8</sup>**

In his seminal work, Manuel Castells (1996) argues that qualitative changes in the nature of contemporary society necessitate a “new spatial logic”: that is, one based on networks of informational flows: “flows of technology, flows of organizational interaction, flows

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<sup>8</sup> Components of this section are paraphrased closely in our contribution to the *Globalization and World Cities Research Bulletin* (Devriendt et al. 2009) to which I was an equal contributor (and the original author of this literature review-based section).

of images, sounds and symbols” (Castells 1996, 442). According to this argument, the present Information Age was preceded by an Industrial Age for which physical space was an appropriate and necessary organizing logic for a world in which synchronicity in time required co-presence in space; physical proximity and face-to-face interaction were definitive of industrial society. In this formulation, recent developments in high speed transportation over long distances, and, more dramatically, the rise, diffusion and uses of Information Communication Technologies (ICTs) have fundamentally reconfigured previously taken-for-granted relationships between time and space. Thus, at the most basic level, ICTs entail a decoupling of simultaneity in time from contiguity in space: in the Information Age simultaneity no longer relies on physical contiguity (Sheller and Urry 2006). This is an important observation, and one implicit in the development of the timeless power concept (section 2.4.1.4). Thus, although it is predicated on a very different set of empirical and theoretical concerns than those exercising critical cultural geographers today, the assertion in the cyberinfrastructures and world cities literature of a remediated conception of time in the Information Age resonates in important ways with concerns about the temporal ambiguities implicit in the locatively mediated landscape (see section 8.3).

A broader body of work in the world cities realm dealing with the quantitative specification of urban networks is characterized by Lomme Devriendt and colleagues (Devriendt, Derudder, and Witlox 2008) as incorporating two approaches: “cyberplace” and “cyberspace”, distinguished above all by the empirical data employed. The former, cyberplace, characteristic of transportation analyses, uses data on tangible transnational linkages such as the placement and connection of physical ICT infrastructures, and

volumes and routes of airline transportation to infer intercity linkages. The latter, cyberspace, of which hyperlink analysis is the most prominent example (see: Brunn and Dodge 2001; Brunn 2003; Williams and Brunn 2004) is concerned, rather, with the cloud of digital representations of places which, in turn, are taken as proxies for intercity relationships. In our work on the hyperlink “connections” between major world cities – basically, a quantitative measurement of the relative relatedness of keywords (city names) within the space of the internet – for example, we mobilize Castells’ (1996) basic premise that the global urban system should be apprehended not as a space of places (the historically rooted spatial organization of common experience with its implicit fixity in absolute space and stasis with respect to time) but as a space of flows.

Instead of studying cities as entities with attributes – lived places with people and things come together – the cyberspace approach has little to say about physical proximity or material interconnection, treating the World City Network, in the language of Peter Taylor and colleagues (2012 <http://lboro.ac.uk/gawc>), as just that: an abstract network, or more-or-less continuous system. As such, cities here are defined by their digital representations not insofar as those digital representations reflect and produce individuals’ experience in/of cities, but as nodes in an abstract space of relationships. Of course, such an approach has its own problems. The challenge of how to operationalize this prioritization of flows and relationality over entities (places) and attributes is one that has often been recognized, but not always satisfactorily addressed (Derudder 2006): the global urban system is a clearly a problematic (and large!) thing to measure. So, while influential theoretical work has emphasized, the need for a relational approach to the global urban system, empirical elaboration has been lacking despite high-profile



advocacy and somewhat elaborate theoretical justification (Castells 1996; Sassen 2001 for example). Nonetheless, both approaches tend to elide the individual, subjective implications/experiences of these digital representations.

Although in our work on digital connections between cities (Boulton, Devriendt, and Brunn 2012; Devriendt et al. 2011; Devriendt et al. 2009; Boulton et al. 2011) we frequently added the proviso that an empirical privileging of space over place, flows over stasis, is founded on an epistemological commitment to the inseparability of virtual and material – “the multiple, overlapping spatialities of information in material and ‘virtual’ spaces and their continuous reconfiguration through time” (Devriendt et al. 2009) – there is little development of this argument in terms of how these virtual interconnections correlate (still less interact) with other, more important, qua social and economic relationships between places. What is taken-for-granted in cyberspace studies such as these is that the intangible flow data – web content, data transfer volumes, etc. – are representative of something more, or at least of something else: tangible or somehow more material relationships. Specifying the ways in which these representations of places and/or the relationships between places actually work, on the ground, so to speak is a different matter entirely. As Crutcher and Zook’s (2009) concept of *cyberscapes* reminds us, geographically referenced information and representations of spaces (maps, photos, numerical data, etc.) are related in complex ways to the experience of place. It is these everyday experiences of place, in the context of geographically referenced information – and not the mere quantification and representation of this information – that distinguishes a cultural landscape studies approach to the study of locatively mediated landscape (qua landscape) from a cyberinfrastructure/network focus.

### 3.3 Place and the materiality of the virtual

The cyberspace/cyberplace dichotomy with which certain World City Networks scholarship self-identifies (Devriendt, Derudder, and Witlox 2008; Devriendt et al. 2009) draws on what is arguably a slightly more nuanced body of work on the networked nature of contemporary society (Urry 2002; Urry 2012). John Urry is concerned less with the materiality of the enabling infrastructure operating between points in space than with the material effects of information that takes on myriad, intangible forms as it is produced, disseminated, translated and consumed between and *within* places. It is this conceptualization of a complex and intrinsic relationship between the virtual and the material that is most suggestive as a starting point for appreciating the ways in which digital and material worlds are interrelated in everyday experiences of place.

Urry's (2012) focus in particular is on the changing nature of interpersonal relationships and interactions within a networked, global society in which concepts such as proximity, connection and locality are transformed in important and often highly uneven ways. In Paul Dourish's (2006) words, for example: rather than "creating a distinct sphere of practice", virtual worlds, "open up new forms of practice within the everyday world" – forms of practice that are more-or-less accessible to variously socially and spatially differentiated groups. The operation of power within such a hybrid, networked world, Urry argues, is a function of "network capital" (Urry 2012, 26). Following Bourdieu (1984), capital is not only economic – network capital qua power is not a product of unambiguous structural positions or interests – but the result of continuous contestation in domains of culture, taste, etc. The concept of network capital, however, tends to reduce place to a mere locational container for networking; some places are better "networking"

places than others (Urry 2012, 27). While particular individuals have privileged access to physical mobility and (thus) the emotional and material rewards of extensive social networks, nonetheless the “represented social world” (Bourdieu 1984, 190) – i.e. the identities, places and groupings with which people identify, express themselves and find meaning – is open to individual and group creativity. It is here that the concepts of communication power, code power, timeless power and distributed power point to the complex ways in which place and identity are reproduced through proximate and distant practices of/with technology, always tied ultimately and explicitly to the materiality of particular places.

My start point is to argue not merely that it is inadequate to conceptualize software code as representing a discrete object of analysis standing apart from the real, material places of everyday life and (thus) the concerns of geography more broadly, although this a key contention of various authors’ engagement with the inherent articulation of code with (the production of) real space (per Kitchin and Dodge 2011; Dourish 2006 among many others). But also, I want to emphasize that software is not (any longer?) implicated only in the production of exceptional and delimitable, high-tech spaces of routinized surveillance and mobility (such as airports, borders and supply chain management) but is fundamentally implicated in more-or-less banal ways with everyday lives. I am thinking, yes, of the “automatically produced” (Thrift and French 2002) spaces of traffic lights, water demand management, transportation systems, and CCTV (closed circuit television), but I want to move beyond systemic and infrastructural analyses of these autonomous spaces of code, as important as they are, to think as well about the embodied experiences

and places of the everyday, (en)coded by/through increasingly ubiquitous locative media in conjunction with myriad other codes and discourses.

Although I share Matthew Wilson's view that geographers should "re-implicate ourselves" in debates and scholarship on emerging locative technologies because digital objects are inherently tied up with other social and material components/dimensions of place with which urban and cultural geographies are more broadly concerned, I would perhaps be more cautious, at least requiring some caveats, in claiming as he does (Wilson 2010b) that human interactions are always-already digitally-mediated. To clarify: there can be little doubt that bodies/people, in general, are subject to geospatial technologies and coded rationalities – via state and corporate digitized/coded mapping, statistics, warfare and planning, for example. But, even as we recognize the duplicitous nature of code (cf. Daniels 2001 on the duplicity of landscape) in rendering naturalness, the illusion of being innocent, as being just the backdrop, I would nevertheless draw a qualitative distinction between, on the one hand, these background experiences of technologies of government, demand management, surveillance and planning, and, on the other, the practice/experience of the (still) far-from-typical e-flâneur (Kingsbury and Jones 2009).

Wilson's Heideggerian "always-already" is a nod towards this intrinsic relation between "being-in-the-world" as being in relation to a digital/coded world from which our analyses of digital objects are not separable or subsequent (see also: Crampton 2009a). But neither should we lose sight of the fact that early-adopter usage of the most cutting-edge locative technologies is necessarily a somewhat exclusive activity (both in terms of consumer use and scholarly interest), and the future of these technologies is actively

being written (about) by situated subjects with particular interests, biases and so forth. Excitable accounts of time-space compression and emerging high-tech, placeless, globalized futures are in danger of naturalizing ethnocentric musings on “jetsetters” by “jetsetters” (Massey 1991). Or, as Sam Kinsley (2010, 6) argues: “technological futurity is a complex array of performative and proactive dispositions towards the future” located within problematic and differentially situated politics of anticipation. When Google provides “Goggles” – a kind of visual search engine in which photographing objects, or buildings, or barcodes, or books performs an Internet search – but dreams about Glasses (Project Glass 2012) (an eye-mounted lens/screen for immersive hands-free augmented/reality) the corporation is not just making an innocent prediction or providing a technology preview. Rather, Google is making a claim about (and in turn driving) consumer demand for locative technologies ever more closely integrated with and intrinsic to a baseline embodied experience of place: where the screen/scene interface is physiologically, not merely conceptually, collapsed. Throughout my thinking, writing and researching locative media I seek to keep a critical distance from democratizing claims and eulogies to flâneurie and futurism (with all the assumptions of privilege these entail), while also rejecting monolithically dystopian imaginaries of a Big Brother world of technologically determined servitude.

There is a substantial volume of literature within geography that has asserted the intrinsic and complex nature of the relationships between the virtual and the material. In this section I want to briefly and critically discuss the approaches in three thematically disparate geographical literatures – 1) economic geographies, 2) transnationalism and 3) virtual worlds – towards the relationships between virtual and material, the “space of

flows” and the “space of places” (as formulated by Castells 2000). Although necessarily limited in terms of the depth and breadth of treatment I can give to these topics, my comments are intended to draw attention to the ways in which scholars have sought to conceptualize the spaces and places of digital/communications technologies as being related, in complex ways, to material places/geographies extant. This conceptual and theoretical backdrop establishes a baseline for my headline claim about the equivalence of landscape and digitally-mediated-landscape. These literatures span a broad swathe of social science research, encompassing diverse theoretical, methodological and disciplinary approaches. The intent is not to draw direct parallels with the present case of locatively mediated landscape, nor to suggest a one-to-one mapping between claims around, say, the psychological identification of individuals with their virtual reality avatars and the subjectification of locative media users. Rather, I want to suggest that it is remarkable given the growing appreciation across a range of geographical subdisciplines of the imbrications of code and space that coded landscape – *locatively mediated landscape* – is, as yet, referenced only obliquely within the literature (Kitchin and Dodge 2011; Crutcher and Zook 2009).

### **3.3.1 Economic geography and the stubbornness of place**

Current economic research on high-technology/“smart cities” and “creative cities” in geography can arguably be traced to a major communications geography research agenda of the 1960s and 1970s focusing on geographies of information, and specifically on theorizing the diffusion of technologies, information and ideas (see Abler, Adams, and Gould 1971). Key figures in such communication-based geographies included Torsten Hägerstrand (1967) whose work sought to model agricultural innovations in Sweden. At

the heart of these diffusion/communication studies were always questions about where a practice or idea originated, what were the distinguishing characteristics of these “origin” places, and what kinds of spatial processes were operating to produce the resulting patterns of diffusion and concentration.

With the emergence of high-speed digital networks, 1990s academic and popular discourse produced some rather overwrought accounts of the arrival of a brave new digital world entailing the “transcendence of technology over geography” (see Zook 2007, 55). The digitally connected world of instantaneous communications would herald a new era of e-workers, spatially dispersed yet intrinsically connected to the global economy. Geographers, however, have a healthy history of skepticism towards such hyperbolic claims. Summarizing this sentiment, we (Boulton et al. 2011) write that:

Hyperbolic claims that distance – and with it, place, city, and geography – is, or soon will be, “dead” (e.g. O’Brien 1992; Kaba 1996) belie an important paradox of the contemporary information-based economy: even as ICTs [information communication technologies] become accessible “everywhere”, demand for the physical, corporeal transportation between places, and for prime, proximate real estate within “core” urban locations continues to grow (Denstadli and Gripsrud 2010). The vision of so-called “post-industrial” theorists of a world without distance, where “everyplace is everyplace” (Abler 1973) remains entirely unmet in several key respects. Society and technology shape each other in complex ways. While, at the most basic level, ICT implies a decoupling of simultaneity in time from contiguity in space (Castells 1996), informational flows – the informational “cloud” of ubiquitous communications – are in fact, underpinned and enabled by a vast, physical (placed) ICT infrastructure. Thus, rather than rendering place irrelevant, cities’ economic performance and their prominence within the global urban network becomes, increasingly, a product of their positions vis-à-vis all other places

in relation to ICT networks. Electronic communication has not and cannot be substituted for the social, cultural and economic advantages of urban agglomeration. Or, as Goldsmith and Wu (2006, 56) put it, very simply: “[f]ar from destroying cities by making place irrelevant, the production and consumption of Internet content, and the infrastructure to support it, are concentrated in cities.

These arguments are addressed to work on world city networks, and specifically are intended to point towards the complexities of cities and city networks as being situated in relation both to physical and digital geographies of politics, economics and infrastructure. This is not only an argument about the (important) question of cyberspace being underpinned by physical infrastructure – and consequently the solidification/emergence of particular cities as key “hubs” or nodes in the new global economy (Zook 2005) – but a broader attempt to reinsert place into conversations on virtuality.

The stubborn refusal of place to recede to the background, the “countersensical” prominence of global financial centers that exercises Saskia Sassen (2004, 195), points to the complexity of the impacts of the globalization/digitalization of the world economy. As she notes, call centers and other cost-sensitive business functions are increasingly suburbanized and/or outsourced to lower-cost locations. Whether or not such moves are directly attributable to particular developments in communications technologies is, to some extent, secondary to the observation that, as geographers have argued consistently, the rise of cyberspace does not signal the creation of a smooth plane of perfect access/information, but a complex and spatially differentiated set of articulations between



the digital and the material as each (the digital and the material) in part constitutes the other (Thrift 1996, cited in Zook 2007).

Rather than produce technologically determinist accounts of the impacts of ICT, geographers are increasingly interested not in advocating/describing the transformational potential of technologies, but rather in specifying and explaining the ways in which the contemporary city produces, is produced by, and is experienced in relation to cyberinfrastructures: both in terms of aggregate human capital variables such as innovations and patents, but also in terms of individual day-to-day experiences of place (Boulton, Brunn, and Devriendt 2012).

A banal example of the very real, material ways in which place subsumes the supposed independence of cyberspace (Barlow 1996) as a kind of autonomous place of free information, is the optimization – or censorship – of online information based on users' national-jurisdictional location. That Google's search results look very different to a Chinese user (and, in a near-future scenario to even a North Korean online community) than to a US user has attracted long-running popular as well as academic attention (see BBC News 2006 for an "early" example). The localization of search results – providing relevant results based on a user's location (e.g. restaurants within the user's city rather than restaurants in general) – is a key industry trend and (generally) politically benign in and of itself. However, this national-level censorship, whereby Google accedes – or capitulates to – the demands of totalitarian regimes (and of its bottom line) is a clear illustration of the ways in which cyberspace is inherently bounded by extant economic/regulatory spaces, and particularly by different levels of nation state and corporate control. When Islamist extremists stormed US embassies throughout the

Middle East in the summer of 2012, Google hurriedly censored videos critical of Islam on its YouTube service for viewers in Libya and Egypt, even as it claimed the moral high ground in the United States by resisting the Obama administration's demands to suppress filmmakers' freedom of speech (C. C. Miller 2012).

### **3.3.2 Digitally-mediated transnationalism: “community without propinquity”?**

The concept of transnational community is one formulated and generally deployed in relation to particular ethnic/national groupings, and primarily diasporic immigrant communities that “sit astride political borders” (Portes 2000, 254). Transnationalism is a key literature in geography in which the role of digital technologies, communications and representations are keys to the maintenance and reproduction of social relationships. Initial (and dominant) framings of transnational communities are based very much on a two countries model (Morgan 1999) underpinned by a binary home/host division referring on either side to a material place, and specifically on either side, to a nation-state. Thus, Alejandro Portes argues, members of these transnational communities are “neither here nor there’, but in both places simultaneously” (Portes 2000, 254). Perhaps the most pertinent claim of these classic accounts of transnational communities, in light of the present discussion at least, is the central importance attached to the availability and quality of communication between community members both interpersonally and in terms of mass-media provision (Albizu 2007; Parham 2004). That (assumed) territorialized community is performed in and through (technologically mediated) dialog is a useful entry point to consider the ways in which the concept of transnational community might helpfully be extended for apprehending social relations in/through what Adams and Ghose (Adams and Ghose 2003) describe as bridgespace: the social

relations or space created by individuals located simultaneously within cyberspace but bridging multiple physical places.

Subsequent work has, of course, ably done the work of problematizing the here/there binary with its assumption of a single homeland versus a single hostland (the “classic” migration model) on both normative/theoretical grounds and empirically (Morgan 1999; Diani 2000). For example, the concept of extra-territorial citizenship (Fitzgerald 2004) has been deployed to describe those international migrants who claim and exercise rights to citizenship – voting, lobbying – whilst physically absent from their place of citizenship. This complication of the notion of transnational communities, and the ways in which the concept has been broadened to theorize social interaction, and information sharing/production, thus provides a useful lens through which to view identity (re)production (etc.) for human groupings and organizations at different spatial scales beyond the nation-state. Thus, concepts derived from transnationalism are used to talk about the processes and experiences of community for spatially dispersed groups. The extension of the notion of transnational community into the business world speaks back to the issue of communication and, of particular relevance to work on virtual communities or bridgespace (as Adams and Ghose 2003 frame it, esoterically) comprising distanced social relations, a problematization of those traditional learning models of knowledge production that assume proximity to be necessary to the cultivation of tacit knowledge. Such concerns are entirely consistent with the present study’s interest in landscape ideas/discourse – aesthetics, for example (chapter 6) – that are, similarly, related to geographical proximity and (among other things) digital representation/communication in complex ways.

As AnnaLee Saxenian (2002) describes, skilled immigrant workers in Silicon Valley forge and maintain relationships both within the US and between the US and their countries of origin in ways that complicate accounts of embodied knowledge transfer. Henry and Pinch (2000), for example, recognize as crude a distinction between embodied and disembodied knowledge transfers, but Saxenian (2002) goes further suggesting that know-how and tacit knowledge transfers are not fundamentally different in respect of on-site communication/interaction and off-site communication incorporating multiple places beyond the single workplace.

Most fundamentally, if we acknowledge that identities and allegiances, preferences and communities are cultivated and sustained across space via (and with reference to) digital communications, there are clear implications for our conceptualizations (as cultural geographers) of landscape themes such as, for example, aesthetics. That complex power geometries constitute place is far from a novel claim (Massey 1999). Nevertheless, these literatures on transnational community emphasize the ways in which deeply felt and socially significant claims to community and identity are sustained via discourses that refer to, but exceed, the materiality of specific places (see section 6.3.2).

Furthermore, if we accept that on-site, physical proximity does not fundamentally add to or change the richness of those relationships maintained/produced between remote nodes within the firm, then the argument should apply also to virtual communities – such as Second Life – in which knowledges and a sense of belonging are technologically mediated in similar ways. That is, processes of learning, knowledge sharing – and therefore, I would add, solidarity/community formation – might be experienced in similar ways in respect of virtual community, as in the case of multi-site and off-site locations

within the firm. And this is where some of the more extreme virtual-reality-as-the-end-of-geography discourse comes in.

### 3.3.3 Second Life: “you may think this is but a game”

I anticipate a future blurring of scholarly (and technological) lines between so-called virtual and material worlds, and perhaps more interest from geographers, particularly with the growing popularity of augmented-reality, locative media based games (Wardrip-Fruin and Harrigan 2010). However, I would emphasize, it is the experience, viscerally (or passively), of reality/being as comprising material and digital places/spaces simultaneously that arguably unites virtual worlds and locative media at a conceptual level; the specifics of those material/digital interactions are clearly highly subjective, and place/technology-specific.



**Figure 3.1** an avatar receives advising from an avatar (Source: ukisland.wordpress.com)

Linden Labs' Second Life claims over twenty million registered accounts<sup>9</sup> and has thriving industries in construction, real estate, fashion, education, music, religion and pornography (not necessarily in that order). For its advocates, such as Linden Labs developer Cory Ondrejka (Ondrejka 2007, 28), virtual worlds represent something no less than revolutionary:

Second Life has become a platform for collaboration and business that bypasses traditional geographic constraints<sup>10</sup>

Second Life is a Virtual Reality “three-dimensional” online environment owned by Linden Labs, and operated for profit. Content created in Second Life is shared under Open Source agreements, with certain rights reserved for content creators (the users). Second Life is accessed via the internet using Viewer software. Residents (players, participants) enter the Second Life main Grid as avatars. Avatars can be customized, appearance-wise to resemble various (non)human forms. Avatars may alternate between male and female appearances; their dress, hair, and so forth may be changed at will, but the name of the avatar is fixed. Each user of Second Life, each Resident, may operate a single avatar, under this fixed name. In this way, possessions – known as an Inventory, which may include costumes, tools, objects, scripts (code), and other virtual belongings –

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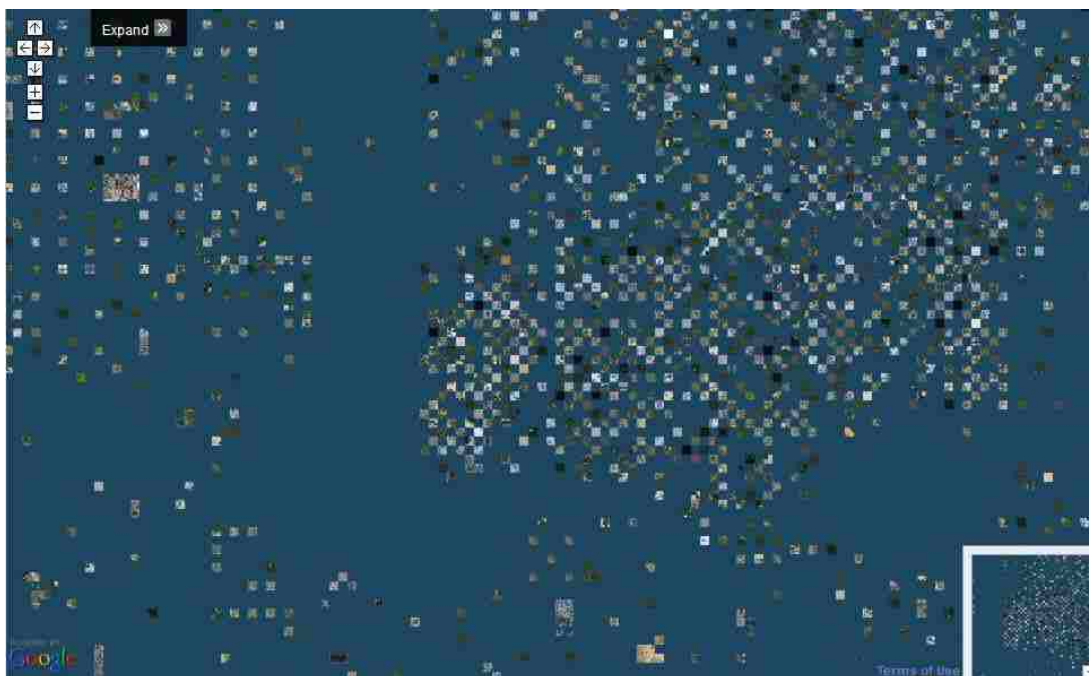
<sup>9</sup> The number of accounts in frequent use, and the number not used by pornographers or students “researching” Second Life is unknown

<sup>10</sup> One of these being the inability to fly, and the expense of metamorphosing oneself to resemble, say, the Kool Aid guy

can accrue to an individual avatar; so can land holdings, rent and presumably an entire history of movements, transactions, and interactions throughout the virtual space. Also attached to the body of the avatar is a Profile – the information contained within the profile is largely optional, but includes information on affiliations to User Groups within Second Life and, optionally, information about the First Life person/people who created/run the avatar. User Groups are means by which people express their affiliation with spaces and causes; more prosaically, they are used to police access to particular member-only places.

Central to the operation of Second Life is an active, real economy. The basic commodity is land. Land is sold by the (virtual) acre, or more precisely by square meters, and varies in price with various locational factors: proximity to desirable amenities (waterfronts, clubs), and qualitative judgments about the desirability of surrounding land parcels/buildings, for example.

In a world where Teleporting – arriving instantly at a chosen destination – is a favored means of travel, First Life notions such as proximity may also benefit from a re-evaluation, although spatial metaphors as well as familiar map forms for representing “land” and its boundaries are remarkably consistent with “first life” equivalents. We might suggest here that the language and conventions of cartography work as a powerful legitimizing discourse to the regime of property enacted within Second Life. Deeded property, measured in authoritative units of dollars, acres, topology and distance is secured by its cartographic representation. Figure 3.2 shows the grid-like arrangement of Second Life’s land masses, as depicted by Google Maps.



**Figure 3.2:** Google’s mapping of Second Life (September 2012).

The market operates inworld (i.e. within the Second Life interface) and outside where land and real estate (i.e. three-dimensional simulations) find their price as buyers and sellers are brought together in the marketplace. Land is divided, by oceans, into Islands. There is a finite amount of land on the main Island, but corporations (or individuals) may purchase their own Islands for commercial/promotional or other activities; educational institutions receive special rates on Island purchases, and numerous Higher Education institutions worldwide have purchased islands there – among them, the University of Ohio, University of Louisville, even Princeton and the University of Kentucky.

In 2010, I conducted research<sup>11</sup> on the Christian missionary movement in Second Life. In particular, I was interested in the ways in which users conceptualize the interpersonal

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<sup>11</sup> See next note. (I selected the Christian missionary movement as an object of study when I realized that other than role-playing gamers and pornographers, “missionaries”



relations they develop online, and in particular how they relate the virtual spaces and places of Second Life to their real lives<sup>12</sup> (or, as Second Lifers have been known to term it, “first life”, or the “meat world”). Talking (or Instant Messaging) with various individuals within Second Life, including worshipers and preachers – one of whom purported (and insofar as I could verify, actually was) a first life preacher too – emphasized the complex ways in which reality and virtuality, material and virtual places, interact in the users’ experiences of such a virtual world.

As Jean, a 35-year-old Tennessean stay-at-home mother told me, between soccer practice, last minute babysitting promises and frequent visits to her elderly mother’s home on the other side of town, she is occasionally unable to attend Sunday services at her local church (where she is a well-known figure), let alone join in with and organize as many social events and fellowship opportunities as she would like. Growing up in small towns in a rural area east of Knoxville, a church-centered social network had previously been central to her social life. Her best friend, Diane, finds herself in a similar position: the mother of three young children, and working fulltime, the free time available to her to pursue an active social life in the church that had previously been the hub of her recreational activity, or even to catch up with Jean, is limited. But when Jean and Diane can’t make it to St Joseph’s for the Sunday service, they make a point of attending church later that day, often together. Or, at least they send Shandae and Goldie on their behalf.

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are perhaps the most likely “type” of avatar to make unsolicited contact with a new Resident.) The empirical material – i.e. quotations and anecdotes – draw on material presented in a paper for GEO 702

<sup>12</sup> Although we should note that Second Life is always-already part of “first life” (for those who participate at least, and vice versa)

Not dogs, but, rather, Shandae is the name of Jean's avatar; Goldie is Diane's avatar. Both (avatars) are members of LifeChurch, a chain of churches with locations across the (actual) southern USA – and one, a megachurch, on its very own Island in Second Life.

Furthermore, worshiper Jakeu Burgess (avatar name) told me during an informal chat at the Dokimos Christian café, that [s]he chooses to engage with the conversation in Dokimos via a laptop and wireless internet at Starbucks – a fascinating simultaneous immersion in the digital/material worlds of coffee shop, and online/offline sociability. By contrast, he told me, he is more likely to attend his virtual church from the privacy of his dorm room or, frequently, his bedroom at his parents' home. His preacher told me:

Are both worlds [First Life and Second Life] different to me? no, certainly not. God sees all of our actions and hears all of our thoughts. Because you may think this is but a game its another way to let satan in to take control of your life. My concern here in SL [Second Life], is as God commanded, to win souls, to witness the gospel to those whove never heard it before. To share in the love that Jesus has for everyone of all walks and ethnic backgrounds [sic]

What both of these worship anecdotes suggest is that the social interactions with/in the virtual world are not (experienced as) discrete spheres of practice from the real qua material world. In one way this conflation of the virtual and the actual, the avatar self with the real self, points to the psychoanalytical concept of the “mirror stage” (Venn 2004) – that developmental moment in which a child comes to recognize himself/herself as an image/body presenting itself to the world; the avatar then becomes a representational surface for the claimed identity of the user. But Second Life is also a

highly gendered and sexualized space in which the numbers of scantily-clad female avatars belies the real life demographic of the user-base. Sexual and other kinds of harassment are frequently reported/experienced. However, we could equally appeal to Donna Haraway's cyborg concept: the avatar-human entity becoming "a condensed image of both imagination and material reality" (1987), and thus a liberatory moment in which the anti-social socialize, gender roles are transformed, and the paralyzed can walk (Jones 2006). Arguably, the metaphor of place is one aspect of what makes Second Life so (apparently) compelling. That is, the citation of the real world, but with the addition of instantaneous teleportation [i.e. travel] between apparently distant places, the appearance of co-presence in time and place, feed into a powerful, imaginative geography of placelessness, liberation and autonomy entirely unrealized and unrealizable – with perhaps the exception of a small, transnational elite – in the first life world. More systematic work in virtual worlds would be required to explore the sustainability of the analog between exploration of, say, Second Life versus remote exploration via Street View. For example, it is not clear the extent to which users' experience of presence within a digital world (whether a representation of a material environment or otherwise) is primarily a function of realistic visual elements (Park, Hwang, and Choi 2009) versus the potential for real time social interaction.

### **3.4 Neogeographies of place, cyberspace and landscape**

Cyberspace is "the cloud of geo-coded information through which we move everyday"

(Zook 2010)

Digiplace refers to “the sorting of cyberscapes, often by software algorithms such as Google’s pagerank, to filter content and avoid information overload.”

(Zook 2010)

Web 2.0 is a broad umbrella term for an emerging online culture, used to refer generally to a set of interactive web-based platforms and services, and one that has at its heart claims around collaboration, participation, and the sharing of user-generated content (O’Reilly 2010). Distinct from the static, hierarchical model of the pre-dot.com bust Web 1.0, advocates argue, Web 2.0 is interactive, scalable, distributed – and participatory. Thus the mapping platforms discussed here, as well as other mapping products such as OpenStreetMap, and other social platforms ranging from Facebook to Flickr fall squarely under this model.

Digiplace describes the software-sorted, ranked and rationalized digital representations of place produced by Google’s (or others’) software algorithms and/or editorial decision-making (Zook and Graham 2007b). Based on the observation that the hyperlinked structure of the Web – and even paid placement – tends to favor wealthy, powerful, institutional Web sites and information sources, calls have been made for search engines to publicize the algorithms by which pages are ranked (Introna and Nissenbaum 2000) – something Google does not do, for fairly obvious reasons. However, much is known about the factors used by Google to determine which Web sites rank most highly for particular keywords within the SERP (search engine results page), and this information is deployed profitably. Google is still working on the “perfect search engine”, one that

“understands exactly what you mean and gives you back exactly what you want” (Larry Page, founder, quoted in Google, Inc. 2012). Until perfection is achieved, Google’s “about us” offers the following description of its patented search algorithms

“We use more than 200 signals, including our patented PageRank™ algorithm, to examine the entire link structure of the web and determine which pages are most important. We then conduct hypertext-matching analysis to determine which pages are relevant to the specific search being conducted. By combining overall importance and query-specific relevance, we’re able to put the most relevant and reliable results first.”

Google (2009, available from <http://www.seo-innovationr.com/does-your-sites-google-pagerank-value-matter/>)

The relative weighting between these multiple factors at any moment in time is largely unknown, as is the temporal response and sensitivity of search results/rankings to changes in one or more parameter: hence, the SEO (search engine optimization) industry. Manipulation of search engine results has a fairly storied history. Perhaps the longest running and most prominent controversy relates to Google’s complicity in, and subsequent condemnation of, the “Great Firewall of China”: that is Google’s censoring of particular Web information at the request of the Chinese regime (see Hughes 2010). Censorship, though, arguably operates on a continuum from outright, head office decision-making (as in the Chinese Google case), through localization (perhaps by respecting or working within intellectual property law), to the more mundane algorithmic and/or social practices by which some (kinds or sources of) Web information is privileged and some marginalized. It is within this latter set of “mundane” practices that

SEO seeks to take advantage of known unknowns in Google's algorithms to enhance the ranking of particular Web sites. A particularly popular and well-publicized strategy, at the extreme of SEO, is the process of Google bombing: that is, of using the fact that Google rates Web sites' importance based on their linkages with other Web sites in order to promote a particular site's ranking by mass linking of keywords.

In common with much of the rhetoric around Web 2.0, Google, in a previous incarnation, effectively condoned the practice of Google bombing as a community exercise in evaluating/valuing the relative importance of different knowledge sources (Bar-Ilan 2006). Google bombing, in this formulation, represented the collective will of the online community; if "liar" meant "Tony Blair" to them, Google should reflect this. The commercial/political "abuse" of the Google algorithms led, as Judit Bar-Ilan (2007) documents, to a change in policy on the part of Google such that the (previously tolerated, democratic) practice of Google bombing is now a challenge to the integrity of Google's ranking system.

The increasing prominence of locational data within the search environment has spurred interest within the SEO community in utilizing the opportunities afforded by platforms like Google Maps: for example, by making explicit submission of placemarks/locational data an integral part of online marketing/publishing. That in the future SEO will move towards strategies that require an engagement with georeferenced data and localization seems inevitable. User tagged information and placemarks are now included automatically within Map search results. SEO industry "insider" and blogger Markus Merz (2008) recommended that webmasters should start immediately working on manually geotagging their web pages within Google Maps in order to drive traffic to their

sites. For now, the rationale for Search Engine Optimizers engaging with spatial data centers around the idea that, all other things being equal, Google is likely to prioritize pages that have been added deliberately to its Maps service (Ibid.). Thus, the consumer platforms with which vast numbers of individuals engage on a routine basis are increasingly predicated on a locational model in which proximity (place) is the key determinant of relevance. In this context, access to (and control over) digital representations of place takes on extra significance.

### **3.4.1 Emerging perspectives on mapping subjects of locative media**

Neogeography and VGI<sup>13</sup> may not mean much when viewed at the individual level, but interesting patterns may emerge when the vast amount of fragmented individual-level data is aggregated and synthesized

(DeLyser and Sui 2012, 113)

As has already been suggested, the emergence of new cartographic products and platforms under the auspices of Web 2.0 has led to new kinds of complexity in the relationship between map authors and map consumers. Although, at a conceptual level the binary between map authorship and map consumption, even in the case of undeniably “official” mappings is founded on a problematic, modernist communication/reception model, the blurring of the distinction between map producers and consumers is arguably most noticeable in the case of user-contributed mappings. Contra DeLyser and Sui (2012), it is crucially important to recognize that while neogeographic representations of

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<sup>13</sup> Volunteered geographical information (Goodchild 2007): conceptually equivalent to crowd-sourced or neogeographic data

place are, in aggregate, social products that may provide useful metrics regarding the generalized understanding of a group or population, all representations of place are tied up with personal, subjective practices, identities and understandings. As such, a commitment to interrogating the geoweb (or neogeography as a set of cartographic practices) critically requires that we pay attention not just to its surface of aggregated outcomes, or even to a vague notion of unevenness in its geographies, but to the specific experiences of its authors/consumers in terms of how (and if, when, where) they choose or are able to engage. In preliminary research for the present study I examined the cartographic community of dispersed volunteers contributing to Google's Map Maker project. Given the rhetorical appeal to community, inclusion and deliberation inherent to Web 2.0 in general and the Map Maker product in particular, I found it useful to read these individuals' participation through the lens of social justice theory, and particularly the work of Michael Walzer (1983). I justify my specific interest in Map Maker thus:

The Map Maker project's interactive community is a fascinating subset of the geoweb not least because it is such a raw and relatively transparent space in which to observe and participate in the very practices, deliberations, motives, personal/corporate projects of prestige/profit, et cetera, et cetera – the social – to which the geoweb is ultimately reducible. Understanding the Map Maker community in these ways allows us to say something about the ways in which a geoweb community operates. Examining the ways in which people come to assume particular subject positions in respect of their roles within that community begins to shed light on the processes – “democratic” or otherwise – that underpin these increasingly pervasive and authoritative cultural products.



Below, I present similar material to that published subsequently as a *Cartographica* editorial (Boulton 2010) as a means to encapsulating my understanding of subjectivity vis-à-vis the mapping subjects of neogeographies. Thereafter, I broaden the discussion of subjectivity to account explicitly for consumption- and mobile-based practices.

### **3.4.2 Map Maker's subjects**

The practices through which membership and inclusion (with the associated privileges, rights, and responsibilities) are delineated from non-membership and exclusion are defining characteristics of geoweb participants' experiences of community, and circumscribe the content of and parties to procedural discourse that governs community decision making. Informed by communitarian political philosopher Michael Walzer's influential writing on justice, I argue that members of participatory geoweb communities occupy, perpetually, a liminal space of semi-inclusion between inside and outside, included and excluded, citizen and subject. Walzer encourages us to think through inclusion, justice, and equality as contextual processes grounded in day-to-day practice within communities (Walzer 1983). I suggest a three-tier citizenship model as a heuristic for describing the deficiencies, in-betweenness, and incompleteness of the geoweb's cartographic "inclusion".

#### ***3.4.2.1 Inclusion and Hospitality***

Google's Map Maker product aims to "improve the quality of maps and information" for more than 160 countries by allowing registered users to add features to the base map. Over time, the result of the Map Maker collaboration migrates to Google Maps, where it

becomes the authoritative map of that area. (By contrast, Google's My Maps allows users to layer information over and create personalized versions of existing, fixed base maps.) In order for Map Maker's stated aims to be met – and, of course, before any talk of “community” can be relevant – people must possess or come to possess a desire to participate. Then, as in participatory workplace decision making, having chosen to participate, members should be “rewarded” with a sense that their contributions are valid and, ultimately, valued (Stohl and Cheney 2001). In contrast both with nation-state based citizenship, in which one can be born – or, even, can only be born, in the case of liberal political philosopher John Rawls's writing (Rawls and Kelly 2001) – into the political community, and with a corporate citizenry, membership in which has a clear financial/economic motive, Google Map Maker requires that people choose to become members for reasons that are not purely economically rational. And people are not only required to become members, in the sense of signing up to a contract or pledging to support and uphold a set of abstract values, but are asked also to participate actively in the community in ways that demand substantial time and emotional investment.

A poststructuralist political economic approach is useful here. Decentering the economic as the determinant of, or the entry point for analysing, complex social relationships entails viewing social interactional phenomena, such as the Map Maker community, in ways that take into account a broad range of motivating factors – not just financial factors but the constraints (structural and contingent) and desires that operate in a given context (see Gibson-Graham, Resnick, and Wolff 2000 on post-structuralist political economy). It does not make sense to talk of common values, as though all participants in the Map Maker community were driven to their participation by a homogeneous set of motivating

factors (or even as though any individual's motives were transparent). Michael Goodchild (2007), in his exploratory comments on the geoweb phenomenon, offers some interesting suggestions about the types of issues that might motivate people to participate. Below I combine Goodchild's insights with the marketing appeals made by Google Map Maker to suggest three possible motives for participation in the Map Maker community. The first two I consider very briefly; the third – a commitment to mapping democracy – is considered in greater depth, since this brings us back to our core concern: disrupting uncritical claims for democratized cartography.

**a) Benevolence**

In the absence of financial motives, at least on the part of individual contributors, Map Maker relies on something else, and that “something else” might be benevolence (albeit tempered by the self-interested desire to “map oneself”). The Party Kit provided to aspiring Mappers who want to host a Mapping Party<sup>14</sup> – an actual, physical party of friends and family – to enroll new members urges people to “map neighborhoods that you care about (where you grew up, where you went to school, etc.).” As Goodchild argues, “people might derive a certain personal satisfaction from seeing their own contributions appear in the patchwork” (2007, 219); certainly the Party Kit makes a powerful appeal to map-makers to take ownership of and to give voice to an un(der)represented area.

**b) Personal projects and self-interest**

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<sup>14</sup> Since this paper was written, the scope of Google Map Maker has expanded beyond “unmapped” regions to provide for user editing of roads, bike trails, points of interest, etc. in all locations. Simultaneously, the clunkily-named Mapping Parties have been rebranded MapUps.

Google Map Maker's Party Kit offers a PowerPoint presentation for use at the Mapping Party. The presentation explicitly answers the question, "What do I get out of this?" The answer – "build out your mapping reputation" – is accompanied by an impressive-looking selection of Google Map images captioned with "6000p edits!!" It is an interesting question – though one for another time and place – to consider the sustainability of a model of participation based either on altruism or on rewarding the expenditure of one's time and labour with the "feel good" of having one's screen name cited in the credits of a map owned irrevocably, worldwide, and royalty-free (Map Maker Terms of Service) by someone else.

**c) A commitment to a democratic mapping vision**

Walzer's (1983) conception of complex equality requires a form of egalitarianism in which dominance in one sphere (economy, politics) ought not define dominance in another – that goods be distributed in accordance with their socially defined or accepted meaning, rather than on the basis of the distribution of a single good (such as money). The definition of social meaning – given that meaning, for Walzer, is contingent, contextual, and culturally produced – necessitates the existence of:

- some kind of deliberative dialogue;
- some kind of public sphere in which such deliberation takes place;
- agreeable rules to govern the scope and conduct of deliberation and
- a defined/definitive public from which to draw.

Socially produced meaning thus emerges from deliberation within a defined community of members.

Membership (versus exclusion) and the ways in which and by whom barriers to membership are erected and enforced, then, are central to geoweb community. And immediately, if we propose some normative definition of a “just” or “equitable” or “democratic” deliberative space – the participatory Google Map Maker community and the norms of membership therein, for example – we are faced with a dilemma: if justice is operationalized as resulting from the collective will, procedurally decided upon and appropriately articulated by the members of a community, there exists a necessary a priori naturalization of the community. That is, the community – and, thus, those people included in and excluded from the community – must exist prior to the practice of deliberative discourse within that community, a dilemma articulated with great clarity by Seyla Benhabib:

“those who are affected by the consequences of [norms/rules of membership/ citizenship] and, in the first place, by criteria of exclusion . . . cannot be party to their articulation”

(Benhabib 2004, 118).

If, indeed, a commitment to democracy is a motivating factor for participation in the Map Maker project, then continuing participation requires that democracy be seen and felt. One important part of democracy’s “being seen to be done” is the accessibility of a public sphere, a deliberative space, in which the meaning – if not the absolute content – of rules can be discussed. At the most everyday level is the direct democracy of moderation, the

procedure by which edits to the base map are validated. And although this rendering of “direct democracy” is speciously egalitarian, it is underpinned by a structure in which each vote is by no means equal. Rather, “citizenship” is stratified in (at least) three tiers.

#### **3.4.2.2 Tier 1: *The stranger/enemy***

If the Map Maker community is a community, we can ask, How is it constituted? – not as a historical contingency of corporate decision making and financial crystal ball gazing but as a continuous playing out of day-to-day performances (Walzer 1983, chapter 2). One answer is that people choose to join the Map Maker community, to share in its vision. But who can choose, and whose vision are they choosing to participate in? Walzer distinguishes between strangers and enemies: the former deserving of hospitality, the latter legitimately excluded. Google makes no such distinction. New Map Maker members’ submissions are vetted. Not only that, a member of the Google Map Maker Team is more explicit in a post to the Map Maker group’s online discussion forum: those up/down votes that new members engage in to establish themselves as active and valued members of the community? “Approvals by experienced users counts for more than approvals by new or infrequent users” (Kaushik Sridharan, post on Map Maker Google Group, 18 April 2009).

#### **3.4.2.3 Tier 2: *The semi-permanent-resident alien***

The transition from Tier 1 to Tier 2 citizenship is gradual, and never complete. There is no (stated) objective threshold for crossing from suspicious potential enemy/outsider to welcomed stranger. After a certain undefined period of time, number of edits, frequency of edits, or whatever other rubric is used, a member’s contributions become authoritative,

such that they can be added to the base map with minimal moderation, or none at all. Certain further benefits accrue as a user gains experience in the community and comes to learn and to conform to the norms of community practice. In 2009, 300 edits entitled a member to attend the annual (real-life) Map Maker conference in India, for example. Even as an esteemed and valued community member, however, the Tier 2 citizen occupies a curious liminal space between an outside occupied by excluded stranger/enemies and an inner sanctum of salaried Googlists. The Tier 2 citizen can vote – for what that is worth; it varies, as we have seen – and participate in a circumscribed procedural discourse via up/ down votes and posts to the community forum, interventions that are now more authoritative thanks to the “reputation” gained from a substantial investment of time. Given sufficient financial means, excellent public speaking ability, and the honour of being selected to speak at the annual conference, a Tier 2 citizen might conceivably be able to comment critically on areas usually outside the publicly sanctioned discourse.

#### **3.4.2.4 Tier 3: The citizen**

Tier 3 citizenship is unlikely ever to be attained by an individual entering the community; “full” citizenship is beyond the reach of even the most ardent devotee. This inner sanctum is an exclusive space in which the constitution (Terms of Service) is modified on a whim, from which members can be removed to taste, and to which financial reward accrues. Recalling the Wikipedia model of democracy, the paid staff which constitutes the Map Maker Team occupy a space unlikely to be reached, therefore, by the Indian university student, the fifteen-year-old Kansas City cartophile, or any of the resident aliens by whose labour the Map Maker fort is built.

### 3.4.3 Authoritative maps: data matters

As I suggested in the case of Google Map Maker, one potential appeal to participating in the production of neogeographic mappings in this particular case is the prestige, in Goodchild's terms, of association with the authorship of authoritative (and attractive) map products. This question of authority, although only speculatively sketched out as a potential motivating factor driving user contribution to online mapping projects (Goodchild 2007; Boulton 2010) goes to broader questions of the affectivity of maps as texts, and specifically the ways in which maps work as persuasive, rhetorical tools *and* as important material actants. Matt Wilson's work offers a sustained – both empirically and theoretically – account of the coming together of these two dimensions of the power of digital mappings. In particular, he considers specific empirical cases of the ways in which data are geocoded, legitimized and used in an urban politics of suburban Seattle (Wilson 2010b).

On the narrower issue of authority qua quality, Goodchild (2007), draws a contrast between authoritative spatial information, which has the distinction of being authored, sanctioned, and thus recognized by powerful actors such as a major private sector entity or a state agency or government office, and “assertive” information which is that information collected/contributed by lay people without, necessarily, recognized cartographic qualifications or institutional affiliations. The distinction between authoritative and assertive is highly problematic. In my view there are two major objections to making such a distinction:

First, it assumes a particular (inferior) status for crowd-sourced or lay information, and a particular authoritative (superior) status for official information in a way that implies a



greater degree of reliability or accuracy automatically attributable to official cartography. Indeed, elsewhere, Goodchild makes specifically this argument: that the growth/prominence of neogeographies (what he calls VGI, or volunteered geographical information) is likely to be limited by reason of quality issues, and a lack of quality control (2008). But the divide posited between authoritative and assertive mapping is not absolute (the neogeographic becomes the officially cartographic), as I have described in the case of Google Map Maker as just one example among many.

Frequently, as in the case of the innumerable layerings based on Google's mapping and satellite imagery products (Google Maps and Google Earth), there is no clear division from a user perspective between those professional, corporate funded components of the map and those contributed by users. That is, it is more appropriate to talk about authoritative mapping platforms and authoritative mapping tools than authoritative maps per se. Such a claim is a central concern of critical and participatory GIS work, for example, and the argument is even more appropriate in the sphere of mobile locative media where, by design, distinctions between something like authoritative, proprietary data versus assertive user-contributed annotation are relatively absent. Moreover, the assertive, user-generated data contributed to Google's Map Maker *becomes* the authoritative base map once it is incorporated into Google Maps. At that point there is no disclaimer provided as to the potentially less authoritative provenance of the map, and certainly no practical distinction from users who, as my interviews for this project show, rarely pay critical attention to the authorship of the mapping products they use. The implications of this blurring both in user perception and technological and aesthetic quality between professional and lay mappings are numerous. In our case, however, the

lack of awareness and/or caring on the part of some consumers about the authorship of their useful mapping products (see Table 5.5), points to the general affectivity and power of the medium and a lack of popular discrimination between, say, corporate annotations of corporate [Google] maps and corporate-looking lay annotations of corporate maps.

Second, and related, the assertive/authoritative binary overlooks the potential for multiple readings, deployments, contestations (etc.) of digital spatial data in ways that may confound this simple authoritative/assertive dualism. That is, not only can states assert, but, as we see in our discussion of the processes underlying digiplace, lay knowledges can become authoritative insofar as they become the trusted, commonsense, visible knowledges. Our empirical evidence suggests, further, a hopeful (or worrying, depending on one's perspective) moment in which many users are either skeptical about the accuracy and provenance of digital annotations irrespective of source *or* receptive to any superficially useful locational interjection (see section 8.2).

As Caquard (2011, 3) summarizes:

According to Andrew Boulton (2010), Google plays on the commitment to a democratic mapping vision in order to create a sense of belonging to a community that reciprocally stimulates the free participation of volunteers in their project

Part of this motivation, arguably, is the blurring of any distinction – in the case of Google Map Maker – between these volunteer generated mappings, and the corporate basemap. Rather than creating radical counter-mappings, local knowledge, expertise and mapping labor are deployed toward the seamless finessing of the official, corporate map. Indeed,

Joe Gerlach (2010, 165) problematizes the assumption, in general, that openness of cartographic platforms entails the democratization of cartographic practice. Declaring the imperative of counter-mapping and “indigenous” mapping to be the representation of “stories of disenfranchised indigenous populations faced with the prospect of annihilation by a Western hegemony”, Gerlach (2010, 165) finds OpenStreetMap and similar products falling short of such radical practice by relying on the very codes and expertise centrally implicated in colonialist mapping practice. In this way, the geoweb entrenches, even as it obscures with seductive appeals to democracy, the authority of the grid.

Using a slightly different vocabulary, Macfarlane (2008) in his evocative and highly romantic tour through the “wild” landscapes of the British isles distinguishes between grid maps and story maps. While story maps are deeply personal mappings entailing personal, embodied interactions with places, the grid map is a functionalist product devoid of creative potential: “dream-proof, impervious to the imagination” (Macfarlane 2008, 107).

However, the boundaries between the grid and the story, the authoritative and the assertive (Goodchild 2007) are less stark in an era where personal, narrative data are stitched into a stolid grid, and the insidious grid is presented, playfully, as a personal tour guide or social recommendation. Moving beyond a broader framework for interpreting the power of maps as a rhetorically powerful intervention in urban politics – an appeal to policymakers – Wilson (2011) reiterates a theme, familiar in critical GIS, about the complex problematic of negotiating the borders of lay and expert knowledges or of the persuasive power of co-opting the tools of the powerful for towards political change (Sparke 1998).



## 4. Main Areas of Interjection

### 4.1 Chapter summary

- This chapter builds on the previous one to highlight three emerging areas of scholarly interest in locative media. These literatures, while diverse in disciplinary and theoretical grounding, are marked by their specific foci (empirical and conceptual) on subjective engagement with locative media technologies. In particular, these studies – whether highly theoretically (section 4.5) or empirically (section 4.3) biased– are concerned with the everyday, social implications of locative media consistent with the present study’s methodological and substantive concerns.

### 4.2 Beyond niche users: the banal subjects of locative media

We must be careful not to make unsustainable, exaggerated or ethnocentric claims about the ways in which locative media always, everywhere, and for everyone work in particular, limiting ways via, for example, the objectification of knowledges (Wilson 2012), the corporate appropriation of lay knowledges (Boulton 2010), or the problematic promotion of low-quality (if crowd-sourced) spatial data (Goodchild 2008). Neither inherently liberating, nor inherently “evil”/dystopian, only in and through their specific, grounded practices, I argue, can the ways in which digital mapping platforms *work* be examined. As Gwilym Eades (2010) rather gravely warns us, “our children, our teachers, and our future selves”, and not only Paul Kingsbury and JP Jones’ (2009) intoxicated “playful dilettantes, and the like” (Eades 2010, 672), use and are subject to these technologies – a direct criticism of Kingsbury and Jones (2009, “and the like”) and their tendency to produce “wanton” (Eades 2010, 672) accounts of technologically-savvy white males’ playful experimentation in/with digital technologies.

I would modify Doreen Massey's (1991) parallel argument about the politics of writing time/space compression to suggest: that the story of a high-tech, locatively mediated (or time/space-compressed) world of ubiquitous connectivity and interactive digital mapping is, to some extent, the story of middle-class academics and other "people like me", like her, like us – and is not, by any means, a universal experience of space for myriad others positioned differentially in respect of processes of globalization, digitalization and the cod(e)ification of society. The stories of intoxicated dilettantes are not the only stories to be told.

I would then draw a qualitative distinction between, on the one hand, the background experiences of technologies of government and planning predicated on digital mapping platforms and georeferenced statistics that in many ways cite/continue earlier surveillance regimes (making it hard to sustain an argument that digital mapping always already fundamentally changes everything for everyone everywhere), and, on the other, the richly/densely mediated experience of the smartphone-operating (e-)flâneur of the digital city (cf. Kingsbury and Jones 2009; Eades 2010). I would make a further distinction too, related directly to the present study's participant selection process: that the active geoweb participant community is by no means representative of locative media users in general. It is significant then that, rather than following mapping/geoweb enthusiasts, or analyzing and mapping the contributions of active participants in geoweb authorship, this study should deal with the experiences of ordinary locative media users: the two thirds of young adults in the United States with a smartphone (Nielsen 2012).

These questions of positionality and ethnocentrism are suggestive of a need for a more sustained engagement with subjectivity and locative media, as a crucial methodological

issue for geographers studying these phenomena. This study attempts to engage these questions, in a specific technological and locational context, through the development of a more widely applicable methodological framework: that is, the development of research exercises with naturalistic digital platforms, followed up with semi-structured interviews and surveys. This study does not – and nor could any individual study – purport to offer the final word on, or a worked out universal theory of, the ways in which locative media work along axes of difference in creating variegated experiences of place. It does, however, seek to draw out some interesting contrasts and commonalities between the ways in which specific individuals make sense of and narrativize their engagements with (locatively mediated) landscape. In particular, I focus on landscape aesthetics, emotion, and user experience.

Based on conceptual studies extant, there is a clear case that can be made around the disciplining effect of “geomedia” (Lapenta 2011a) in engendering particular ways of conceiving and interacting with place, not least in terms of the specific bodily orientations implicit in the context of handheld devices. Empirically, however, these claims are yet to be fleshed out with reference to ordinary mapping publics, such as non-expert smartphone users. However, based on a range of studies focusing on specific, very deliberate mapping exercises, we can point to the argument that digital mapping technologies arguably produce new kinds of subjects (and objects) of knowledge (Wilson 2011), although the precise techniques and practices by which this subjectification is enacted, and the extent to which it can be contested, can only be explicated, I would argue, with reference to specific empirical contexts. Thus, Wilson’s (Wilson 2011) work suggests, in the specific case of the neighborhood evaluation survey on which he reports,

the act of codifying/cod(e)ifying knowledges works to discipline bodies towards particular practices of knowledge production: that is, to “see” in terms of categories. Specifically, for Wilson, this entails the collapse of the social, of heterogeneity, of tacit knowledge, embodied experiences, and uncertainty into categorical certainty, into legible and actionable data. In a double move then, the practice of cod(e)ification – rendering knowledge as (quantitative) data – objectifies knowledge, stripping the subjective content both from its production (the neighborhood residents’ engagement with the PDA<sup>15</sup> devices) and from its referents: for example, eliding the social processes underpinning homelessness and graffiti in favor of documenting their identifiable visual markers in the material landscape.

There is a strong case to be made, therefore, about the social effects or categorical violence of code, and not least about the a priori structuring, via software/hardware, of the types of data/media that count. That is, to be analyzable and actionable, in that case, data are reduced to entities (locations) with attributes (categorical values) to be collated in a GIS database as codes and/or georeferenced images. Whether or not this argument about the elision of the social by geocoding is overwrought or overstated – and whether it is in any way uniquely a characteristic of GIS-based neighborhood evaluation versus other (paper-based) methods of data collection – is an open question. Clearly code is an important actor in this context, but the challenge, I would argue, is not just to theorize the violence, as it were, of code but also to analyze empirically the specific ways in which coding actually works, in which people might understand/narrativize the processes of

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<sup>15</sup> Personal Digital Assistant: an anachronism for a handheld digital device, the functionality of which has largely been replaced and extended through a range of portable devices such as smartphones.



which they are part, and enact or *resist* (and problematize) these subjectivizing processes. More banally, not every interaction with locative media is a deliberate political or ideological intervention. Paying attention to the ways in which locative media work in/through ordinary landscapes necessarily requires the inclusion of more “typical” locative media producing/consuming publics.

Thus, in response to “what difference do digital mappings/locative media make?” one (incomplete) answer might be: they produce/entail new subject positions that enroll people in mapping processes and knowledge production (see also: Boulton 2010). Additionally, in response to an audience member’s questioning on his presentation “Mapping practices, urban politics, and the coding of community” (University of Kentucky, 29 November 2010), Wilson identifies as a key distinction between digital and paper mapping practices the embodied, tactile engagement of residents in the manipulation and collection of georeferenced data using handheld PDA-like devices, distinguishing their method from other possible kinds of data collection. There is a potential argument that can be made, therefore, that the qualitatively different, arguably more immersive experience with handheld devices (versus paper maps) has important consequences in terms of subject formation, learning and memorization/spatial cognition, in comparison with other mapping modalities.

Recent research in museum studies, and broader location based services (LBS) literatures, have paid empirical attention to just this question of the difference that digital makes, especially in terms of navigation via paper versus digital maps (Ishikawa et al. 2009). Although the paper-versus-digital question was not within the scope of the present study in terms of an explicit methodology of comparison, participants nevertheless

alluded to precisely the awkwardness and/or enjoyment of interacting with the Street-Based exercise's hardware vis-à-vis other mapping modalities, or other user interfaces, with which they may have been familiar. Ishikawa and colleagues (2009) note, for example, that the presence of an electronic/mobile device in the context of navigation/exploration tasks tends to entail an insular/immersed orientation to one's surroundings (see section 4.3).

Although the present geoweb – the volunteered geographical information that comprises myriad people's atlases, open source maps, artistic interventions and so forth – arguably represents a paradigmatic shift in respect of public participation mapping (Elwood, Goodchild, and Sui 2012), lay/public mapping is not a novel phenomenon. For Bill Bunge (Bunge 1973; see also: Merrifield 1995), for example, mapping the city entailed a radical geographical “expedition” into inner-urban landscapes of deprivation and inequity. Public participation GIS, though not always as explicitly or extremely radical as Bunge's expeditions, nevertheless works to enroll community groups and individuals in the processes of geographical knowledge production. Frequently, distinctions drawn between present locative media practices and earlier iterations of public mapping emphasize the new authorship model inherent in spatial data production – the broadening of mapping publics – rather than the embodied, contextualized and socially embedded practices through which locative media are produced and consumed. Doing so misses an important opportunity, particularly on the part of more explicitly radical geographers, to mobilize however proleptically these earlier activist works.

Authors such as Goodchild (2007) and Budhathoki, Nedovic-Budic, and Bruce (2008) point out the vast broadening of authorship of georeferenced data to include students,

novices, volunteers of all kinds, as well as individuals' whose data are involuntarily enrolled in various projects (see Obermeyer 2007 on the geospatial data by-products of compulsory information disclosure, for example). But while the paradigm shift in crowdsourcing might be characterized as one from making the *tools of the powerful* more accessible (as in participatory GIS), to making more *powerful tools* accessible to all (as in OpenStreetMap and GeoCommons), it is frequently the case that the potential of the technology and its model of authorship exceeds in its openness, democratization and devolution of cartographic power the actual patterns of geospatial knowledge production. The assumption or perception that a large crowd-sourced dataset necessarily originated in some more-or-less democratic way from a large pool of authors must be challenged, or at least assessed, by critical geoweb scholars (cf. Elwood, Goodchild, and Sui 2012; M. Graham, Zook, and Boulton 2012) who run the risk of being seduced, as I argue (Boulton 2010) by a rhetoric of openness, horizontality and democracy (in platforms such as Google Maps) which may not unproblematically map onto actual practice. Similarly, and echoing our phrasing around the duplicity of code (Boulton and Zook forthcoming), Mark Graham (2012, 4) describes online platforms as “duplicitous in their appeals to be neutral, objective, and comprehensive” in comparison with earlier utilitarian publications such as thirteenth century navigational charts or twentieth century encyclopedias which are, unselfconsciously, elite products relying for their authority upon the intellectual and political provenance of their publishers.

This is a situation – the disconnect between the rhetoric and potential of broad-based geographical information authorship, and the reality of relatively small (or obscured) participation – that pertains across several platforms. For example, Wikipedia contains

hundreds of thousands of articles – “the sum of human knowledge” being Wikimedia’s (the parent Foundation’s) stated goal (Battles 2012) – contributed by hundreds of thousands of editors (Wikipedia’s terminology for authors or contributors). However, not all editors are created equally. Many contribute a single edit or a handful of edits to a particular article of interest to them, edits that may be reverted by the collective will of more seasoned editors by reason of any number of more-or-less well-documented infractions ranging from “original research” – Wikipedia shorthand for claims not referenced to normatively authoritative sources – to “NPOV” (neutral point of view), referring to any edit or insertion that violates the collective perception of political and ideological neutrality. Needless to say, the definition of neutrality is very much a movable feast, a social product of the biases and expectations of Wikipedia’s dominant (in my view, left-libertarian, although all vastly diverse quirks and conspiracies are aired in the name of equality) North American contributor base (Swindle 2011). Moreover, the geographical concentration of Wikipedia’s contributors is stark, a pattern reflected in the subject matter of articles, particularly those about places (M. Graham 2012).

This veneer of democracy or mass participation in the production of geographically referenced information therefore has important implications for how people perceive the status of crowdsourced content. Fully 88 per cent of participants in the online Street View exercise described the annotations provided as “accurate”, without (presumably) any fact-checking of the claims presented therein. As Francesco Lapenta (2011a) points out, there is a disconnect between the “social adaptation” practices of ordinary individuals (the increasing normalcy of contributing geographically referenced data voluntarily), and the emergence of a new “socio-economic order” in which substantial influence appends to

those individuals and corporations with the power to order and to capitalize user-generated content in controlling the production/exchange of dominant images and representations constitutive of “immaterial places” (Lapenta 2011b, 2). This flags a key tension underlying work on neogeographies: that, although emerging locative media technologies may be taken-for-granted as sources and repositories of information, entertainment and the banality of everyday life, the overall architecture of algorithms determining the terms and content of these interactions are frequently far less transparent.

Aside from understanding the nature of geoweb communities, the contours of geoweb participation, and the corporate/political/ideological interests served by such arrangements (Thrift 2011), a related – and also relatively under-explored – research agenda is to consider more explicitly the consumption side of the equation (even as we recognize that the production/consumption binary is problematic in the context of geoweb information): how do users engage with consumer locative media technologies on a very practical level as they navigate, seek information about everyday places, and grapple (or not) with the technical and political contexts underlying locative media services?

### **4.3 Location based services and mapping subjects**

Presenting their comparison of “active” (using an electronic mobile “art-tour system”) versus “passive” (using a paper guidebook) navigation between points of interest (works of art) in a Tokyo mall, Toru Ishikawa and colleagues (2009) assess not only the navigational success of the two groups (not significantly different), but also the participants’ level of recognition of sites/sights along the route, and the works of art

themselves, based on a post-experiment interview exercise. Their analysis of cognitive maps drawn by the active (mobile device-mediated) and passive (paper map) navigation groups found no significant differences in terms of accuracy, between the two groups.

Of more significance to an explicitly landscape-oriented, Street-Based context, the Ishikawa et al. (2009) study did, however, note differences between the ways in which individuals interacted with works of art, finding that mobile device-mediated participants were less inclined to view explanatory video/text material that formed part of the exhibits than were guidebook-mediated participants. Perhaps more pertinently, individuals' "appreciation" (a numeric ranking of their enjoyment) of art works did not vary significantly between the two groups, and nor was the time spent viewing/engaging with the material exhibits different between the two groups. Although it is problematic to extrapolate from Ishikawa et al.'s work with a specific locative media interface in a specific location (or type of location: a museum) broader implications for locative media-based navigation/exploration more generally, there are some clear similarities between their work and the experiences of participants in the present study. One of the key grand tour questions asked of my participants revolved around their describing the route they took through the neighborhood. On several occasions, participants discussed in some detail the ways in which they made use of placemarks in choosing a route through the neighborhood; typically, participants suggested that they made an effort to incorporate as many placemarks as possible, while remaining open to their interest being piqued by discoveries en route. And consistent with Ishikawa et al.'s (2009) findings around the walking practices of locative media users, my participants were often explicit in stating that their route was determined primarily by the positioning of placemarks provided in

the Street-Based interface. Perhaps unsurprisingly, the physical information markers in the landscape – street signs, store signs, church noticeboards, Bluegrass Trust plaques, posters, yard signs and the like – did not warrant mention by the vast majority of participants. However, two chose to mention explicitly the role that physical street signs played (or, more accurately, didn't play) in their walk through the neighborhood. These responses are significant in that they concur with Ishikawa et al.'s tentative findings regarding the more insular orientation implicit in electronic-based navigation, and are consistent with a broader argument about the particular embodied orientation a smartphone-engrossed, locatively augmented walk takes on.

Michael, 28, explained that:

...actually, it was weird but I can say that I navigated by the map. I'm not even sure I you know followed, I mean, even saw street signs or. [It] made more sense to follow the blue arrow [referring to the marker on the augmented reality map indicating current location] than the, well, signs as you know are typically not that great in Lexington, in the neighborhoods. And which way you're headed is hard to tell.

This is particularly significant in Michael's case, I think, given the extent to which he deliberately and explicitly sought to stray from, in his words, "the beaten path" of placemarks (see section 8.2). Even though Michael show skepticism about the supposed promotion of particular locations, via placemarks, at the expense of others, he navigated "head down" and using the provided interface, even as he deliberately sought to pick a path avoiding provided points of interest.

Likewise, Jillian, 31, made reference to physical (versus virtual street signs) in describing her navigation through the neighborhood:

... and as I headed towards, towards I guess, north, I was becoming turned around because it's a grid but not? So, there's that. And oftentimes the direction was, not – I was having some issues [laughter] issues with the navigation, not the navigation GPS but the, sense of direction. So yeah I would use the street numbers on the –

AB: - on the street signs or? –

Jillian: - on the. No, not the street signs. The signs? No, it's not on there. I found that out, walked two blocks. No, the, actually the only way to figure out the house numbers was from the map, so yay to that. I ignored the street signs after a while, when I discovered the one was missing.

AB: Missing? Huh?

Jillian: yeah, up at

AB: OK

Jillian: well, the first one when figured I would try to memorize the route so I wasn't like dum-de-dum [mimicking looking down at phone]

Jillian, then, consistent with Ihsikawa et al.'s (2009) observations of users of a digital museum guide reported navigating primarily with reference to digital markers and signs rather than the physical placemarks and signs (albeit it limited, in the form of street names) within the neighborhood, only having found those physical signs inadequate for her purposes. It is notable, however – and this is a topic I return to in chapter 7 – that Jillian, as with several other participants noted a level of self-consciousness (“dum-de-



dum”) in interacting with the smartphone-based locative media interface. Partly, as my participants’ comments suggest, this discomfort was based on their feeling an obligation (or expectation) that they should utilize the provided technology, but partly this might signal the extent to which the street-based potential of augmented reality technologies is (at present) limited in mass-appeal by the particular performative, gestural, and sometimes attention-drawing practices involved in their usage.

Thus, although structured tasks – “navigate between art works” (Ishikawa, Murasawa, and Okabe 2009) or “explore the neighborhood” (this study) – can only approximate naturalistic “real life” scenarios, it is interesting to note that the presence of handheld devices did not, according to Ishikawa et al. (2009) necessarily adversely affect – reduce the duration of – users’ engagement with the materiality of places relative to distractions provided by other navigational media such as the classic guidebook, although the Ishikawa et al. (2009) study suggests that, given the availability of media-rich representations of the exhibit, mobile-users may be less hands on in their viewing practices.

An open question in previous studies is the extent to which the *content* of spatial annotations themselves might work to reconfigure perceptions (“appreciation”) of place/art vis-à-vis other possible spatial annotations. That is, to what extent and in what ways might the content (rather than the mere presence of the interface) of locative media – the types of information and media included within the art guide, or the specific locations or points of interest emphasized in a set of Google placemarks, for example – play into such navigational, memorization, and/or “sense of place” (for example, Talen and Shah 2007) outcomes? The present study addresses this presence versus content

question by utilizing discrete sets of annotations within equivalent interfaces/maps. This study demonstrates that the content, as well as the presence of annotative locative media, is a significant factor in individuals' understandings of and engagements with place (see chapters 6 and 7).

In both the case of a navigation exercise within a gallery/mall space (Ishikawa, Murasawa, and Okabe 2009) and a neighborhood evaluation exercise using GIS (Wilson 2012) there are clearly, then, particular embodied, subjective engagements with places (en)coded within/by the specific locative technologies deployed. Thus, in these empirical cases, the digital map – whether a navigational tour guide device, or an active logging of data via PDAs into a GIS system – works to produce particular subjective performances and tactile engagements with the map/space, even as the specifics of those interfaces vary between individuals and according to the specific material and technical qualities of the technologies/devices/maps themselves.

#### **4.4 Augmented Realities**

With Mark Graham and Matt Zook we have sought to develop the idea of augmented realities as a conceptual bridge between the existing literature on geographies of locative media, technology and cyberspace, and broader critical geographic concern with questions of power and representation (M. Graham, Zook, and Boulton 2012). I would emphasize from the outset that our staking a claim for “augmented realities” as a critical geographical concept is intended to complement the more broadly recognized conceptualization of Augmented Reality as a technology or platform. Thus, I would draw a distinction between, on the one hand, Augmented Reality platforms and layerings such

as the Layar application utilized in the present research, and the conceptualization of augmented realities as:

“the indeterminate, unstable, context dependent and multiple realities brought into being through the subjective coming-togethers in time and space of material and virtual experience”

(M. Graham, Zook, and Boulton 2012)

The distinction is important to maintain since the consumer (and much of the scholarly) literature on the phenomena of augmented realities recognizes Augmented Reality as a fairly narrow and specific subset of locative technologies involving an immersive layering of spatial annotations (broadly defined) via specific software platforms (such as Layar or a dedicated gaming application). In my view the concept of augmented reality developed in our work functions as an effective bridge between traditional geographic work on technology, neogeographies and code – which, as we have seen, have tended to coalesce around niche subdisciplinary concerns – and a broader critical geographic endeavor. This is not to say that previous work in the field is entirely uncritical, or unconcerned with the specific issues of power and representation raised in our piece, but what the augmented realities concept seeks to do is to both foreground particular increasingly ubiquitous examples of digital representations of place in widespread usage *and* to emphasize the conceptual and theoretical continuities between these and broader and longer-run spatial augmentations. The use of augmented realities, as conceptualized here, complements rather than seeks to supersede the concept of digiplace, an established concept within the neogeographies literature. The augmented realities concept

emphasizes not only the social and algorithmic processes by which particular digital representations – elements of cyberscapes (cf. Zook and Graham 2007a) – are given prominence (or relegated from view) but, specifically, emphasizes the ways in which subjective, locational and material dimensions together produce specific locatively mediated landscapes, particular augmented realities.

#### 4.5 New visualities and the power of locative media mappings

The world conceived and grasped as picture...does not change from an earlier medieval one into a modern one, but rather the fact that the world becomes picture at all is what distinguishes the essence of the modern age

(Heidegger 1977, 129–130)



**Figure 4.1** a locatively mediated walk through Kenwick, Lexington<sup>16</sup>

Figure 4.1 may not represent the most common type of engagement with locative media – at least not yet. The Augmented Reality platform, Layar, on which this application is based, is growing though at a fast and profitable rate, along with the number of virtual reality layers (currently over 1500) consumers may download to aid their navigation, play or exploration in cities throughout the world. Whether this means of urban exploration – the interface used by participants in my street-based walking experiments – becomes more everyday or more typical is in *some* ways beside the point. (Obviously, in some other ways it is extremely important to examine the ways in which such a technology/interface is used, the embodied performances it engenders, and the understandings/narratives of place it co-produces.) But an additional key task for geographers and critical scholars of new media, I would argue, is precisely to look behind as well as at the screen as a more generalized question about the ways of seeing/knowing implicated in digital mapping technologies more generally<sup>17</sup>.

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<sup>16</sup> This type of photograph is an almost clichéd composition in the genre of Augmented Reality marketing showing a layering of augmentation on screen on world (photographed via a camera screen, for display on a computer screen or in print).

<sup>17</sup> In my presentation at the annual Association of American Geographers meeting in Las Vegas (2009), an audience member (a PhD student with interests in critical cartography and neogeographies) took exception to my claim that we ought to “undress the beast [Google Maps] but not be seduced”. The “undressing” metaphor conflicted with the otherwise poststructuralist thrust of my work, he said, by implying that the “True” nature of Google Maps (or whatever) would be accessible if only we looked hard enough. The point is well taken; I would now stress the need not to “undress” but, digging a deeper metaphorical hole, to understand the social/technological/structural conditions of Google Maps’ clothing choice...

Looking behind the screen, although slightly glib, is in this case a useful metaphor. That is, in the first move, we look at the screen: what is being presented as authoritative?; in what format?; what is the relationship of the viewer to the image?; what is being claimed about the meaning of this place?; what possibilities for interaction, contestation, creativity does the representation allow or foreclose? But then, to look behind the screen to the landscape itself, to the broader material/imaginative place which the locative media represents and is productive of, entails an examination, behind the screens as it were, of the production and consumption of the map. Part of this might involve, as we have already seen, considering the types of mobilities, practices and understandings that embodied interaction with the screen enables, structures (or forecloses) (Ishikawa, Murasawa, and Okabe 2009; Wilson 2012). Thus, to look beyond the image itself, in all its slick, high-tech glory, is to ask now, not only what the image might represent, claim, or how the image might be used and understood, but to ask (as well) about the conditions of possibility, the social/technical architecture or ontology that allows the map/image to be produced as it is. I foresee this question of conditions of possibility, the digital image/augmented reality as a way of seeing, to have (at least) two important dimensions that I shall discuss in the remainder of this section.

I think we can make some tentative comments about i) the type of visuality implicit in a screen-mediated, media-rich digital environment. This goes to a question of the politics of knowing, to landscape-as-epistemology and to broader theoretical questions of ontology and epistemology; for these reasons, my comments on visuality will be brief for now. Additionally I want to make some brief additional comments about ii) the ways in which, to completely bastardize Michael Goodchild's (Goodchild 2007)

assertive/authoritative distinction, “assertive” geographical knowledge, becomes “authoritative” both via algorithmically defined software-sorting of “raw” digital data, and via subjective engagement (to some degree) of individuals with the processes of ranking, valuing, and ordering spatial data. Unlike Goodchild (2007), then, I start from the assumption that all spatial annotations, all representations of space, are assertive: that they act as particular claims to truth, within a particular regime of power/knowledge. The critical analytical point of departure then is not to assert that particular representations are, simply, authoritative by virtue of their authorship, but to ask instead about the conditions of possibility by which particular knowledges *become* authoritative, become dominant (while never losing sight of the fact that representations of space, however “truthful”, commonsense, or verifiably authoritative their authors’ intended claims, are always open to reading and rereading by socially situated actors who themselves “complete” the map through their engagements with it).

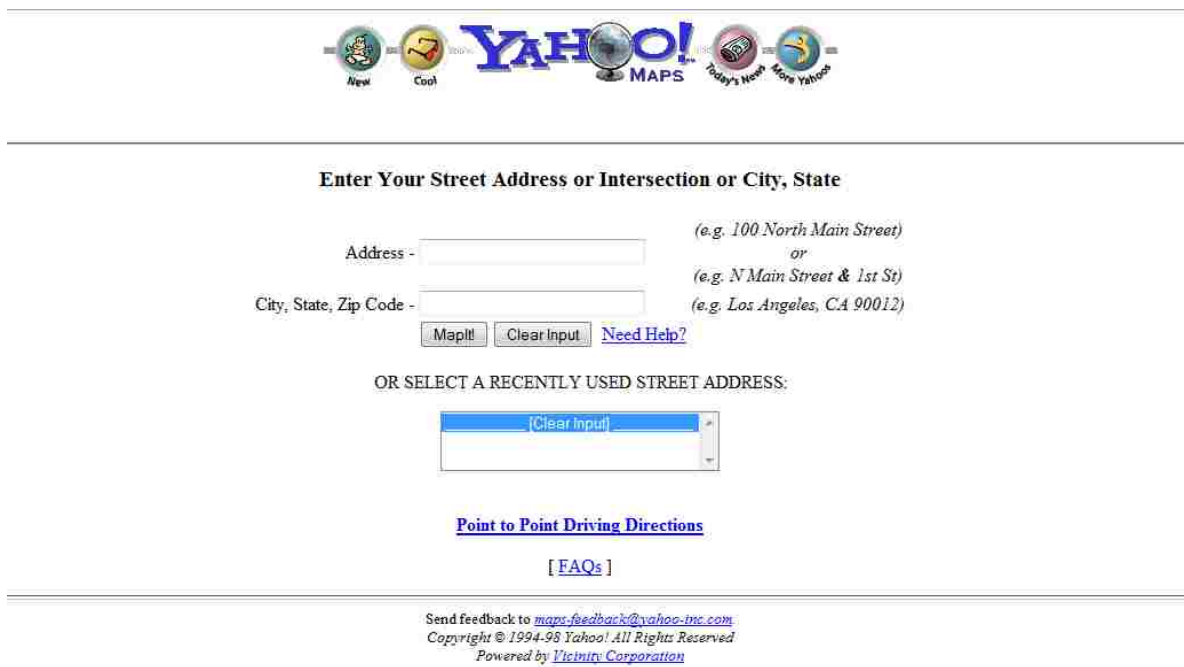
#### **4.5.1 Scene/seeing/screen: the visibility of knowing in/through locative media**

“I believe we need a Digital Earth. A multi-resolution, three-dimensional representation of the planet, into which we can embed vast quantities of geo-referenced data.”

(Gore 1998, 1)

Imagining a future Digital Earth, former Vice President Al Gore fantasized about, among other things, an interactive museum exhibit where a world of knowledge would be, literally, in the palm of a user’s hand – that is, the globe would be manipulated using a special glove. While the specific mechanics of manipulation, and the prediction that only

in an institutional (museum) setting would such technology be feasible, were a little off, Gore's prediction/fantasy is an uncharacteristically reasonable description of the present character of Google Earth: zoomable, rotatable, three-dimensional imaging, (potentially) infinite layers of information. And, increasingly, as we have seen, such capabilities are not the preserve of research institutions, museums, or even any longer home computers, but are increasingly accessible even by mobile consumer devices. Recall the state of cutting-edge consumer, digital mapping in the late 1990s as Gore articulated his vision (Figure 4.2): slow, dial-up connections, small, static raster imagery, (or alternatively, clunky CD-ROM based route-finding software), and we can understand (perhaps share?) some of the excitement about the present possibilities of digital mapping.



**Figure 4.2** digital mapping, 1998-style

(Source: archive.org's memory of Yahoo! Maps, mid-1998)



How can we think about this God's eye view – Donna Haraway's "God trick" (1988) – afforded by interactive, 3D, scrollable, zoomable digital maps? What kind of regime of visibility does such a view entail? Following Gillian Rose (G. Rose 2000 for example), I take visibility to refer to "how we see, how we are able, allowed, or made to see, and how we see this seeing and the unseeing" (Foster and Dia Art Foundation 1999, ix). Kingsbury and Jones (2009) suggest the analogy of a digital peep box, but I find this metaphor inadequate, for reasons I will explain. They write that:

the peep-box faces [stands] for Google Earth's digital pictures and bit-maps, the cellophane represents Google Earth's 'atmospheric lights' and 'clear blue skies', while the peephole mimics the interface between users and the 3D scene.

(Kingsbury and Jones 2009, 505)

"Peeping", however pleasurable [I'm not sure how far I want to push this peep-box metaphor] is a voyeuristic, passive, furtive act. Such voyeurism does not capture adequately the texture of the interactive, immersive experiences afforded by contemporary digital representations of place. Thus, while a peepshow is viewed (I hear) through a private, viewing slot [and according to Wikipedia these things still have their audience], and is situated at the margins of polite society, Google Earth/Maps is very much "PG" – naked sunbathers and other objects of the "erotics of ogling" (Kingsbury and Jones 2009, 505) excepted – and mainstream, viewed/displayed openly and without shame on bright, backlit screens. Furthermore, unlike a peep-box (as far as I know) the content of the virtual earth, the three-dimensional scene, is amenable to user input, to

changing visual perspective, to zooming, pausing – and, of course, to authoring, via the editing of existing information and the addition of new data.

What marks the excitement of Google Earth, and by extension of locative media in general, though, might not be the object of the gaze – the blurry, naked sunbathers, the quirky discontinuities in satellite imagery where the naturalistic smoothness of the globe breaks down – but the pleasure of “*the gaze itself*” (Žižek 1991, 56, original emphasis).

Along just these lines, Kirsty Best (2010) argues that:

we need to see users as desiring subjects positioned at a cultural moment where the digital information screen has been enlisted as a central driver of both utility and pleasure

(Best 2010)

Best’s (2010) argument is that the screen, working to satisfy a desire for seeing, for monitoring, is a key site/sight in the gaze of the contemporary subject of locative media. But in her (borderline technological determinist) analysis, the screen is also duplicitous<sup>18</sup>, working to construct consent to our own surveillance, to interpellate us into our own discipline as we “take up the part offered to us by the technology” (Best 2010). Best thus provides a compelling foil to optimistic claims about the creative and liberating potential of locative media.

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<sup>18</sup> When a similar sentence first appeared in my qualifying exams, I included the note: “Duplicity is ‘my’ word. I want to develop an argument subsequently about the duplicitous nature of code/software, echoing Stephen Daniels’ (1989) ‘duplicity of landscape’”. This argument – specifically this phrasing – are developed in Boulton and Zook (forthcoming) and Graham et al. (2012).

Versions of Best's (2010) argument recur in several cultural studies scholars' accounts of the visualities/visibilities of locative media. Media historian William Uricchio (2011) grapples with and attempts to contextualize the emergence of locative media within the longer run history of photography and visual culture, identifying the algorithmic intermediation of subject-object relations as the single most significant shift heralded by emerging technological platforms. Using the examples of Photosynth and other augmented reality applications – such as Layar, utilized in this study – Uricchio describes the ways in which algorithms may simultaneously work to constrain and to liberate the viewing subject. In the case of static, remote imagery (Photosynth), the viewer may explore multiple authors' images of the same location from multiple perspectives without physically moving through space. As such, he suggests, there is no prescribed (or proscribed) vantage point: any image georeferenced to a particular coordinate location is as good as any other, provided it maps to Photosynth's algorithmically determined standards for inclusion (clarity of image, identifiability of object, etc.), and any of these vantage points are accessible to the user. By contrast, augmented reality applications – where the geographically referenced annotations are viewed on-site, such as in the case of the Layar application utilized in this study – entail a particular orientation (visually and bodily) in respect of the represented scene.

Algorithmic intermediation, then, in the case of augmented reality applications tends to enforce a particular, correct, way of seeing and (thus) comprehending the scene vis-à-vis other possible annotations. Although any given location may be represented by myriad possibly contradictory images or annotations, the user experience requirements of a small-screen-based display demands that *an* image or *an* annotation of a particular place

be provided to the viewer at any given moment. Thus, as Best (2010) and Uricchio (2012) suggest, the proliferation of locative media as parties to everyday interactions with place entail a range of more-or-less circumscribed practices, the precise contours of which may vary by platform and device (for example, remote, screen-based versus street-based).

Whether Kingsbury and Jones' (2009) intoxicated adventuring – searching for the quirky, reveling in the excitement of not quite being able to see the blurred naked person – is representative of broader, (arguably) more utilitarian engagements with locative media is debatable. A full treatment of the distinction between rational/playful, logic/love, Apollonian/Dionysian is beyond the scope of the present discussion, although we might note that, in a commentary on Kingsbury and Jones' paper, Gwilym Eades (2010) slams their “flawed” treatment of Nietzschean philosophy (from which the Apollonian/Dionysian dichotomy is derived) and, more generally, their allegedly simplistic, straw man claim to have identified typically Apollonian Google users as a contrast to their own intoxicated/Dionysian adventuring. Instead, an earnest Eades (2010) warns, Nietzsche did *not* subscribe to the binary logic attributed to him, and recourse to Benjamin and the glorification of intoxication/narcotics does not save their argument. And thus, in my reading, he suggests that Google's mappings must – as I am arguing – be apprehended not as either/or, as inherently limiting and rational (qua “Apollonian”), or as inherently liberating and playful (qua “Dionysian”), but as ambivalent cultural products that may work in different ways, for different people in different contexts.

But, the meta-point of Kingsbury and Jones' paper, I think, is that particular constellations of cultural, technological and social changes produced conditions of

possibility both for Benjamin's Parisian flâneur, and for the equivalent anonymous "detective" (Tester 1994, 82), the e-flâneur, as it were, of locative media. In a well-worn phrase, Denis Cosgrove talks about landscape as "a way of seeing" (Cosgrove 1985, 55 for example) and in particular as an Apollonian way of seeing, tied up with a particular scientific, rational, perspectival (etc.) visibility (Cosgrove 2003). As the flâneur of the Parisian Arcades can be seen as a subject/product of, and reaction to, the emerging capitalistic bright lights, loud noises and automobility of an industrializing city, so the God's eye view of the locative media user – with all the e-flâneurial, Dionysian potentiality that this may (or may not) entail – is a position enabled by the advent of the twinkling screens (Kingsbury and Jones 2009) of consumer electronics and the geographical web.

For Cosgrove (2003; 1985) the "landscape idea", landscape as a particular way of seeing, emerges out of the capitalist transition in sixteenth century Europe (specifically, Italy). In this genealogy of landscape, where particular landscape visions are products of (and in turn productive/affirmative of) particular sets of social relations, landscape representations are cultural products – socially constructed, assertive claims to meaning in which the viewer is positioned in a particular relation to the scene (s)he surveys. As Lesley McCormack (1991) has shown, such claims, in early modern England – as in nineteenth century America in the form of county atlases (Conzen 1984) – often centered around claims to ownership, legitimacy, authenticity and the assertion of local embeddedness on the part of wealthy landowners of/for whom landscape maps/texts were made. There is a common epistemological thread linking the emergence of mass-consumption analog maps and landscape imagery—for example, in the form of the

ubiquitous bird's eye views of industrializing America—and the emergence of contemporary locative media representations. Both are implicated in broader ideological and social impulses. Both are made more powerful by the participation of a large public. Both position the viewer in a particular position of comprehension of, participation in, and power over the scene/screen (see Schein 1993).

However, as I have suggested, we must be careful to embrace the modesty that empirical “testing” of our claims directs us towards (Lewis 2003, 90). The mastery of the locative media user over his world (note the deliberately masculinist phrasing) is not absolute or universal. Although we can quite convincingly – from an authoritative critical theoretical repertoire – marshal literatures to support a God's eye view (Haraway 1988), e-flâneur (Presner 2010), panoptic viewer thesis, actual consumers'/subjects' experiences may vary from this norm. As I suggest in chapter 7, for example, use of locative media is not unproblematically freeing or otherwise liberating; navigating in and through locatively mediated landscapes can be fraught with fear or anger or boredom.

## 5. Methodologies

### 5.1 Chapter summary

- Studying locatively mediated landscape empirically within a cultural geographic framework requires that we pay attention to the ways in which individuals come to know about/through the landscapes they inhabit. Diverse work within human geography points to the significance of these subjective experiences of/with maps and mapping practices, including gendered and racialized dimensions of cartographic representation.
- This chapter outlines a methodological framework, including specific methods, for studying the ways in which individuals engage with locative media in exploring and evaluating a neighborhood.
- Theoretically, the framework draws on concepts from critical cartography/GIS, feminist methodologies and (to a lesser extent) more-than-representational theory, of which I offer a focused critique.
- Practically, the methods developed draw on neighborhood evaluation studies and qualitative methods literatures within geography.
- The two empirical components of this study are a Street-Based component and a Remote-Based component.
- I argue that surveying and interviewing are two appropriate methods for exploring how ordinary people think/talk about ordinary landscapes. These two methods correspond to the Remote-Based and Street-Based components of the research respectively.
- For each component, interactive user interfaces/applications were developed, closely mirroring/mimicking established consumer locative media platforms.
- The Street-Based component involved the development of a Street-Based Interface – an augmented reality application – used in a neighborhood exploration exercise and followed up by semi-structured interviews (n=20).
- The Remote component involved the development of a Remote Interface – a Street View and Google Maps desktop application – used in an online neighborhood exploration exercise and followed up by an online survey (n=150).

- The two components provide complementary intensive (Street-Based component) and extensive (the larger-n Remote component) cuts through the question of actual subjective/consumer engagement with locative media in the context of neighborhood exploration/evaluation.
- The survey and interview responses suggest that a naturalistic – i.e. familiar and realistic – user interface is important to evaluating “real world” use of locative technologies.
- In order to assess the ways in which the presence and content of annotations impacts how individuals come to understand and tell stories about landscapes, distinct sets of annotations were developed for subgroups within the Street-Based and Remote components. One set of annotations emphasized the neighborhood’s amenities, the other its architectural characteristics. In the Remote-Based exercise, a further group of participants was assigned to a map devoid of annotation.
- Established content analysis and critical discourse analysis techniques, along with simple statistical comparisons of coded qualitative data, are used to analyze the resulting data. Thus, the more extensive Remote-Based survey provides some quantitative context within which to analyze qualitative data from both survey and interview instruments.

This chapter is targeted towards to main goals. First, I present a brief, critical overview of some of the key theoretical and methodological literatures/ideas within geography dealing with the subjectivity/positionality of research subjects (and researchers). In particular, I focus on the ways in which subjectivity has been addressed in work on mapping subjects: i.e., on the socially situated nature of map production, reading and performance.

I then turn to a grounded discussion of these issues as they relate more directly to the methods deployed in the present research and proposed as appropriate methods for the study of locatively mediated landscape more broadly. In this second section, I present less a literature-based précis on the politics of positionality than a reflection on the ways



in which my understanding of these familiar qualitative research dilemmas and related methodological concerns informed my research design and played out during the data collection and analysis phases of the present project.

## **5.2 Positionality, Difference and the Place of the Mapping Subject in Locative Media Research**

“ethnographies, which are necessarily small scale and tightly focused, would be well complemented by wider-ranging observant participation. This is a method that we have employed extensively, *examining the ways in which we ourselves* interface with coded objects, infrastructures, and processes as a means to reflect on the nature of that interface”

(Kitchin and Dodge 2011, 256, emphasis added)

“it also seemed that one of the most problematic dimensions for the researcher studying the sociality of public spaces...are precisely these routine, non cognitive, embodied aspects and the solidarities that they form: if they are noncognitive, and in large part nonverbal, how can they be included in research?... One answer is to try to construct a sensitively structured technique through which research subjects can find a space for reflecting upon these practices”

(Latham 2003, 2001)

My aim in this chapter is to work through the difference that difference might make to research on locative media and so-called neogeographies in such a way that we might, nevertheless, make some more-than-anecdotal claims about the ways in which these

locative media representations work through/in landscape. More specifically: if more-or-less witting or unwitting everyday practices of/with locative media are inherently (inter)subjective and social, then it is crucial to consider the ways in which the positionalities of locative media users (and researchers) – that is, of our research subjects (and ourselves, as researchers) – matter. This question of subjectivity is a central methodological concern, and one to which researchers of locative media must remain attentive.

“Observant participation”, as Rob Kitchin and Martin Dodge (2011) term it, clearly has a place; reflexive, autoethnographic engagements with locative media are likely to contribute valuable empirical and theoretical insights into the everyday, embodied ways in which locative media (and software code more generally) work. But we should also be acutely aware that “*we ourselves*”, as they term it in the opening quotation to this section, are positioned rather particularly with respect to new technologies. This is not to say that the positionalities of my research participants – or any particular possible group of individuals, for that matter – mark their experiences as somehow more valid/valuable or authentic than mine or others’. The particular research population will, necessarily, reflect the particular focus of a given study. However, as I stress, the experiences of particular individuals with particular technologies in particular places and times ought not to be allowed to stand in for the social experience of locative media (users) writ large, whatever the allure (and value, in some senses) of purely introspective, auto-ethnographic writing.

Positionality/subjectivity is of critical (in all senses) importance to locative media/neogeography research both as an empirical focus – who produces/consumes

locative media, how, and with what effects? – but also as a methodological imperative, I argue, for a subdiscipline that seeks/ought to engage fully and broadly with (and thus be engaged more fully by) wider disciplinary and interdisciplinary debates about, and concern with, subjectivity and difference, particularly in respect of research methods.

In short, I'm concerned with a big methodological question: how might we conduct empirical research on locative media and neogeographies in ways that are sensitive to individuals' variegated and textured experiences of locative media (and landscape), and their differential positioning in relation to practices, institutions, and technologies of knowledge production and consumption (by virtue of, for example, class, gender, race and age, or innumerable other potentially important axes, contexts and intersectionalities of difference)?

My approach does not purport to be the final word on these huge ongoing problematics facing social researchers. Rather, by drawing on existing cultural geographic and/or methodological literatures concerned with the dynamics of social research and the social construction of geographic knowledges I seek to show that research on locative media can usefully be brought under a broader cultural geographic umbrella, not only as a synthesizing intellectual exercise, but as a very practical concern directed towards broadening the empirical and methodological basis of locative media research.

Thus, in this chapter, I draw in more detail on critical geographers' insights on and approaches to research methods around mapping/cartographic practices. I do so, in particular, in order to reflect on some of the ways in which the subjectivity and positionality of, and relationships between, researcher and researched can be acknowledged explicitly by locative media researchers engaged in projects utilizing

qualitative and quantitative methods as deployed in my research: semi-structured interviews and online surveying. Using examples drawn from experiences in the field, my argument is that such questions of subjectivity/positionality are of fundamental importance within a poststructuralist-oriented mixed method research design concerned with the complexities of situated practice, experience, and representation, even as we recognize that the problematic of power/positionality can never (simply or otherwise) be resolved or transcended, however sustained (or agonized/agonizing) the reflexive introspection of the enlightened post-Enlightenment researcher (cf. Sultana 2007).

Rather, I suggest that paying attention to questions of subjectivity, difference and the social nature of locative media opens up new points of departure and opportunities for dialog between, on the one hand, locative media and landscape research, and on the other, diverse subfields of geography and the social sciences. I follow, for example (though this is far from a novel argument), Lorna Philip (1998) and Sara McLafferty (1995) in suggesting that a mixed method research design involving both extensive surveying and intensive interviewing can, if used reflexively, remain compatible with a generalized anti-positivist stance.

While I want to suggest that emerging and future geographic research on locative media and neogeographies can productively strive to operationalize an invigorated commitment to acknowledging, and ultimately theorizing, difference – as is the case with broader cultural landscape scholarship on race, gender, sexuality and so forth – it is not my intention to chastise, in blanket terms, existing research approaches and methodologies on these grounds. To the contrary: recent work within the arena of locative media – such as work on the racialization of cyberscapes (Crutcher and Zook 2009) and, for example,

the embodied nature of mapping practices (Crampton 2009b; Crampton and Krygier 2006; Kitchin and Dodge 2011; Wilson 2010a) and the interactive and deliberative/adversarial spaces of online neogeography/open-source mapping communities – provides an optimistic moment, pointing towards a body of scholarship taking seriously, and addressing methodologically, the subjective/social nature of locative media-based communities (Boulton 2010), representations and practices. It is within a broader context of locative media/neogeographic scholarship attuned to and consistent with a more generally critical/poststructuralist disposition towards the experience of/with locative media that I wish to situate my discussion. The result of such reflection and reflexivity about the differentiated, contextual and subjective nature of people's experiences of/with locatively mediated landscape are empirically grounded, contextual, and perhaps more modest, claims about the role of locative media in everyday life that move beyond universal(izing) assertions about how locative media (always and everywhere and for *everyone*) work. This is not to suggest that the present study provides a mere case study of locative media, but, rather, that it comprises but one cut through, one empirical context in which to specify, broader methodological arguments.

Taking seriously questions of researcher/researched power relations and subjectivity, I want to suggest ways in which difference can be productively and sensitively acknowledged and thought towards new and more broadly pertinent research possibilities for this emerging disciplinary subfield. I move between, on the one hand, explicitly methodological literature on fieldwork and methods and cartographic practice more generally, and, on the other, the practical method/methodological consideration raised in the conduct of the present research project. Thus, I begin to work through on the basis of

the present study's fieldwork component a methodological framework for studying subjective engagement with the everyday use of locative media via diverse methods.

The remainder of this chapter is structured as follows. Next, I turn to a selective overview of the geographical literature on mapping subjects. I refer, in particular, to three strands of geographic research in which scholars have developed, whether separately or, as I argue, each in line with broader shifts in geographical thought, sustained methodological/theoretical critiques and post-positivist practices beyond the masculinist basis/bias of "spatial science"-era cartography and cartographic scholarship. Those strands are: the "new" historiography of geography; feminist and critical/participatory GIS; and emerging critical, social research in neogeography, towards which I hope my (this) work will contribute. This review provides a backdrop/basis for my concern with the subjective nature of mapping practices as engagements with landscape. Thereafter, I proceed with a more detailed reflection on the ways in which, throughout both the fieldwork/data collection and analytical moments of my research, I attempted to take seriously the positionality of research subjects, be reflexive about my position and role within the research processes, and ultimately to practice research that is both of broad interest *and* produced in a spirit of mutuality with research subjects. I reflect on some specific instances in which the heretofore hypothetical dilemmas of fieldwork impacted the implementation of this particular project.

In sum, I lend some detail and justification to my desire to treat the findings of this study as

“critical provisional [analyses] based on plurality of (temporally and spatially) situated voices and silences” (Peake and Trotz 1999, 37)

rather than universal accounts of how locative media always and everywhere work through landscape.

### **5.2.1 The mapping subject – a brief (selective) genealogy**

The mapping subject, or the positionality of map producers/consumers, has received a good deal of attention from a diverse set of geographers over the past couple of decades or so. It would be impossible, here, to do justice to a full genealogical account of subjectivity and mapping, which would require detailed engagement with (at least) three decades of critical, feminist and poststructural/postmodern scholarship across the discipline. Instead, I take a more impressionistic snapshot of key trajectories within (heuristically delimited) subdisciplines that are most pertinent in the current research context. Doing so foregrounds the importance of treating consumers (and authors) of digital representations of place not as individually irrelevant, disembodied fragments of an aggregated whole (cf. DeLyser and Sui 2012), but as important, socially situated mapping/perceiving actors.

Concomitant with the increasing prominence and mainstreaming from the 1990s onwards of critical (specifically, poststructuralist and feminist) engagement by geographers with a broader social scientific/humanistic critical project disrupting the masculinist universal subject of social science (see: G. Rose 1993; Haraway 1988), a range of geographers have sought to engage both thematically and methodologically with the difference that

(gender, age, and race, etc.) difference makes to cartographic practice (and research). Such a focus on the subjective, embodied nature of mapping practice is apparent, and potentially useful in the current research context, in the arenas of: the new historiography of geography; feminist and other critical/participatory GIS (Geographical Information Science/Systems) research, and, latterly, in the emerging literature on neogeographies.

#### *5.2.1.1 The new historiography of geography*

The so-called new historiography of geography, concerned with explicating, in the phrasing of David Livingstone (1993), the contextual histories of a discipline, raises interesting (methodological) concerns about (how to get at) the situated practices of geographical knowledge production including those messy, embodied and inherently social/intersubjective mapping practices by which authoritative claims to geographical knowledge are made. Although embodiment is not a primary theoretical lens developed here, it is a topic that has substantial overlap with more-than-representational theory, and resonates with my participants' sense of fear or disconcertedness in exploring an unfamiliar neighborhood. (I reflect on some of these connections in section 5.2.1.3.)

Indeed, embodiment is emerging as an important theme in a range of (sub)disciplinary approaches to locative media (Coleman 2012; Hemment 2006; Lapenta 2011a). Here, I mention literature on embodiment and mapping insofar as it offers broader commentary on the subjective nature of mapping practices and (thus) methodological insights on the limitations and potential of surveying and interviewing as appropriate methods for locative media research.



Insights arising from the new historiography of geography literature<sup>19</sup> include detailed reflections on the positionality of western/settler populations (explorers, colonialists) with respect to “indigenous” people in the “contact zones” of European exploration/colonization of non-western places (Pratt 2008, 7) that work to disaggregate the figure/trope of Enlightenment Man as a monolithic (and, therefore, unproblematic or irrelevant) and undifferentiated agent of west/non-west interface. More specifically, scholars such as Kay Anderson (2007) and Dorinda Outram (1999) draw attention to the practices by which claims to knowledge asserted, and categories such as “European” and “indigenous” defined relationally via embodied contact. Explorer/colonizer bodies perceived/measured phenomena; bodies traveled in the process of acquiring and transferring the information they had witnessed and produced; bodies suffered hardship and bore material traces of conquest (Livingstone and Withers 1999, 19).

Here, we can use a dialog between Mary Louise Pratt (1992) and Outram (1999) to show the ways in which subjectivity and the perceiving body were written into (or out of) European accounts of west-non-west encounter. This centers around a heuristic of vulnerability versus rationality – humble, innocent, inadequate, feeling subjects, versus omniscient, powerful, undifferentiated Enlightenment man. The idea of the body standing dichotomously opposed to the mind in Enlightenment though is well-rehearsed (for example: Longhurst 1997)The truth claims required of travelers’ sense impressions disrupt this (supposed) division of the “moral self” from the “perceiving self”: that is, the need to trust travelers’ sense impressions becomes increasingly important even as the

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<sup>19</sup> Some of the arguments about embodiment and subjectivity presented in this and the extended footnote that follows draw on a series of reaction papers I wrote for GEO 707

“discontinuity of the self”, the “threat [to] moral discipline” of engagement with the “dazzle and glitter” of the unfamiliar, is being recognized (Outram 1999, 183-5).

A key component of post-modernist critique of enlightenment claims to knowledge is the disruption of essentialist claims about truth and the neutrality of knowledge, and of seeing as knowing (Ibid.). This is premised on disrupting the (alleged) claim of enlightenment scholarship to be value neutral, produced (implicitly) by a detached, omniscient, objective traveler/scientist; the post-modern insight being that knowledge is socially produced, that seeing is not value-free, that (even) Enlightenment man was fallible, socially situated, and vulnerable. For Outram, however, it is only in the mythology of post-modernist critique (see Pratt 1992) that the claim – the myth – of disembodiment consists. For her, reflexivity and the problematic, subjective and embodied elements of knowledge acquisition and encounter were, in fact, acknowledged and grappled with *contemporaneously* and textual/documentary evidence of this exists.

By focusing on the embodied nature of the colonialist/cartographer, radical critique of the processes of exploration/colonization arguably loses its edge, humanizing the (still privileged, white, male) explorer into a metabolic mess of emotion and subjectivity and thus, potentially, offering him an ethical pass. Thus I wonder more generally if decoupling the embodied engagement of the scientist/explorer/cartographer from the practices and processes – the ideology – of colonization, empire and oppression, might actually place the reader, or for that matter the researcher, in an uneasy or ambivalent relation to processes of colonization and oppression. I think it is interesting, at least, to be aware of the kinds of arguments that such a poststructuralist approach (with which I am, clearly, I think, broadly sympathetic) to the nature of scientific knowledge could

conceivably validate. It also points towards one reason I am uncomfortable with more-than-representational theory's autoethnographic method as a means to making claims about landscape.

We are given, then, by Outram (1999) accounts of processes involved in the collection of geographical data in which the body – with all its vulnerabilities and weakness – was placed centrally in relation to knowledge acquisition. She explains how, for scientific travelers, technical instruments did not – were not presumed to – contain any inherent authoritative value above and beyond human senses which they were ‘extensions’ of rather than replacements for (1999, 288). The body is not, therefore, an inferior facility preventing the superior mind accessing actually existing data, but rather – like instrumentation – an imperfect tool for experimenting/engaging in the world. This rather general assertion is pinned down by Felix Driver and Luciana Martins (Driver and Martins 2002) who, rather than referring to a big name explorer – a (broadly) postmodern/poststructuralist objection in the historiography of geography is to its traditional great men focus – choose to analyze the private letters home of midshipman John Septimus Roe, the man responsible for producing field sketches for Humboldt's 1817 voyage.

The richly detailed, technical drawings and charts he produced can certainly be read as very definite knowledge claims, “attempts to secure a place in the world” (Driver and Martins 2002, 159). But they can also be viewed in a different way. Roe's private letters reveal his private agonizing over his deteriorating eyesight and the real, practical hardships of “disciplining” his body to the requirements of enlightenment scientific endeavor. His drawings are not simply scientific, therefore, or as neutral/detached as they

may – through particular readings of the official record – appear. Rather, they represent experiments in ways of seeing – contingent outcomes of the bodily capacities (and limitations) of one man – not entirely innocently perhaps – grappling with embodied vulnerabilities and personal hardship.

The critical, political potential of this querying of the scientific status of authoritative maps might not be immediately clear in the case of “dead” historical maps (see below), but as a methodological approach to interrogating the social nature of geographical knowledge in a digital era of crowd-sourcing, multiple authorship, and black-boxed software-sorting processes, the political moment is more obvious.

At one level, a poststructuralist approach such as Outram’s (1999), stressing (valorizing?) difference, contingency and discontinuity seems to be directed within the academy towards critiquing postmodernism’s Enlightenment-/straw-man premise. To that extent it is, of course, valuable to disaggregate and to explicate the social nature of the cartographer, or the State, or Google beyond a monolithic a monolithically bad, good (or whatever else) entity. A broader methodological/analytical danger, which I raise in the context of a poststructural commentary on the world cities literature (Boulton, Brunn, and Devriendt 2012), is a descent to relativism, whereby the complexity of the “situation” (the overdetermined, infinitely multiple social in Alain Badiou’s terms) paralyzes normative critique, or even claiming *something*, about the “state” (the social as it “appears”/is materialized) (cf. Badiou 2006). Ultimately, I would argue that in the context of locative media/landscape research it is important to give serious consideration to both strands of critique as characterized here (insofar as they represent distinct critical/methodological moments). First (per the “postmodern” moment) it is, I think,

necessary to recognize *that* there is a danger of (re)producing research uncritically and inadvertently about and for powerful actors and interests. It is, therefore, an obvious but vital first step to recognize the social and power-laden nature of mapping practices and to think through, methodologically what that might mean for research practice. At the most basic level it entails “peopling” the practices of map-making: whether that is achieved via, say, an institutional ethnography of a mapping corporation, or, as in the present case, examining the personal and differentiated practices and narratives of smartphone/computer users (neogeographers) as they map/make place.

Thus, however differentiated and problematic, “Google” and “enlightenment man” are situated as relatively “elite” and, therefore, privileged actors. In addition though, destabilizing the figure of apparently homogenous actors (a white man, Google) offers a means to “unveil” the power-laden and social nature of (scientific) knowledge production, and opens up the mapping subject as a more inclusive/broader categorization. John Pickles’ (Pickles 2004, 118–120) engagement with Pratt’s notion of transculturation is particularly suggestive in opening up a powerful “postmodern” moment of methodological significance here. Pratt (2008) points to the ways in which indigenous and tacit knowledges in/of the contact zone are represented, codified and embedded in the colonizers’ map. This is not a simple appropriation or theft. Neither is it a hopeful move in which the colonized world view is incorporated into, and subverts or becomes, the colonizer’s world view. Rather, in a double move (though we can think of it as an ongoing process) knowledge is not merely appropriated *from* the contact zone and codified/routinized in a straightforward way, but is transformed/hybridized and *used in* (against?) the contact zone.

More importantly: while the mean streets of Lexington do not really stand in for the colonized contact zones of eighteenth and nineteenth century Euro/American expansion, it is precisely the volunteered “indigenous” knowledge of geoweb participants, and unwitting Web contributors that forms the raw data from which the dominant/authoritative annotated base-map underpinning Google Maps and other platforms is derived. Likewise, the knowledge recorded by neighborhood survey participants becomes objectified – stripped of the subjective practices of its capture – in order to render it “*combinable*” (Latour 2011, 66, original emphasis) with other participants’ data for transmission in a format legible by state agencies, funding bodies, academic publisher and the like.

Again, the (speculatively) middle-class, technologically savvy Americans that make up my study group are not positioned equivalently with respect to cartographic discipline to the colonized minds (for want of a better expression) of the subjects of colonial discipline, or even of their concerned neighborhood counterparts in Seattle (Wilson 2011), but the point is to recognize the purchase of common, critical analytical approaches. That is, by carefully facilitating participants’ storytelling about their use of and experiences with the locative media applications used in this research we might develop a sense of how ordinary locative media users make use of digital annotations in forming perceptions of/ideas about a neighborhood. Furthermore, by recognizing the inherent interestingness of the stories themselves, and the observed/experienced practices of locative media usage, we emphasize that to map in Lexington, or the Humboldtian contact zone, entails subjective, embodied engagement with place. To the extent that we can capture empirically something of the complexity of the ways in which locative media

work as an affective discourse within landscape, analyzing the ways in which individuals use and talk about locative media will speaks to broader questions around the power of maps and thus the potential of lay mappers to mobilize emerging technologies in order to reconfigure and/or add new/alternative annotations.

I don't want to push the Google-as-colonizer metaphor too far, but there are certainly questions to be asked (and parallels to be drawn with transculturation) about the ways in which volunteered geographical information is appropriated from contributors/users, repackaged/combined/modified and used commercially. Indeed, a contemporaneous – or at least pre-Google Earth – critique of Al Gore's (in)famous “digital Earth” fantasy<sup>20</sup> notes the “imperialistic potential” (Parks 2002, 289) of a digital mapping platform predicated on a Gore's God's eye “magic carpet” vantage point. The imperial potential wrests in part on the particular visuality implicit in Gore's and Google's gaze (see Chapter 3), but also on the notion of appropriation, or the potential for appropriation, of lay knowledges in the construction of imperialist/corporate mappings. Parks' argument that “personal plots”, “digital diaries” and “homepages” ought to be included (Parks 2002, 289) in a putative, potential Digital Earth supposes that such additions might work

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<sup>20</sup> “I believe we need a Digital Earth. A multi-resolution, three-dimensional representation of the planet, into which we can embed vast quantities of geo-referenced data. Imagine, for example, a young child going to a Digital Earth exhibit... she sees Earth as it appears from space. [She] zooms in, using higher and higher levels of resolution, to see continents, then regions, countries, cities, and finally individual houses, trees, and other natural and man-made objects. Having found an area of the planet she is interested in exploring, she takes the equivalent of a “magic carpet ride” through a 3-D visualization of the terrain” (Gore, 1998)

unproblematically to negate the colonial/corporate impetus of an authoritative data-driven “information landscape” (281).

Such a perspective is, of course, problematic given that – as I have noted elsewhere – algorithmic/editorial intervention in popular/crowd-sourced content (to say nothing of the socio-economic contours of contributor communities) necessarily works to select and order speciously organic/popular contributions/data in particular kinds of ways for reasons of practicality as well as ideology. The notion, however, that crowd-sourced, lay, popular, amateur, etc. content necessarily stands as a counterpoint to the dominant, imperialist, biased (or whatever) representations of corporate representations holds considerable sway both in popular and scholarly discourse. Sarah Pink notes (Pink 2011, 11) that: “these two forms of production [the dominant official data and satellite imagery of the dominant Digital Earth and user-contributed information/stories] might be understood as pitched against each other and as creating dominant and resistant discourses”.

That “even” scholars of neogeography might accept at face value the rhetoric of democracy around crowd-sourced geospatial data – that a crowd-sourced data point is “resistant” (Pink 2011, 11), even as its visibility and mode of representation is determined by the dominant cartographic/representational discourse – gives pause to consider the ways in which ordinary users of locative media platforms think about engage with questions of authorship. This is an issue I look at in some detail in Chapter 6, though it is appropriate to mention here that there is substantial evidence to suggest that average consumers (if my participants are indeed average) of locative media approach the claims presented to them in/through authoritative mapping products with a degree of skepticism.



### *5.2.1.2 Feminist/critical GIS and neogeographical insights on mapping subjects*

It is a pretty standard (though no less important for that) critique of modern cartographic practice in general – up to and including present high-tech and GIS mapping practices – that the presumption/claim of cartographic representation is to truth and objectivity; the challenge for the cartographer being a technical one of how to display accurately and parsimoniously the appropriate data (Pavlovskaya and Martin 2007). However, prior to feminist and more generally critical accounts of the bias or the power of maps, in Harley's (1989) terms, what was lacking was *not* an appreciation of the social/subjective nature of map users/consumers. Audience perception has been and remains a central concern of map publishers (digital and otherwise) upon which the commercial and rhetorical success of their products wrests. A "psycho-cartographical" literature in the 1960s and 1970s (for example: Bartz Petchenik 1979) was concerned, very directly, with questions of audience perception, with visualizing phenomena in ways that were consistent with users' cognitive/spatial abilities. What *was* left largely unquestioned though was the suggestion that the map maker himself/herself – that cartographic practice – might bring particular biases or privileges to the table, or that the map reader/consumer might be other than an undifferentiated (white, male, etc.) seeing subject. The emergence of new, mass-production/consumption mapping modalities such as Google Maps raises an important series of questions about the potential proliferation of frequently-opaque exclusions and biases of new, democratic cartographic standards. As I have argued elsewhere:

Simply treating “Google” as a single entity and dismissing it as necessarily undemocratic is unhelpful. Rather, we need to look where we can for ways into the stinking bowels of the Beast. Given the pervasiveness of geoweb technologies and platforms, serious questions should be asked about what information and whose information is being embedded in the (becoming) standard and (largely) unquestioned base map that is Google Maps, and with what effects. One important component of this somewhat urgent project, then, is to question on empirical grounds the often messy behind-the-scenes of the crisp and visually pleasing products of these mapping projects .

(Boulton 2010)

The Map Maker project’s interactive community is a fascinating subset of the geoweb not least because it is such a raw and relatively transparent space in which to observe and participate in the very practices, deliberations, motives, personal/corporate projects of prestige/profit, et cetera, et cetera – the social – to which the geoweb is ultimately reducible. Understanding the Map Maker community in these ways allows us to say something about the ways in which a geoweb community operates. Examining the ways in which people come to assume particular subject positions in respect of their roles within that community begins to shed light on the processes – democratic or otherwise – that underpin these increasingly pervasive and authoritative cultural products.

Mindful of the utility of considering both the objects – the map products themselves, what they show, what they hide, the algorithmic and deliberative mechanisms of their production – and subjects of mapping, critical cartographic literatures suggest both the social nature of maps as a sedimentation/materialization of discourses, norms and social

relations, and the everyday, embodied and subjective practices of mapping/map use. In these literatures, the map object is not, of course, separable from the mapping subjects who produce and deploy its knowledges via ongoing processes. To lend some empirical specificity to this kind of theoretical claim, we can look quite concretely at the reported and observed “mapping” practices of my interview participants as they explored the neighborhood. In particular, the question of embodiment, mapping bodies/the mapping body manifested itself in the ways in which participants talked about their route selection in terms of dimensions such as excitement/interest in relation to particular locations, and particularly, in fear, pleasure or discomfort (chapter 7).

Thus, I suggest that a major contribution of feminist GIS/cartography to a potential critical, time/place specific and subjectively aware understanding of mapping practices in the context of locative media is to two-fold, and captured neatly in Marianna Pavlovskaya and Kevin St Martin’s description of feminist cartography: from a “missing object to a mapping subject” (2007). That is, feminist and critical cartographic practice over the past couple of decades entailed a fundamental rethinking of cartography both as a set of grounded (institutionalized and everyday) practices and as a particular (masculinist) epistemological claim to representation and truth. Thus, there is a recognition that women’s (and others’) experiences were/are systematically hidden, elided or ignored by standard cartographic practice. In the second, subjective, moment, relatively banal (but no less real) concerns about the “female” experience, and the presence/absence of “woman” within the discipline are superseded by a broader methodological/theoretical reformulation of and interest in who maps and what it means to map.

Together the critical/feminist cartographic critique entails several more-or-less foundational critiques of cartographic practice such as; i) most basically, the recognition of the absence of women, or their marginal status, in respect of institutionalized cartographic practice, GIS instruction and so forth; ii) a critique of the unexamined masculinist, God trick visual ideology (Haraway 1988, for example) of cartographic knowing; and iii) the countering of i) and ii) via either subverting or commandeering the tools of the powerful, as in public participation GIS, or by producing alternative cartographies/understandings of mapping. Thus, practicing cartography critically, attentive to the subjective nature of cartographic knowledge production and the texture and practiced nature of mapping (broadly defined) is not only a technical/professional practice (making alternative cartographies), but a critical/academic and lay impulse too.

The twin character of critical cartographic practice both as critique *and* as practice (qua producing and consuming maps) brings under the ambit of critical cartographic scholarship both formalized/institutionalized practices of map-making (although these are clearly important) and also the mundane everyday practices of map, or locative media, use. In the context of neogeographies, it is particularly useful to bring this dual lens, this “one-two punch” as Crampton and Krygier (Crampton and Krygier 2006, 12) describe it, to the study of neogeographic/cloud mapping exercises and platforms. The empirically grounded social-theoretical analysis (such as the landscape lens) of everyday mapping practices –such as locational searches, use of navigation technologies, contribution of spatial annotations and georeferenced photography, for example – is, arguably, as urgent as more obviously/radically critical projects of and creative experiments in locative media.

### 5.2.1.3 *Haptic bipedalism: moving narratives of landscape*

“The Tor is both seen and seeing; it is thus twice the centre of the landscape, and the revelation it offers is exactly this folding of vision and visible which opens to and constitutes the climber, this interweaving of the Tor and its environs which precedes any separation of figure and background”

(Wylie 2002, 445)

In proleptic/teleological accounts of the genealogy of landscape studies, a Sauerian phase of landscape studies (how landscapes are *made*), was succeeded by a textual/iconographic approach to landscape (how landscapes are *seen*), and is now being finessed by the cutting edge of landscape studies, under the ambit of more-than-representational theory, concerned with how landscape is “inhabited, traversed, and *felt*” (Sidaway 2009, 1092). As such, this more-than-representational theory literature is an important touchstone for any landscape study seeking to address subjective experience of/through landscape. It is also limited/limiting in significant ways. In this section I draw on my own long-held skepticism regarding more-than-representational theory’s value to cultural landscape studies, and animate my thoughts with reference to established (Latham 2003) and emerging – scathing in some cases (Van Dyke Forthcoming) – critiques.

Intended to capture (or to “enact”) something of the “processual registers of experience” (Dewsbury et al. 2002, 437), much of the broadly landscape-oriented, first person narrative work in a self-consciously non-representational/more-than-representational vein, stripped of its obfuscatory internal logic of justification (Dewsbury et al. 2002; Lorimer 2005; M. Rose 2002) has comprised poetic and eloquent accounts of white,

usually British, males' walks through wild and rugged landscapes: Glastonbury Tor (Wylie 2002), a rugged coastal path (Wylie 2005), and...another rugged coast path (Sidaway 2009).

My uneasiness with such performative writing is, perhaps, part of its purpose: that of unsettling the “representationalism” inherent in naively realist epistemologies to which non-representational-theory is so gallantly opposed (Sidaway 2009). Perhaps, also, the difficulty in pinning down and understanding – other than in its own terms and rhetorical logic – non-representational theory as a method is that it is “not a method in the traditional sense” (Dewsbury et al. 2002, 439). Rather, the resultant texts of our academic heroes' adventuring represents moments in “iterative and disseminative chains and processes; exemplary and differential, creative relays which may or may not resonate” (Ibid.). But since, in a foundational (as it were) statement, of more-than-representational theory's purpose, Derek McCormack (2005, 122) describes an approach that “valorises those processes that operate before ... conscious, reflective thought ... [and] second, it insists on the necessity of *not prioritizing representations as the primary epistemological vehicles* through which knowledge is extracted from the world” (my emphasis), there seems to be something of a dilemma, viz:

perhaps because of its interest in the artistic and philosophical avant-gardes, a great deal of writing on performance has adopted a remarkably dense, elliptical, highly stylised approach

(Latham 2003, 2008):

Thus, on the one hand, more-than-representational writing (a strangely contradictory concept in its own right) is about the pre-discursive, pre-linguistic (etc.) economy of affect. On the other, it involves highly skilled writers lavishly and self-consciously, reflexively, and pragmatically (correct format for publication) crafting scholarly works. To the extent that academics' writing about their emotions, experiences, hauntings and so forth can say something about emotion, experience, haunting and so forth more generally – emotions are not “our” emotions (to paraphrase Dewsbury et al. 2002, 439, “they are not mine”) – this is a worthy enterprise. I wonder, however, the extent to which my research participants, whose experiences in/of place may be rather different (and, honestly, of more interest) than mine, have the vocabulary, the time, the training and sufficient suspension of disbelief to produce such texts. My participants spoke of emotions (chapter 7) and myriad other embodied and tactile engagements with the map/space of the neighborhood, but rarely – that is to say, never – did they read, tautologically, Continental social theory from and then into their becoming-significant encounters with landscape (cf. Van Dyke Forthcoming). In a comprehensive rebuttal of more-than-representational theorists' – specifically Rose's (e.g. 2002) and Wylie's (e.g. 2005) – reductive and unsatisfying conceptualization of landscape, Chris Van Dyke deplores a reliance not on theory per se but on a particular stylized and ahistorical (mis)reading of fashionable theory, arguing that overburdening the landscape with philosophical significances masques a normalizing impulse wherein:

social [theory] is deployed as an external authority that validates what is said about landscape... What results is a straightforward reading of landscape [that] privileges the repetition and reworking of philosophical themes but suppresses the very material and experiential differences that animate landscape, and the historical

repetitions that are contained within it. It is as if Derrida, Deleuze, Marion and others are given voice through the landscape, while *the landscape itself* is silenced, again undermining the pluralistic commitments of non-representational theory

(Van Dyke Forthcoming emphasis added)

Here, I should venture that my depth of reading in continental social theory does not begin to match Van Dyke's, although perhaps his most salient critique is one that is readily graspable even from a position of fleeting acquaintance with the theorists' referenced above. Specifically, a Deleuzian conception of temporality in which, crudely, the copresence of past, present and future inhere (are immanent) in the actuality of the event (of perceiving/performing landscape) sits uneasily with the ahistorical bent of more-than-representational accounts in which landscape is "called forth" by an external observer (M. Rose 2002, 462) rather than actively produced. Landscape becomes an empty stage, a fixed backdrop, for the play of subjective engagement with generalizable philosophical introspection. And if, as Rose argues (2002, 470), "Derrida's future is...something we wait for", there is a distinct passivity with respect to the historic practices, traces, memories (etc.) that constitute the present/presence of landscape, whether these are the far-from-passive material interjections of our predecessors, or the traces of past experience memorialized in locative annotations, photographs and individual memory. More-than-representational theory has little to say about the significance of such traces, such layerings, such accretions of materialized discourse which merely *are* as resources for experience.



In a more famous example from this genre Wylie (2002) describes his ascent of Glastonbury Tor, an ancient and evocative site teeming with history and mythology, and seeks to draw out “their [history’s and mythology’s] emergence and resonance within the sensuous, embodied context” (Wylie 2002, 443). His account is a composite journey based on several walks on the Tor, and a deeply reflexive account of immersion in the embodied experience of the journey. It is also, I would suggest, quite a privileged engagement with landscape – the ability to engage the “epiphany, a leave-taking” (Ibid.) is one contingent on (at least) able-bodiedness, automobile transportation, available leisure time, reading in apposite literatures and so forth. Insofar as these (or other) social relations figure in the account, the other ascenders – though more likely tourists than deep social theoretical thinkers – are fellow travelers: “*Between* us”, he writes, “in the sociability of our contemplations, the landscape surfaces as a style” (2002, 452). Lacking here, and as feminist critics (see, for example Sharp 2009) have suggested in relation to the masculinist basis of more-than-representational theory more generally, is a sense of the contributions and intersections of others extant – present and absent – on whom this experience/landscape relies.

Where more-than-representational theory complements self-described poststructural landscape theory – the general approach of the present study (and the tenor of works by scholars such as Richard Schein and Nancy and James Duncan) – is in raising questions about *how* landscape works, not only *that* it works. However, according to the more-than-representational critique: where mainstream cultural geographers have in many cases rejected structuralism in terms of (first) a Sauerian superorganic cultural explanation, and (then) in terms of an ideological dominance/imposition model, there has not, Mitch Rose

(2002) argues, been a concomitant rejection of structure per se. In this (poststructural landscape) body of literature, the creativity of individuals in enacting landscape, he argues, has been one of re-defining rather than defining: “interpretative social agents” who are nevertheless confined (by “forces of limitation and control, rather than those of interpretation and resistance”) to resist or reinforce within strictly circumscribed boundaries, rather than to define “what culture or the cultural landscape *is*” (2002, 459). Explanation (of root causes and definitions of the fields of possibly within which landscapes are lived) is deferred, but not ruled out, as an analytical goal. Though there is always struggle over meaning, while practice is significant it “is conceived in terms of particular operations with limited ends” (Bataille 2007, 23 quoted in Rose 2002), as a response to landscape which, although a product of practice, is always already there as a disciplinary apparatus inscribing (restricted) practice (Rose 2002).

As a thought experiment in the limits of practice – or of the outer limits of the “post” in post-structural landscape theory – the Rose critique is pertinent. However, insofar as cultural landscape studies remains tied to some notion of structuring forces, those forces represent a cacophony (Schein 2010) of discourses in combination with practice never reducible either to a simple root cause *or* to infinite fluidity and open becoming. Even in his own suggestive metaphor of pyramids and plateaus/labyrinths, Rose (2002) identifies moments – whether ideological, material, performative, etc. – of apparent fixity and stasis (pyramids) on the plane of radically open-ended, affective fluidity (the plateau). Such an approach is largely consistent with a “new cultural geography” (Rose notes: Daniels 2001; Cosgrove 1998) and subsequent work concerned with the potential for resistant practices within existing structures even as they query *how* cultural landscapes are

claimed and built (materially and discursively) as social and material pyramids that do real work.

Dramaturgical analogies have a strong tradition in cultural landscape studies (Hugill 1975), by far predating the emergence of the current more-than-representational strand of landscape research . Peter Hugill (1975), for example, refers to social “conduct” as an important dimension of the cultural landscape of an English seaside town. Consistent with a landscape-as-discourse-materialized approach (Schein 1997), Hugill shows that past actions, past conduct, leave a material imprint both on the built environment and in terms of those normative judgments about in place/out of place behaviors “purely social in nature” (1975, 215). This insight resonates with the notion of the performativity of locative media (Lapenta 2011a; Pink 2011) wherein layers of experience and significance permeate digiplace (and thus cultural landscapes) in ways that have no explicit material form, even as fleeting actions – reviewing, tagging, Tweeting – are potentially concretized and given relative permanence through time.

Though the relatively static built environment – or for that matter its economic, social and cultural geneses – may not instantaneously be amenable to transformation through practice, Hugill nevertheless suggests that different individuals and factions draw on or resist particular normative behaviors in respect of appropriate versus “gregarious” (or otherwise transgressive) conduct: gambling, “picking up birds” and the like (1975, 225). Although destabilization of material and social orders of place is possible, led by “changes in social style” (1975, 228), the landscape, for Hugill, remains relatively inert at the scale of individual human life expectancy (let alone in terms of individual events or other momentary enactments). As Schein (2009) argues in the context of counter-

hegemonic identity politics, land and landscape, form the “practical stage” upon which transformational politics may be “eked out of daily existence”, even as that practical stage is one built upon a more-or-less solid foundation of dominant social/economic and cultural practice (Schein 2009, 811).

The emphasis on how, at a practical lived/felt level, landscape works, articulated by Rose and implicit in numerous works on the enaction of landscape, is methodologically large, of course, but not inconsistent, I think, with the present approach. I think of landscape as a fundamentally social phenomenon: pyramidal constructs of graspability invented from a reality of infinite labyrinthine ungraspability, along with their physical impresses, have material and social consequences (Hollier 1989, 57–73). Cultivation, nurture and invention (M. Rose 2002, 461) of something graspable, something claimable, are as important to the “empty and peripheral forms” of everyday practices of identity, aesthetics, community, and politics (including oppositional identities) as to the imperial facades of social, political and material “monuments and monumental vistas” (Bataille 2007, 214). When Kenwick residents talked to me about parts of the neighborhood, physical characteristics such as poorly maintained yards or shabby paintwork and individuals’ actions that seemed incorrect or out of place, they drew not only on their immediate sensual reaction to the built environment but on an historically constituted socio-discursive framework in which particular reiterative practices – of care, of cleanliness, of property, of aesthetics – have produced, and ought to reproduce, a normatively favored landscape. It is these everyday practices and everyday understandings of landscape that poststructural landscape studies are (increasingly) interested in, and to which this study is directed.

Schein's (2009) notion of a "practical stage" is important here, because it suggests a complex appreciation of the relationship between place and knowledge. Kant's famous phrase about the Earth's surface constituting a "stage on which the play of our skills proceeds...the ground on which our knowledge is acquired and applied" (Kant 1970, 257) summarizes a familiar if problematic metaphor implying a separation between a material substrate and social life. The material landscape is both a resource for and product of everyday practice, not a given, innocent surface nor, contrary to more simplistic Marxian readings, a monolithic product of power, of labor. Echoing Schein, Tim Ingold, in his numerous works on walking practices (for example: Ingold 2000; Ingold 2009; Ingold 2010; Ingold 2011), suggests that the relationship between knowledge – or becoming-knowledgeable (Ingold 2010) – and being-in-place is intrinsic. More specifically, Ingold (2010) emphasizes the importance of movement and dwelling as fundamental practices of knowledge creation. Addressing the turn to embodiment in anthropology, analogous to and overlapping with the growth of affect in geography, Ingold suggests a deeper understanding of an embodied, ambulatory experience of place's materiality that treats place not as a more-or-less smooth or jarring, familiar or exotic, surface with which the mindful body occasionally collides, but as more fundamentally internalized: the materialities of landscape as inseparable "regions of the body's very existence" (Ingold 2010, 122).

Although potentially critiqued for its alleged Heideggerean romanticization of the naturalness and at-oneness of insiders and their landscapes (Cloke and Jones 2001), Ingold's commitment to the notion that subjects and landscapes, minds and the ground, are mutually constitutive is, I would suggest, consistent with a more radical

understanding of the variegated ways in which places are enacted and envisioned (and thus claimed and potentially transformed). Minimally, it points to the importance of considering the importance of individuals' emotional responses – including enjoyment – to the visual and material qualities of place. As Heidi Nast and Mabel Wilson's (1994) work on public housing in Lexington would tend to support, experiences of pleasure (or fear, for example) through landscape are not the preserve of any particular privileged group. In Daniels' words, it is precisely the ability of landscape to confer pleasure, awe, etc. in which its duplicity inheres; its "redemptive and manipulative aspects cannot finally be disentangled", he writes (Daniels 2001, 206), as he suggests that an acknowledgment of the ideological bases of landscape is not substitute for recognizing the ways in which other vectors – imagination, discourse, emotion – work in/through landscape.

### **5.3 Surveying, interviewing and the place of the mapping subject**

[the placemark<sup>21</sup>] constitutes a sight as a sight: by giving information about it, representing it, making it recognisable... The existence of reproductions is what makes something an original, authentic, the real thing [and] by surrounding ourselves with the reproductions we represent to ourselves [the] possibility of authentic experiences in other times and in other places.

(Culler 1981, 5)

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<sup>21</sup> Jonathan Culler's original article refers to the role of the marker in tourist landscapes. For Culler, the marker is a broad category encompassing "any kind of information or representation that constitutes a sight as a sight: by giving information about it, representing it, making it recognizable" (p. 5).

In this section, I build on and extend the foregoing discussion to more concretely specify some of the ways in which some of these methodological challenges and opportunities played out in the conduct of the present research project.

In the interviews that form the basis of the Street-Based component of this project the same kinds of methodological leaps of faith that read subjectivity, angst and discontinuity from/into cartographic practices of Enlightenment explorers and their mappings are not required, though I would argue that the reading/analytical strategies, if not the raw materials – interview transcripts and field notes versus popular/scientific monographs and travelogues – are commensurable. If we take as a relatively uncontroversial starting point that representations of place, narratives – whether travel writing or accounts of neighborhood exploration – are necessarily partial and situated, the point of comparison between them is not to judge accuracy, relative merit, truth (or similar). Rather, I am interested in the ways in which narratives are produced, how references to locative annotations are or are not combined with other discourses/sources of information, and how people frame their responses to the landscape.

Following Norman Fairclough's modest claims about the data produced via his critical discourse analysis (CDA) methodology – an insistence on rigor *of method* and reproducibility *of method*, rather than any necessary positivist assertion of authority as in reproducibility of findings (see: Fairclough 1995; Fairclough 2001) – I reiterate (Fairclough's arguments about) the need for strong evidentiary and argumentative bases for our discourse analyses, buttressed by an acknowledgment of the positionality of the researcher as situated socially and in relation to texts, selected methods and analytical frames.

In parallel with historiographical literatures (section 5.2.1.1), critical cartography literatures stress in similar and various ways the contingent, incomplete nature of maps (and, increasingly in the Web 2.0 era, of map objects/products themselves). Drawing on performativity literatures (for example: Butler 1996; see: Nash 2000), and more generally on poststructural/deconstructionist approaches to texts (Deleuze and Guattari 1983), Del Casino and Hanna (2006) problematize the (implicit) assumption, in earlier critical work, that maps are effectively fixed either as products of and/or productive of particular social relations. In other words, in this poststructural moment, maps become mobile subjects with multiple and indeterminate “entryways” (Deleuze and Guattari 1983, 12) and thus multiple and indeterminate potentialities for their integration and (re)combination with other texts, contexts and performances.

More prosaically, the breaking down of the production/consumption binary – maps are never complete, they are always already representations and performances (Del Casino and Hanna 2006) – calls for greater attention to be paid to the ways in which maps are used and understood and tied up with mapping practices. In the most basic sense, this entails treating “map” and “space” as verbs (cf. Dewsbury et al. 2002), as “becoming” together. Practically, this orientation resonates with the numerous occasions on which participants, both in the online survey exercise and the semi-structured interview component, made no distinction between first hand perceptions of place and those derived from representations embedded in maps provided. Rather, their mappings of the neighborhood, the ways in which they re-presented and described their explorations, built upon existing representations of the neighborhood and their first hand experiences as well as myriad other preferences and dispositions towards particular kinds of place. The



following exchange with one of my interview participants illustrates particularly clearly the ways in which map and space work together to produce new maps and news spaces not reducible either to representation or observation:

AB: So what was your favorite thing about the neighborhood that you saw. What would you pick out? Is there something...

Mike: ...the brass band

AB: the brass band?

Mike: Yeah, they have a brass band...

AB: ...where?

Mike: First thing I wanted to see. In the front yard, over there.

AB: Oh, in the placemark?... [referring to one of the placemarks, pictured below, provided to subsets of participants in both the online and face-to-face components]

Mike: ...the yellow house, yeah. The sign said refreshments but I saw the brass band playing.

AB: Right.

Mike. I thought that was pretty neat. They allow brass bands which makes it a good neighborhood to my mind [laughter]

In this conversation, for example, a map annotation – a fixed placemark representing a past event (the previous year’s Neighborhood Tour) – is used by Mike as, first of all, a means to navigate to a particular location (“first thing I wanted to see”), and thereafter to infer neighborhood qualities that physical presence alone could not convey. Finding the “yellow house” – as pictured the house is more an off-white than the newly-painted

yellow Mike found in real life – consistent with the brass band scene, he then incorporates cues from the codified map itself and his own embodied engagement with the landscape with his previous predisposition towards live music (he goes on to describe the scene as reminiscent of the Woodland Arts Fair, of which he approves) in creating his own map of Kenwick as a brass band-friendly and “artistic” space.

The always incomplete character of mappings – in this case a series of annotations embedded within an Augmented Reality application – and their performances points towards the processual, subjective nature of representations of place more generally. Rather than deterministically producing particular experiences of place, critical cartographers draw attention to the ways in which maps are combined and recombined into new mappings through their very deployment. Far from being complete, then, maps are produced anew through the very processes of their use or performance: placemarks, user reviews, shared photographs, check-ins and previous visitors’ “tips” work, in Culler’s (1981, 5) words, as entrees to “authentic experiences in other times and in other places”.

### **5.3.1 Research participants**

The issue of technological competence – pre-existing experience with the device/software – is a primary criterion for participant selection. This question is always lurking in, if not explicitly addressed by, those so-called location-based services (LBS) research involving electronically-mediated navigation/walking experiments and/or interactive exhibits in gallery and museum contexts. In the context of research and development of an interactive system for a San Francisco museum, Fleck et al. (2002) report on the complexity of their interactive application and (thus) the need to provide some brief

“hands-on” training to the 35 participants in their study (never mind that many of the participants were ICT teachers and ICT professionals!). Partly this need for training was a product of the clunky and unfamiliar technology deployed via a now-archaic stylus-controlled portable digital assistant (PDA) device. The use of Google Maps, via a cell phone familiar to the user, is a qualitatively different situation from the usage of an unfamiliar device and complex proprietary software.

However, it was important that the screening process for potential participants should identify individuals with solid, existing knowledge of and experience with the basic technology to be used (that is, a smartphone device, such as an Android or iPhone, capable of running the Layar application used to deliver annotations). That is, it is fairly obvious that an individual encountering a device/technology (such as Google Maps/Layar on a smartphone) for the first time is likely to be so “distracted” by operating the device as to focus on it to the exclusion of the broader environment (Yiannoutsou et al. 2009; Ishikawa, Murasawa, and Okabe 2009). Given the near ubiquity of smartphone devices in the young adult population targeted, the challenges of finding suitably qualified participants was ameliorated relative to those (likely) facing studies utilizing less familiar technology platforms.

Interview participants, upon initial contact (typically by email) were asked to install the Layar application on their personal devices and to become familiar (if they were not already) with the user interface. However, in all cases, I gave a brief more-or-less detailed refresher on the operation of the application, demonstrating the availability of: a list of placemarks; a Google Map identifying placemarks, and the live camera view showing placemarks overlaying the live image. In the case of Remote-Based participants,

a survey question asked for users' self-reported level of experience/competence with these technologies, and their successful completion of the tasks provided further evidence of sufficient familiarity.

But the implication of this requirement for technical competence (and/or pre-fieldwork training) is fairly clear: it might be expected that, in the case of a study aiming for some kind of statistical representativeness, qualified (i.e. smartphone-equipped) users/participants might be systematically different (in terms of standard socio-economic criteria) in some significant ways from those excluded from consideration. Even when statistical significance and generalizability are not claimed – as in the more case-study/individual narratives produced by the street-interview exercises – I recognize that the experiences I document are, necessarily, those of a relatively small, and certainly not representative, subset of a broader landscape-perceiving population.

I would respond to this generalizability “deficiency” with two linked arguments. First, my aim/pretense is not to say something about experiences of locative media users in general, or even to create a full account of these individuals' experiences. Rather, I am interested in the narrative strategies and individuals' self-understandings of their experiences and practices in respect of the locative media usage. And, second, a meta-point is that my research aims to develop and test/exemplify a methodology, and a set of specific methods, for apprehending the role of locative media in landscape studies, rather than to produce an exhaustive account (not that one would be possible) of how locatively mediated landscape always, everywhere and for everyone works. That is not to say that the empirical findings are uninteresting (in a large number of potential, even unanticipated ways) in and of themselves, only that my major intervention is intended to

be methodological: that interviewing (and, separately, surveying in the context of the Remote-Based exercise) methods can effectively be used to shed light on practices of/with locative media in the context of cultural landscape work. Thus, although I would repeat Doreen Massey's (1991) parallel argument that the story of a high-tech, time/space-compressed world of electronic-mediation is, to some extent, the story of middle-class academics and others of particular socio-economic status, I would also emphasize a broader social justification here. That is, to recognize that emerging locative media technologies are interesting (in part) because of i) their increasing ubiquity and the fact that they are and will continue to be used in ways that modify in important ways what it is to dwell and navigate the street for increasing numbers of people, and ii) the fact that the methodologies and critical vocabulary developed now may provide a useful counterpoint to emerging industry-driven commonsense about the unproblematic goodness of location-aware media (and, for example, what constitutes reasonable expectations of privacy).

My primary recruitment method was online email lists and, specifically, the class lists of university courses which I had either taught or assisted in teaching over the previous three years. The recruitment email further urged recipients to pass along the request to other qualified individuals. Since there is no technological way to track the extent to which participation requests were redistributed, I can only estimate a response rate of close to (a relatively high) 20 per cent. Indeed, the survey question asking where each individual had heard about the experiment yielded zero "from a friend" answers, and only two "other" selections. From each class list, I selected approximately one third of the names at random to receive the Street-Based interview request. Unsurprisingly, the

response rate was dramatically lower (given the relatively onerous task being requested). Indeed, several individuals recruited online expressed a willingness to participate only to reschedule and ultimately cancel owing to time commitments related to work, family, etc. As such, participation in the interview exercise entailed a level of interest and an investment of time/effort above and beyond that required of the survey participants. Four of my interview participants were recruited directly via referral from earlier participants to whom I stressed the need not to speak other than in general terms (per the recruitment email) about the specifics of the exercise. Ultimately, the level of interest necessary to commit the required time and effort to participate led to engaged and motivated participant groups in both categories. The Google Analytics tracking code applied to the online surveys suggested that the typical survey respondent spent 43 minutes from the beginning to the end of the exercise. For the predominantly student population of participants, such lengthy online exploration is increasingly the norm. Although numbers are hard to gauge – and, we can assume, more fleeting engagements with Street View and Google Maps (scoping out a restaurant/venue, browsing a newsworthy landmark, for example) – Street View-based virtual tours are a major growth industry, especially within higher education, with the advent of pedestrian campus tours created through Google’s Partner Program.

**Table 5.1.** Basic demographic description of participants

	<b>Street-Based participants</b>	<b>Remote-Based participants</b>
Male/female	40%/60%	47%/53%
Median age (range)	25 (22-30)	24 (19-30)

### **5.3.2 Negotiating difference, asking about difference**

The basic demographic information collected on the online survey asked for categorical responses to questions of: age, sex, familiarity with relevant software platforms/interfaces, and existing familiarity with the neighborhood. Simply documenting these potential analytically important dimensions of difference within a study population does not, alone, constitute a methodology that takes difference seriously. To the contrary, as Linda McDowell (2001) points out, it is important to recognize that defining categories pre-emptively within a research design, however well-intentioned, has the potential to foreclose further critical analysis of those normative categorizations. Having said that, consideration of positionality both of research subjects and researcher necessarily requires reference to those very problematic categories that, ultimately, critical scholarship might wish to dismantle (see: Nagar and Geiger 2007). Without being overly glib, therefore, there might be a strategic essentialism argument – if used sensitively – precisely for disaggregating analyses along categorical socio/cultural/economic axes if

doing so enables us to make, more forcefully, arguments about the differential access to and experience of locative media technologies and landscape. As I suggest (with caveats) there are important gendered dimensions to the experience of locative media that emerged from the present research project (chapter 7.2), although further explicitly gender-focused work in this area is needed.

McLafferty (1995) argues that, for feminist geographers, quantification of women's experiences can be a useful practice within a feminist research methodology; that is, even recognizing the "imperfect" nature of categorization, it can be socially and politically useful to maintain some sense that the shared experiences within the category of Women, for a politically feminist project at least, must overwhelm the differences between women (437). Thus, although innumerable works in women's studies, geography and throughout the academy point out the highly complex, performative, and socially-constructed character of something as speciously straightforward (in the popular consciousness) as gender, there might still be an argument for examining the difference that gender makes (ignoring, however painfully, the problematic of gender/sex conflation for the purposes of categorical simplicity) in a binary sense. For example, as Jessica Sewell (2003) points out, "even" city streets that are not explicitly gendered places – by which, she takes to mean there are no material barriers to female-versus-male access, or there is no overt coding as in the case of, in her examples, football stadia or knitting stores – are experienced very differently by gendered bodies, as places of comfort, fear, sexualization and so forth on the basis of normative discourses around gendered expectations about particular types of space. While the survey data did not yield significant gendered differences on substantive neighborhood perception questions – perhaps a function of the



universally (masculine) remote gaze of the online participants – there was a significant difference between males and females in terms of reported experience/aptitude with digital mapping technologies. The substantially higher proportion of males reporting “excellent” knowledge of Google Maps/Street View is consistent with the more general of pattern of a male-dominated usage of locative media technologies – an imbalance that is even starker in terms of participation in the production of user-generated geospatial data (M. Graham 2011a)<sup>22</sup>. While all participants reported being familiar with the Google Maps/Street view products – a prerequisite for inclusion in this study – 80 per cent of males, compared to only 62 per cent of females claimed to “very familiar” (rather than merely “somewhat familiar”) with these technologies. By contrast, there was no significant difference between the number of males (96%) and females (92%) claiming to be “very familiar” with “the Internet/Web browsing in general”.

**Table 5.2.** Reported level of familiarity with online products among all study participants

	Male participants	Female participants
<b>Technology</b>	<b>Familiar % (very)</b>	<b>Familiar % (very)</b>
Web browser	100 (96)	100 (92)
Google Maps including Street View	100 (80*)	100 (62)

\*statistically significant difference (p<0.1)

The Street-Based component of the research, owing to the nature of the semi-structured qualitative follow-up interviews, offers some further insights into the difference that

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<sup>22</sup> Alternatively, in the present study, males may simply have been less modest in describing their (alleged) technical competence.

gender might make (arguably in a more nuanced way), even as, in this case, I recognize the additional researcher/researched dynamics that come into play in the case of face-to-face interviews (see section 6.4). A particularly interesting finding from both the online exercise and, in particular, the street-based exercise was the frequency with which issues of “safety” were raised, and particularly participants’ perception of fear or discomfort in relation to particular parts of the neighborhood. From a purely quantitative perspective 60% of the 18 online participants raising questions of safety were female, which is not a statistically significant finding within a sample of this size.

Issues around gender should, of course, fruitfully be taken on in future studies of locative media, but here we may acknowledge at least superficially the potential critique of the colonialist/masculinist orientation implicit in a locatively mediated derive through city streets: the Street-Based exercise referred to here (see Matthews et al. 2000 on the gendered problematic of the flâneuse in the context of an English mall). On one level, we can suggest that it is from a particular, privileged position that strolling, at ease, through the city is a pleasurable (or even possible) pastime. This critique is legitimate, of course, but I would counter that even the relatively privileged participants in this exercise found themselves grappling with real, embodied and emotional interactions that belie such a sense of imperial comfort. The “fear”, or even mere unease, reported by one male interviewee of “holding out the phone like that [viewing the augmented reality application], asking for some, well, you know, someone to take it” (Jake, 30) was real, and resonated with several participants’ responses to the exercise – whether verbalized or implicit in their interaction with the neighborhood. Chapter 7, for example, points out that while participants might not always have expressed fear explicitly and verbally with

respect to their walking through parts of the neighborhood, the routes they took as illustrated by their GPS traces might offer a further source of data about users' perceptions of particular locations.<sup>23</sup>

Thus, while, the interviewing field can never be leveled, while my interactions with participants are necessarily social – gendered, raced and so forth – I would argue that there are, as I have suggested already, and argue below, strategies that can be deployed to increase a sense of mutuality and comfort between differentially situated researcher and researched (for example: McDowell 2009 chapter 8; Kvale 2006). Both the interviewees and online participants were asked basic demographic questions. I have already suggested some of the ways in which these axes of difference might be problematic, but they also represent – especially since they rely on individuals' claimed/asserted identities – potentially important data points around an acknowledgment that interactions with and experiences of locatively mediated place (qua landscape) are deeply personal, subjective and socially situated.

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<sup>23</sup> In future, research in the vain should ensure that GPS traces are captured with an accurate time stamp such that the speed of travel between intervals may be recorded. With data logging every 5 minutes, the traces obtained in this study were sufficient to reconstruct direction but not instantaneous speed of travel.

## Google Street View in Lexington, KY

Thank you for agreeing to take part in this survey about Google Street View in Lexington, KY.

The results of this survey will help us to understand the ways in which college students at UK use new mapping technologies.

The overall task should take around 30 minutes:

No personally-identifiable data will be stored; this survey is entirely anonymous.

How would you describe your gender?

- Male
- Female
- No answer
- Other:

How old are you?

### Google Maps and StreetView

How would you describe your level of familiarity with

	Very familiar	Somewhat familiar	Unfamiliar	Never used
Google Maps?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Google StreetView?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Figure 5.1.** Demographic/difference data in survey and interviews

### 5.4 Defining “architectural quality” and “amenity value”

Participants in both the Remote Interface and Street-Based exercises were allocated a set of annotations related to the architectural quality of the neighborhood *or* to its amenity value. In this section, I outline the rationale and working definition of these two

categories with reference to literatures extant. First, Tables 1 and 2, summarize the allocation of participants between the various groups.

**Table 5.3.** Three subgroups for the online survey exercise

All online (Remote-Based) participants (150)				
Absent digiplace (Group 1 44)	Present digiplace			
	Annotations architectural characteristics (Group 2 57)	stress quality	Annotations amenity characteristics (Group 3 49)	stress value
	Comparison: architecture/amenity			
Analysis: presence/absence				

**Table 5.4.** two subgroups for the street/interview-based exercise

All offline, Street-Based participants (20)				
Annotations quality characteristics (10)	stress architectural	Annotations stress amenity value characteristics (10)		

Although I elected to produce sets of placemarks stressing architectural and amenity qualities (respectively) of the neighborhood, rather than arguably even more problematic normative categories such as “positive” versus “negative”, “safe” versus “unsafe”, “wealthy” versus “deprived” categories, this raised its own set of methodological

problems of categorization. While it would be possible to borrow the categories used in a particular neighborhood evaluation survey to define, for example, “good urban design”, “environmental quality”, or “socio-economic diversity”, such normative, quantitatively driven indices are not particularly amenable – given their geneses, narrow foci and the types of analytical strategies they entail – to incorporation in a more expansive (and in the case of the interviews at least) qualitative framework. Yi-fu Tuan’s classic work on environmental perception/attitudes or “topophilia” (1990) presents a genealogy of attitudes to nature/culture in the western geographical imagination, but explicitly does not set out to provide a methodological framework, let alone specific methods for empirical studies of perception. Rather, Tuan argues that “crucial [problems in perception of place] often escape us because we lack sophisticated concepts to frame them”, rather than lacking research methods per se (1990, 3) Tuan draws a distinction between the (overlapping) concepts of “perception” and “attitude”, the former referring to less self-conscious, even biological sensory responses, the latter to “primarily a cultural response” (Ibid.) – which, although arguably overly binaristic, nevertheless captures well the tension identified in recent works on aesthetics (Schein 2003; Duncan and Duncan 2004; Boulton 2011) between normative, popular cultural understandings of place, and the reiterative/performative practices of everyday life underpinned by a sensory response to the materiality of places.

Analytically, then, a focus on understandings and attitudes (rather than perceptions and responses per se) points towards the necessity of treating my data not as a raw, transparent reflection of how people “really feel”, but as a self-representation (rationalization/narrativization) embedded in broader social/discursive contexts. Such a

stance leads to analytically more nuanced and modest claims about what I am able to demonstrate empirically, but its implications are more importantly directed towards the type of discourse analysis reading/analysis practices deployed, rather than towards survey/question formulation per se.

Thus, there is no obvious literature to turn to for a how-to guide in terms of operationalizing concepts of architecture/amenity. There are, however, clues we can harvest from disparate literatures in landscape architecture and public health that seek to identify and then to operationalize measures of perceived landscape quality and amenity value. In tandem with broader debates in geography and the social sciences, a debate in the landscape planning literature raged in the 1970s and '80s as to the appropriate methods, quantitative or qualitative, by which to measure architectural significance and aesthetic quality. It is these literatures that form the basis of my formal codes developed in the remainder of this chapter. In a back and forth between Robert Ribe (1982) and AA Carlson (1977), the latter argues for the integration of qualitative measures of landscape quality, while the former insists on the quantitative rigor of statistically valid samples. At stake, though, was not the kind of anti-modernist, socially situated notion of landscape aesthetics familiar in geography today, but rather a formalist approach to aesthetics/landscape appreciation (equivalent to art appreciation) in which the views of experts – “environmental critics” in Carlson’s terms – would be weighed more heavily than lay people’s mere “reactions” to scenic beauty (Carlson 1977).

The first thing to note in the context of survey design is that Likert scales are a favorite/standard means of rating dimensions of neighborhood quality. For example,

Kylie Ball and colleagues (2001) ask in their telephone survey on walking practices of some 3,392 households in New South Wales, Australia:

To what extent do you agree or disagree with each of the following about walking in your neighborhood?

Their operational variables related to neighborhood “convenience” and “aesthetics” then coincide rather well with a normative specification of “amenity” and “architectural” quality as used in my study, and thus provided a useful basis for structuring and specifying survey questions that sought to measure the extent to which users noticed/appreciated those amenity-type characteristics described in spatial annotations relative to architecture-themed annotations.

They identify as “convenience” variables:

“Shops are in walking distance”  
“A park or beach is in walking distance”  
“A cycle path is accessible”

and as “aesthetic” variables:

“Your neighborhood is friendly”  
“Your local area is attractive”  
“You find it pleasant walking near your home”



A few caveats apply however. Even as I recognize the necessity to operationalize concepts of architectural quality and amenity value, there is a certain “leap of faith” or suspension of disbelief involved in seeking to attribute numerical scales and categorical certainty to something as diffuse, complex and ungraspable as landscape appreciation. The analysis of these data was particularly daunting, and in some ways frustrating. One person’s strong agreement is another person’s restrained neutrality. A handful of users were “neutral” towards (and/or chose not to answer) swathes of questions. At the same time, though, by eschewing large-n studies and standardized measures of landscape attitudes we run the risk of simply affirming an expert-model of landscape writing/appreciation where the only views on/of landscape of critical scholarly interest are those of trained landscape architects, scholars and other expert commentators. There is clearly a place for such expert histories of landscape, accounts of landscape change, and so forth. But in a case such as this, where it is precisely the *mass*-cartography moment that is of central social interest, I would argue that theorization of the imbrications of locative media and landscape can proceed from numerous empirical start points simultaneously, and must take seriously the lay/popular engagement with such technologies/spaces. Hence my use of methods designed to capture subjective understanding of locatively mediated landscape at, for want of a better expression, two different levels of resolution: what realists might describe as “extensive” versus “intensive” research for which surveys and in-depth interviews respectively are well suited (for example: Sayer 2000, 20).

It was important to me, therefore, that the responses of my survey participants were weighted appropriately along with the interviewees’ responses. There is, as I have

described, an element of non-randomness, of self-selection, both to the interview “sample” and the survey population, but the time commitment and nature of the face-to-face engagement involved in the former was a particularly significant factor in determining those who were able to participate.

#### **5.4.1 Neighborhood evaluation: defining the neighborhood**

There is an established literature on “neighborhood evaluation” (Talen and Shah 2007). Neighborhood evaluation is, conceivably, a very broad category that might reasonably encompass a range of concerns from visual quality (Zube 1984) and the aesthetic (Duncan and Duncan 2004; Boulton 2011) to more functional accounts of neighborhood services, the politics of neighborhood organizations, and the mapping of crime and environmental degradation (Wilson 2011), but is taken by Emily Talen and Swasti Shah (2007) to refer to *resident views* of their neighborhoods. Thus, the very definition of the neighborhood is a major methodological/theoretical concern that has been grappled with by geographers, sociologists and others for many years. That is, depending on the intended purpose of a neighborhood evaluation survey, the delineation of a neighborhood may coincide more-or-less exactly with administrative boundaries, socio-economic divisions, proximity measures – what Burgess and Chicago-school sociologists described as “natural areas” of cultural/ethnic identification – or, in the case of more interpretivist studies aiming to understand individuals’/communities’ sense of place, open-ended: i.e. to be discussed/determined as part of the research design.

For my purposes, the delineation of the neighborhood as an object of research is of subsidiary importance to specifying a plausible methodology by which to explore engagement with landscape as mediated by locative media more generally. That is, I am

only interested in “Kenwick” insofar as this particular location comprises a practical and plausible place in which to address a research question targeted more towards potentially generalizable methodology/theoretical framework-building. In my previous work on the entanglements of aesthetics and real property in the Kenwick neighborhood, I took a working definition of Kenwick as coinciding with the neighborhood association boundaries, since here I was interested in the aesthetic preferences and practices of a particular “active” subset of this area’s residents. In that study, in which the shared sense of place among a set of residents was of paramount concern, delineating a neighborhood in such absolute terms might be problematic. But, analytically, the spatial delineation of the neighborhood boundaries in absolute space is irrelevant insofar as the “power geometries” constituting place as localized knowledge extend far beyond the “place itself”, spatially and discursively (Massey 1991; Dourish 2006).

Equivalently, the discourses materialized in and through landscape, the analytical/aesthetic preferences expressed by residents, planners and others have resonances and geneses – ideological, cultural, material, etc. – far beyond the place itself (Schein 1997). And, likewise, although this is in part a study of the Kenwick neighborhood, it is primarily a means to specify empirically a methodological framework for interpreting digiplace/landscape more generally. This is not to say that there was substantial controversy, however, over the physical extent of the neighborhood. Neighborhood residents with whom I spoke (Boulton 2011) were not aware, of course, of my working definition of the neighborhood and (other than heuristically) my chosen boundary-drawing exercise was of little consequence to them. When they spoke of aesthetic preferences, experiences, architecture, and so forth within their neighborhood

they were referring to their own sense of place which, as one might expect within the framework of a shared aesthetic, made reference to very similar narratives about the extent of the neighborhood. Thus, while residents recognized the diverse economic makeup of the neighborhood, they also referred to the continuities between Kenwick and adjacent (“desirable”) neighborhoods in describing a broader inner-suburban city neighborhood.

#### **5.4.2 Whose neighborhood/evaluation?**

In my (admittedly inexperienced) reading of the planning literature around neighborhood perception, there appears to be a generalized focus on deploying “objective” data towards normative descriptions of and prescriptions for “good urban form” (Talen 2005). Where explicitly spatial/geographical techniques are used, there is little reflection, until more recently (specifically: Wilson 2011), on the highly subjective and embodied practices of neighborhood analysis or on the need for critical deployment of data collection methods, and (thus) more nuanced analysis of the data derived. In that regard, participatory or critical engagements with GIS frequently invoke the notion of speaking the language of the powerful, or using the tools of the powerful, via data commensurable with dominant mappings of place. That is, GIS is typically used at a distance for measuring the quality of neighborhood-as-service-provider based on remotely-sensed rubrics of service proximity, sidewalk width, and other factors that may or may not reflect actual residents’ experiences of their neighborhoods (let alone take into account the differentiated experiences of “accessibility” or pedestrian-friendliness based on factors such as age and disability). To GIS we can, of late, add Google Street View, a cost-saving resource for

municipal authorities and others seeking rapid neighborhood audits without recourse to the expense and distraction of in-person visits (Rundle et al. 2011).

Focusing on the experiences with locative media of outsiders – i.e., non-residents – is a further major way in which the present study is distinguished from classic neighborhood evaluation projects. Although an argument can be made that non-residents – and particularly the (predominantly) undergraduate students making up my study population – are, by and large, unlikely to have existing solidified preconceptions of the neighborhood, it is important to recognize that research participants are, of course, by no means naïve or unmarked in respect of innumerable dimensions of positionality, experience and memory. Eschewing research involving residents in favor of non-residents is, at one level, a move to minimize the effect of what (however problematically) might be described as a shared sense of place or even an aesthetic (per my earlier research) on the parts of neighborhood residents, but it is also a methodological (as well as practical) choice motioning towards the primacy of *the interface between place/landscape and locative media* rather than the practical problem-solving or actionable knowledge production implicit in much neighborhood/resident-based work. Indeed, critical studies of the neighborhood have tended to reproduce a romanticized image of the coherent neighborhood as a source of and site for politics/organization (Martin, McCann, and Purcell 2003), or shared identity (Hyde and Chavis 2008). There is no definitive justification then for selecting research participants from outside rather than inside the neighborhood, but I work from an assumption that the nature of pre-existing attitudes (those more worked-out, performative and fixed dispositions) towards the landscape of a particular neighborhood (cf. Tuan 1990) are

likely to be less systematically related amongst outside residents than amongst members of (again problematically) a more “culturally homogeneous” residential population. Insofar as we can control for existing knowledge/attitudes towards an area, I attempted to do so in the case of the survey instrument by recruiting participants with a claimed low-level of pre-existing knowledge of the neighborhood, and in the case of the interviews, by asking interviewees at the beginning of the walking process to describe their prior knowledge/experience of the neighborhood.

## **5.5 Sample placemarks and user interface specifications**

A very substantial component of this project was the development of locative media interfaces for use in the online and street-based components of the research. These interfaces are described subsequently within this chapter. As I mentioned above, these two interfaces were designed to mimic as closely as possible actually-existing and thus familiar locative media user interfaces. I considered it important that, as far as possible, the user experience should resemble familiar locative media interfaces both in order to potentially draw conclusions of broad applicability (to real world engagements with locative media), and to remove the learning curve barrier to entry. That is, the interfaces were designed to be intuitive to users with existing familiarity with a smartphone and/or a web browser. This section explains the development context for the implementation of Street-Based and Remote-Based interfaces.

### **5.5.1 The Google Maps API**

At the heart of both the Remote Interface and the Street-Based Interface is the Google Maps API or application programming interface. Launched in 2005, and revised

iteratively since, the API allows web site owners and online services to provide more-or-less complex user interfaces based on Google's underlying mapping. As of early 2013, the API was in use on over four hundred thousand web properties worldwide, making it by far the most used API in existence, with social platforms (especially Twitter), search APIs, and various imaging APIs (e.g. Flickr) rounding out this growing sector<sup>24</sup>.

The basic premise of the API is to allow for customized locational data display, overlain the Google base map. Based on JavaScript (a universal web programming language) the API is able to work with other programming languages to load and display data in real time, when requested, via so-called web service calls. (Rapidly changing information such as weather data or real estate listings are a typical case of such geocoded data being loaded in real time from an external database.) More typical deployments of the API include location maps with placemarks identifying, for example, business/campus sites. Increasingly, simple web based tools allow users to create or collaborate on their own mashups<sup>25</sup> without any specialist development skills. The Google My Maps feature, for example, allows for the addition of placemarks, lines and polygons (with associated labels), which may be made available publically or shared with an authenticated group of collaborators. An extension of this is the growing integration of Google Maps with Google Earth via the universal Keyhole Markup Language (KML) allowing for more

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<sup>24</sup> In reality, this most likely dramatically underestimates the number of sites running the Google API, as a single API code may be deployed across multiple domains. Additionally, simple embedding of Google Maps – for example, a “we are located here” map of a location – and static captures (images) of Google Maps are not included in these data.

<sup>25</sup> Mashups are web pages, applications, services or renderings that combine data from two or more sources. A Google Map displaying data from another source (such as Twitter or the MLS real estate service, for example) is a typical example of a mashup.

flexible display of spatial data in that desktop-based environment. For example, logs from GPS devices (including vehicle-based and handheld navigation systems and correctly equipped smartphones running appropriate software) may be displayed very easily within the Google Maps or Google Earth interfaces. This useful consumer-level functionality was deployed during the interview process where the logged routes of participants were often displayed on screen as a prompt to conversation.

Beyond desktop applications, the Google Maps platform is the de facto standard platform for a range of emerging augmented reality applications. One such example is Layar, the leading and rapidly growing augmented reality platform deployed in this project. Here, the Google Maps API is leveraged to display an alternative, map-based rendering of locational augmentations. That is, in addition to viewing annotations as overlays to a device's live camera view, users may view annotations as pinpoints (placemarks) on a Google Maps base. (Optionally, selecting an annotation may allow the user the option to receive step-by-step navigation directions to the location referenced, although this functionality was disabled, for simplicity's and consistency's sake, in the present study.)

The two interfaces developed for this research project involved the deployment of some of these basic and widely used features of the Google Maps API, in conjunction with some more custom web development and the use of a third party tool – the Hoppala Augmentation Pro tool – provided by Hoppala Agency, Germany<sup>26</sup>. The next two sections describe (briefly) the technical details of these interfaces and, more importantly, the methodological rationale for the specific interfaces developed.

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<sup>26</sup> I am extremely grateful to Marc René Gardeya, Hoppala's CEO, for making the excellent augmented reality creation tool available for this project at no cost.



## 5.6 The Street-Based Interface: Layar Augmented Reality

The Street-Based interface was based on the Layar Augmented Reality application, and leveraged the Google Maps API.

At the time of writing, Layar is the emerging market leader in consumer Augmented Reality applications, in part because of its flexibility and openness to third party contributors. In addition to providing the location-based services of interest in the present study, the Layar platform also supports innovative augmentations for print advertising campaigns (Figure 5.2).



**Figure 5.2.** The Layar Augmented Reality application.

This app is capable of displaying informational overlays (augmentations) on the basis of location, as in the present study, or based on visual recognition of printed (or material) elements. In a typical use of Augmented Reality application Layar: a Layar partner's print advertisement is recognized by a smartphone running the application, providing augmentation/annotation in the form of a video (shown at left), or options to purchase or share a product (shown right). Source: [Layar.com/features](http://Layar.com/features) (2012).

A major growth area in Augmented Reality applications in general is gaming, and much of the (admittedly limited) scholarly literature on augmented realities (Von der Pütten et al. 2012; Yamabe and Nakajima 2012) has dealt with these implementations. Using the Layar platform, Disney created park guides for its Disneyland and Walt Disney World amusement parks. Taking the concept a step further, Dutch theme park Efteling promotes a Layar-based augmented reality game called "Feetje en de Kluis" ("Fairy and the Safe"). Participants run around the theme park collecting gold coins that appear (as three-dimensional images/animations overlaying a smartphone's camera view), at locations throughout the venue, always watchful for the wicked witch seeking to steal the coins for herself (Figure 5.3).

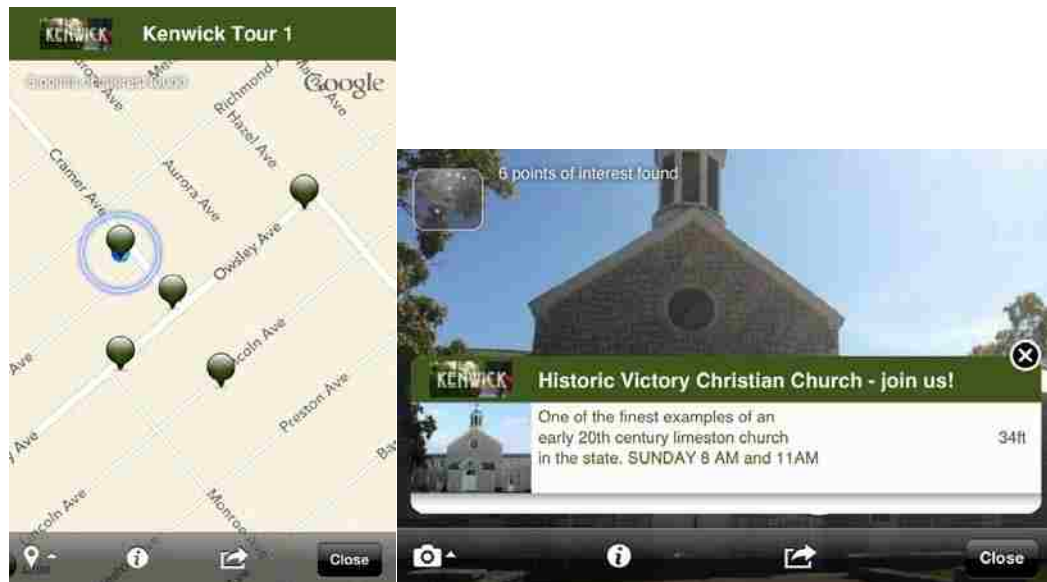


**Figure 5.3.** Children collect gold coins as a witch floats by (De Sutter 2011)

Copyright Efteling 2011

The Street-Based interface was designed to mimic a classic “guidebook” implementation of Layar. Specifically, it should be noted that, distinct from recognition-based Augmented Reality applications such as Google Goggles, wherein image recognition software attempts to read text and/or buildings/landmarks in order to provide associated content/annotations, the application developed here is entirely location-based. As such, and distinct from now-classic interactive walking tours involving scanning a physical code within the landscape (or inputting a number corresponding to a point of interest) no physical markers were required for this implementation. As with other Layar-based implementations, the user experience is centered around the idea of a “heads-up”

experience in which, rather than be engrossed in a complex user interface, participants could focus on their surroundings and the provided annotations.



**Figure 5.4.** The Layar interface showing an example of the map view and live camera view displays

All of the twenty participants using the Street-Based Interface reported using the Augmented Reality display at some point during their exploration, although all users also reported using this Augmented Reality display option in combination with the other views. Though some participants reported a level of comfort with the Augmented Reality view, many expressed doubts and/or feelings of unease related directly to this conspicuous heads up – holding the phone up – orientation required by phone-based Augmented Reality displays. Some of these findings are discussed in more detail in section 7.3, but I would note here that the product development trajectory of Augmented Reality applications is consistent with an acknowledgment of, for example, the

“awkward[ness]” described by Simon in “holding up the phone like I was taking a picture but not and people were thinking, I’m sure, ‘what’s this guy doing?’”.

While such a deliberate, gestural performance as running about, phone in the air, might be appropriate for a game of witches and fairies, it might not be as convenient or comfortable, as some participants described, for “everyday” use. The neighborhood exploration activity described here, more akin to a touristic walk or the kind of Augmented Reality experience associated with a theme park or historical tour, is qualitatively different, I would suggest, from fleeting utilitarian engagements with locative media, and several of my participants made that distinction. Participants stated, in various terms, that “in normal circumstances” their propensity to use the Augmented Reality component of the application might be diminished, relative to the more familiar (and discreet) “head down” map and list interface.

### **5.6.1 Description of Street-Based Interface Data Collection Task**

The walking experiments drew on the same underlying mapping/annotations as the Remote-Based component, and took place in the same location. Participants were asked to spend up to 45 minutes exploring the neighborhood as pedestrians. From a starting point outside of Wilson’s Grocery store at the intersection of Victory Avenue and Cramer Avenue (Figure 2.1), I asked the participants to explore the neighborhood in whatever way they thought would help them get a feel for it. Before beginning the walk, I showed the participants a printed map of the neighborhood, identifying the “boundary”, which is itself marked on the map view within the mobile app. The rationale here was to allow participants some freedom to roam throughout the neighborhood according to their own chosen route which may, or may not, incorporate the reading/viewing of all provided

annotations. My basic script indicated that “you can use the app however you want, if you find it helpful”. The density of annotations was sufficient – typically at least one per block (approximately one fifth of a mile on average) – that participants necessarily passed through/by several annotated locations between the start and end points of the route. Follow up interviews took place at a nearby location of the interviewee’s choice.

### **5.6.2 Mobile devices, sedentary methods**

There is a school of thought that says that so-called “go-alongs” – a broad range of mobile interview and ethnography techniques wherein the researcher tags along with a research subject as he/she moves from place to place – are necessary to observe spatial practices *in situ* (Kusenbach 2003) in order to produce subjective narratives of place that may be richer than those generated by sedentary interviews (Evans and Jones 2011). My reading of the paradigmatic examples (per DeLyser and Sui 2012) of go-along methods (Benwell 2009; Lynch 1960; Laurier and Lorimer 2012; G. Rose, Degen, and Basdas 2010) suggest that these methods often produce rich and detailed data consistent with the researchers’ substantive foci. They may also support (and constitute) a broad range of methodological and substantive research projects. In the case of repeated and banal tasks such as commuting, close participant observation may be an appropriate method for exploring “the nature of the familiar” (cf. Laurier and Lorimer 2012) with a level of introspection and reflexivity vis-à-vis wayfinding decisions that may not be feasible in a post-hoc interview.

Activist research also frequently benefits from a level of specificity and an evocative and emotional appeal to the meanings and memories of specific locations that is enhanced by *in situ*, mobile methods (Lynch 1960). Further and specifically, Evans and Jones (2011)

advocate a walk-along method for qualitative GIS data collection as a means to achieving data that are both more detailed but also tied more directly and precisely to particular coordinate locations. For specific kinds of research questions, sharing in the participants' movement is advantageous. However, as Laurier and Lorimer (2012) point out, this kind of method can produce substantial challenges. In particular cases, the interjection of a researching body may be, at best, distracting and at worst dangerous – consider bicycle commuting on busy city streets, or mobile interviews with car commuters as they attempt to navigate rush hour freeways with children on board. More relevantly, a research methodology concerned with the interaction of individuals with locative media and the materiality of landscape might be detrimental, tending to privilege the interaction between researcher and research subject rather than the research subject and his/her experience with the landscape (DeLyser and Sui 2012, 5). Although, the locational resolution – tying participants' utterances to specific locations – may be lower in the case of post hoc interview, the GPS tracking of a participants' route may mitigate this effect (to some extent), providing a prompt to participants' responses. As I outline in section 6.4, it proved advantageous – putting interviewees at ease, in my judgment – to allow the participants to discuss the exercise in an environment in which they felt comfortable. In the majority of cases, the follow-up interview took place back at, or in the vicinity of, Wilson's Grocery store.

Deliberately, the interview guide, in terms of the “grand tour” theme questions to be touched on resembled closely the major themes of the open-ended questions in the Remote-Based survey (see section 5.7.1) – specifically:

Please talk me through your route (not included in Remote-Based survey)

If you were to summarize what this neighborhood is like to a friend who had never been there before, what would you say?

Based on your exploration of the neighborhood today, what seems in your opinion seems to be the best or most desirable characteristic or feature of the neighborhood?

Based on your exploration of the neighborhood today, what seems to be the worst or least desirable characteristic or feature of the neighborhood?

It was my intention, therefore, in the interview portion of the research, to probe more deeply participants' usage of the mobile device and, particularly, to pursue further the extent to which they made use of (i.e. found useful) annotations in forming opinions of the neighborhood, vis-à-vis visible and other sources of information.

### **5.6.3 A note on the ethics of mimicry**

In order to avoid possible confusion as to the status of the Remote Interface vis-à-vis the actual Google Maps interface, I provided participants with a clear statement about the nature of the exercise in which they were engaged. The Interface and associated survey were secured in such a way that only survey participants, subject to the correct disclaimers about the nature of the maps, could access the materials.

Similarly, in order to make the Street-Based interface available to participants, it was necessary to publish the application to the public listing of Layar products. Within the Layar marketplace, however, I included the following description to ensure that any



Layar users stumbling upon the application would be aware of its experimental nature (despite the arguably innocuous and factually accurate, if selective, nature of the annotations): “For research purposes only. Contact Andrew Boulton, [andrew.boulton@uky.edu](mailto:andrew.boulton@uky.edu) for details.”

### **5.7 The Remote Interface: Google Maps and Street View**

The Google Maps interface (<http://maps.google.com>) provides a powerful platform for locational search and a range of additional services. The Remote Interface was designed to correspond to the basic desktop browser user experience: that is, the experience of a user on a desktop/laptop computer accessing the interface via a web browser such as Internet Explorer or Firefox. A typical consumer engagement with Google Maps might originate directly in the Google search engine (<http://google.com>) where a search for a product or service – “Mexican restaurant”, “HVAC contractor”, “pharmacy” – produces a series of results tailored to the individual based on relevancy including proximity based on Google’s detection of the user’s location. Alternatively, a user may explicitly search within Google for a specific location – “Mexican restaurant near Danville KY” – or begin directly at the Google Maps interface.

While continuous refinements are made to this user interface, the basic layout of the Remote Interface (Figure 5.5) resembled the Google Maps product (Figure 5.6) as it existed at the time the survey was conducted (first half of 2012). Achieving a realistic approximation of the Google Maps interface was no small feat, in part owing to the (understandable) security features and associated safeguards inherent to Google’s pages. Specifically, as a means to prevent phishing scams, Google pages can not be embedded

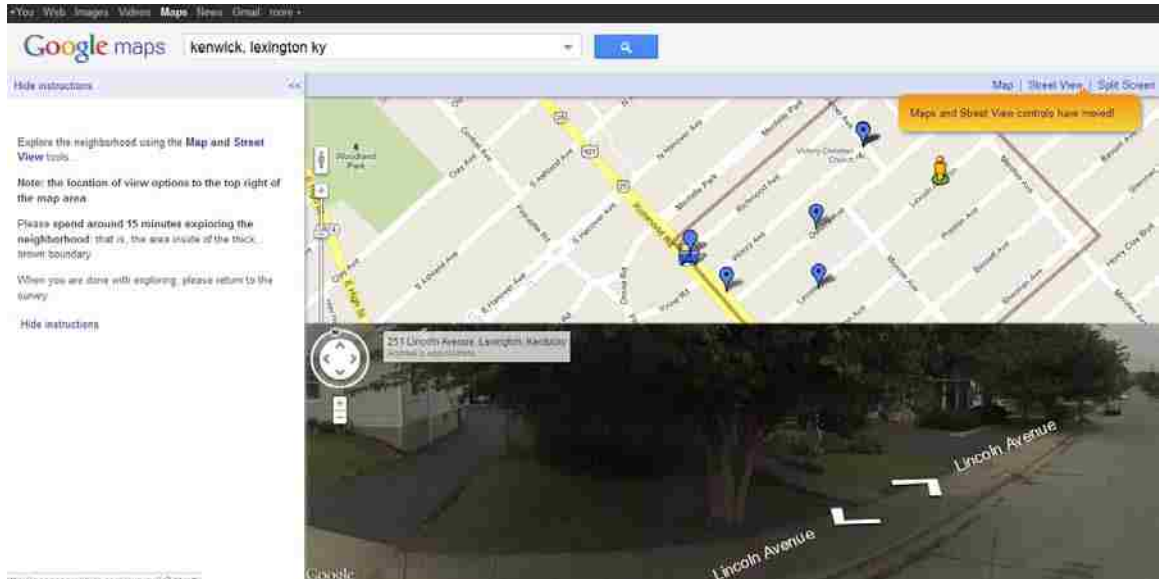
within a third party web site. This meant that, rather than use actual Google pages, the header to the Google Maps interface – that top section of the screen containing the black ribbon with links to Google services and the main search bar – had to be recreated as static HTML code. A key feature of this interface is the disablement of this search bar and additional Google services within the header section of the page to ensure that participants viewed only the placemarks provided within the exercise. (Users attempting to select the search input area or other options were provided a popup notification – see Figure 5.7.) Thus, with the search bar automatically populated to read “Kenwick, Lexington KY” the display of placemarks resembles the display of a set of results for a search conducted within Google Maps. As with an actual search, there are no options to refine search result (i.e. to search within results) but users also lack the ability to conduct additional searches (which would, of course, bring in additional search results/placemarks beyond those produced for this study.

A key feature of the Google Maps interface is the ability to switch between the Map view and the Street View imagery. Since participants’ explicit instructions included the use of Street View, it was important to ensure that the user experience of Street View was seamless and, as far as possible, identical to that of the standard (and familiar) Google product. Thus, using the Google API was able to create buttons, which users could use to switch between the three states (map only, Street View only, both), in addition to using the “Pegman” marker<sup>27</sup>. These options mirrored the available options within the Google Maps interface, and my initial user testing with fellow graduate students confirmed that,

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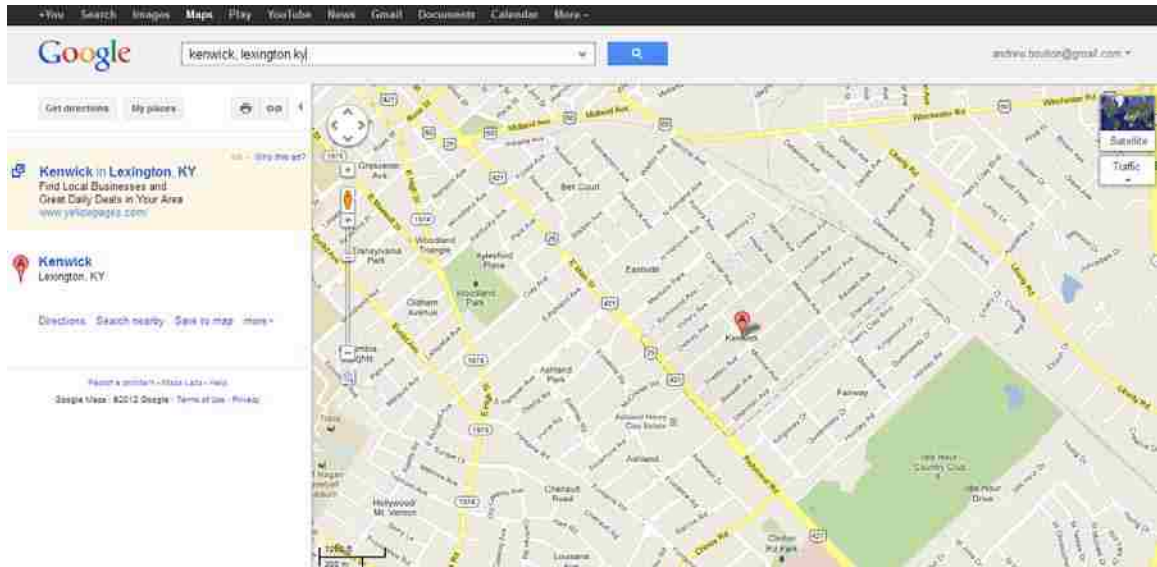
<sup>27</sup> Pegman is the semi-official name for “the little person” one drags to a location on the map in order to view the Street View imagery at that point.

in each case, the interface was intuitive and indistinguishable from the existing Google Maps interface.



**Figure 5.5.** The basic layout of the Remote-Based Interface, shown here with a split view between Street View and map.

The Remote Interface include a collapsible panel (left) with instructions and the ability to toggle between Street View, Map view and the split screen with both visible (as shown).



**Figure 5.6.** The actually-existing standard Google Maps interface centered on Kenwick (June 2012).

The actual Google Maps interface presents options to overlay traffic data, satellite imagery and additional layers of content. In order to control the placemarks made visible within the exercise, I opted to remove these additional controls from the Remote Interface.



**Figure 5.7.** The search bar and other Google services were disabled during the online exercise



**Figure 5.8.** Absent digiplace. Users access the Google Maps base map, and the StreetView interface, but no annotations

### 5.7.1 Description of Remote Interface data collection task

The Remote Interface was used in the context of an online, desktop/laptop-based task in which users were asked to explore the neighborhood using the provided interface for thirty minutes, and to answer the survey questions provided. Tracking code placed on the Interface suggested that, on average, users spent 43 minutes working through the exploration task and survey questions (combined). With a minimum time of 11 minutes, and a maximum time of a little over one hour and thirty minutes, it is likely that the median time fell somewhere around the requested half hour.<sup>28</sup>

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<sup>28</sup> The Google Analytics tracking code is unable to distinguish the time spent by participants actively looking at the survey/map versus the time the user session remained active (e.g. the user's window remained open even if he/she was not actively participating in the exercise).

The survey instrument, used to capture the extent to which the provided selection of placemarks impacts respondents' analysis of the neighborhood, had two dimensions. First, making use of suggestions derived from secondary literatures, I constructed a series of statements requiring Likert-scale agree/disagree responses designed to correspond, in the case of the first three statements, to the "architecture" moment, and in the second to three to the "amenity" dimension:

*Architecture-themed statements*

- This neighborhood seems to have interesting architecture
- The neighborhood seems to be historically significant
- It seems that people take good care of their homes

*Amenity-themed statements*

- It seems that the neighborhood is well-served by grocery stores
- The neighborhood seems like it would be a safe place to bicycle.
- The neighborhood seems well-served by public transportation.

## Google Street View in Lexington, KY

### Neighborhood viewpoints

Do you agree or disagree with the following statements about the neighborhood?

	Can't tell	Agree	Neutral	Disagree
• This neighborhood seems to have interesting architecture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• The neighborhood seems to be historically significant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• It seems that people take good care of their homes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• The neighborhood seems to be well-served by grocery stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• The neighborhood seems like it would be a safe place to bicycle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• The neighborhood seems well-served by public transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Figure 5.9.** Likert-scale neighborhood rating questions referring to amenity and architecture themes, shown in the Google Forms survey format presented to participants.

Then, I asked open ended qualitative questions not necessarily amenable to straightforward scale-rating or quantification, in order to attempt to capture something of the individual narratives participants tell about their online exploration of the neighborhood:

## Google Street View in Lexington, KY

### Describing the neighborhood

Please answer the following questions about your experiences using Google Maps/Street View to explore the neighborhood.

Based on your exploration of the neighborhood today, what seems in your opinion seems to be the best or most desirable characteristic or feature of the neighborhood?

Based on your exploration of the neighborhood today, what seems to be the worst or least desirable characteristic or feature of the neighborhood?

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**Figure 5.10.** Qualitative/open-ended survey questions:

- 1) Based on your exploration of the neighborhood today, what seems in your opinion to be the best or most desirable characteristic of the neighborhood?
- 2) Based on your exploration of the neighborhood today, what seems to be the worst or least desirable feature of the neighborhood?



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## Google Street View in Lexington, KY

If you were to summarize what this neighborhood is like to a friend who had never been there before, what would you say?

What additional types of information or features could be added to these maps/StreetView to allow you to gain a fuller understanding of the neighborhood?

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**Figure 5.11.** Qualitative/open-ended survey questions (continued).

3) If you were to summarize what this neighborhood is like to a friend who had never been there before, what would you say? 4) What additional types of information or features could be added to these maps/Street View to allow you to gain a fuller understanding of the neighborhood?

It was these open-ended questions that provided not only arguably richer answers, but also allowed for unexpected themes to be raised. For example, explicit issues of economic status/income, wealth and criminality were raised by several participants (see section 7.2), despite these themes being absent from the more structured questioning.

Finally, I asked participants about their experiences with the technology:

## Google Street View in Lexington, KY

### Your experiences with Google Maps and StreetView

Thinking about your experience with Google Street View and Google Maps today, to what extent do you agree or disagree with the following

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Google Street View and Google Maps are a good way of finding out about a neighborhood without visiting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The additional information (placemarks) helped me to understand the character of the neighborhood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After visiting this neighborhood "virtually" I am more likely to want to visit it in real life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Figure 5.12.** Questions about the technology experience

This proved particularly useful for exploring the differences in user-experience between those exposed to detailed, directed placemarks, versus those individuals exposed to the “blank” map. While more than half of participants viewing the Street View/map interface devoid of placemarks responded to the open-ended question “what additional types of information or features could be added to these maps to allow you to gain a fuller understanding of the neighborhood?” with specific suggestions, fewer than ten percent of participants using either placemark set asked for additional information (a significant difference).

The reported level of satisfaction with the user experience of the online platform provided an interesting point of comparison between Remote-Based versus on-site (Street-Based) participants. While fewer than one third of online participants strongly agreed that “Google Street View and Google Maps are a good way of finding out about a neighborhood without visiting”, there was near-unanimous support among my interview participants for the idea that their learning/exploring experience within the neighborhood was enhanced by the availability of locative media annotations. A handful of participants were apt to suggest that additional placemarks might have further enhanced their experience, but none suggested that the placemarks were uninformative: to the contrary, many interviewees commented that the annotations were useful in framing their exploration. When questioned about specific task-based use of Google Street View outside of this specific research activity:

- 21% of respondents (including 26% of those claiming Street View was unhelpful for “finding out about a neighborhood without visiting”) reported having used Street View to “check out a house or apartment in which you are interested”;

- 16% of respondents reported having used Google Street View or Google satellite imagery to “explore famous landmarks or other interesting locations”;
- 58% of respondents reported having used Google Maps to “locate a nearby restaurant, bar or store when visiting an unfamiliar location”
- 4% (6 participants) reported using Google Street View to “look at comical or unusual scenes, e.g. naked people, potential aliens, etc.”

In terms of the usefulness of annotations, interview participants typically stated that the provided annotations were either helpful and/or interesting in providing information about, or a route by which to explore, the neighborhood (Table 5.5). However, these comments were frequently couched in terms of qualifications about the usefulness of the annotations in relation to other visual/experiential cues. Emblematic of this notion that placemarks provided useful, if incomplete, information to participants are these thoughts from Michelle, 28:

They were a good starting point, I guess – they gave me something to look at and think about. I’m not sure I would say they were helpful per se but interesting for sure. I guess I didn’t know the significance, I guess you could say, the significance of the one house, the farmhouse? The oldest house. Right. That’s the type of thing you don’t get without the app or without having it there on the map I mean. In some more, you know, downtown or somewhere there could be a sign or a “this is awesome” sign or neon lights or you know the plaques “this is the home of.” I wouldn’t have known to look there otherwise and it was a good thing to look at for myself.

Making a distinction between useful and interesting, Michelle’s response was consistent with those of several interviews with whom I engaged explicitly on their thoughts about the utility of placemarks in exploring a neighborhood on foot. Although (as one might expect) nobody stated openly that they took placemarks’ claims to truth – or even to the significance of locations highlighted – at face value, all described making use of the placemarks in plotting a route through the neighborhood and choosing the specific locations on which to focus, even when they occasionally questioned the content of placemarks

**Table 5.5.** Survey participants’ descriptions of the usefulness of Google Maps and Street View.

<b>Statement</b>	<b>Total agreement*</b>		
	<i>Amenity-themed annotations.</i>	<i>Architectural-themed annotations</i>	<i>Blank/baseline map (no annotations)</i>
The additional information (placemarks) helped me to understand the character of the neighborhood	82%	96%	4%
Google Street View and Google Maps are a good way of finding out about a neighborhood without visiting	86%	82%	64%

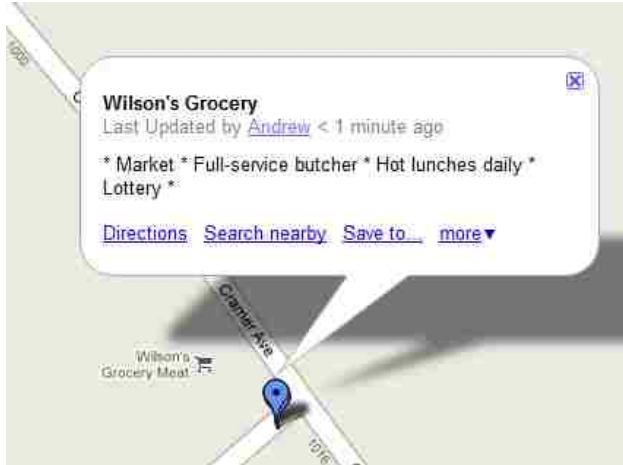
\* includes “agree” and “strongly agree” responses.

## 5.8 Placemark Sets

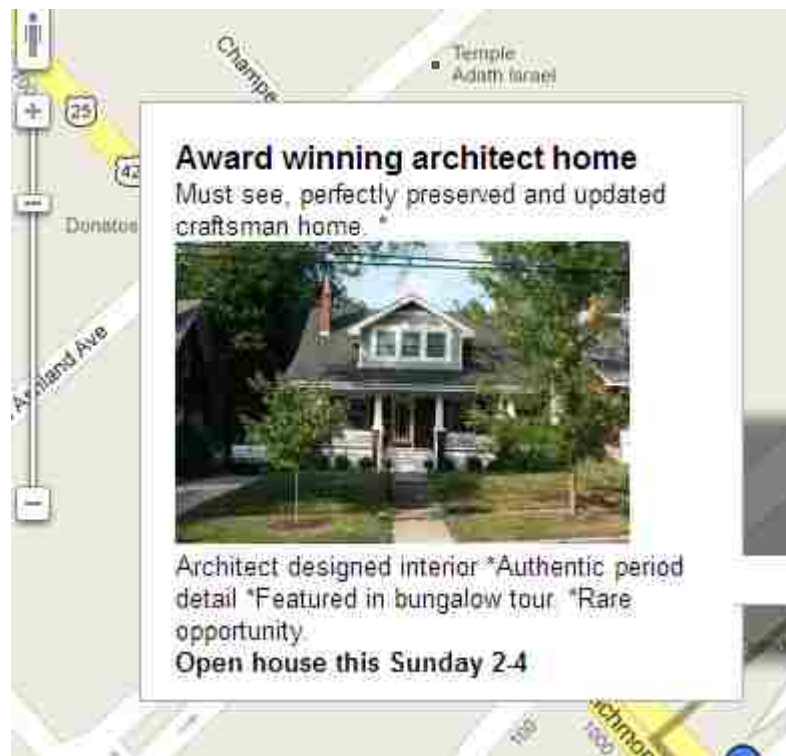
In terms of the architecture v. amenity annotations, a couple of further explanatory comments are required. Recall that, unlike previous studies' deployments of aesthetic and convenience measures mentioned above, my aim was not to simply solicit respondents' opinions on the architecture and amenity value of the neighborhood, but to attempt to say something about the ways in which the particular set of annotations made available to the respondent might impact (or not) their resultant understandings. That is, did survey participants exposed to placemarks stressing the amenity value rather than architectural value (or some other dimension) of the neighborhood refer more frequently to those dimensions of the neighborhood highlighted in placemarks? As I discuss in some detail in section 6.3.2, we see a measurable effect whereby participants in the Remote interface exercise were more likely than the baseline (blank/absent placemarks) group to mention topics highlighted within the placemarks.

In order to vary only the content of annotations, I controlled for both the number of annotations provided and their location within the map. Although some annotations referred to very specific locations – particular houses, bus stops, stores – I was able to position placemarks in very similar, and semantically equivalent, locations on the map (i.e. within the same block, or equidistant from nearest neighbor placemarks). For example, Wilson's Grocery is located at the intersection of Cramer Avenue with Victory Avenue, so it was necessarily a key placemark in the amenity-themed placemark set. Rather than speciously attempt to create placemark downplaying the amenity value of the store but emphasizing its architectural qualities, I opted instead to include in the architecture-themed placemark set an annotation, 30 feet away, for the church building on

the opposite side of the intersection. As such, I maintained an equivalent distribution of placemarks across the neighborhood between both maps.



**Figure 5.13.** Intersection of Victory Ave and Cramer Ave, location of both a) Wilson's Grocery and b) Victory Christian Church stressing amenity versus architectural characteristics



**Figure 5.14.** Richmond Rd./Main St. at Victory Ave.

(Note, only the transportation placemark appear in the amenity-themed placemark set, and vice-versa.)



**Table 5.6.** Complete text of annotation sets used in both Street-Based and Remote-Based exercises.

Annotation	Amenity-themed annotation	Architecture-themed annotation
1	Grocery Store. "You can't beat our meat". *Quality meats *Produce *Lottery M-F: 6AM - 8:30PM. S-S: 6:30AM-8PM. [Picture of store]	Historic Victory Christian Church. One of the finest architectural examples of an early twentieth century KY limestone church in the Commonwealth. Join us for worship!
2	Dave's Barber Shop. Mens and ladies cuts. Get a coupon for 10% savings. [Picture of store]	Bungalow Tour 2012. Stop on by Sarah and Janette's wonderfully restored craftsman gem. [Picture of house]
3	The Kenwick Center. Lexington, Kentucky 40502 (859) 266-6405. Mon–Thurs, 3–9 pm. Friday, 3–7 pm. Saturday and Sunday (Closed). Full-Day Program/Snow Day Hours: 11 am–5 pm. [Picture of Center]	The Kenwick Center Centennial Celebration. From Picasa. 1 yr ago. [Black and white picture of Kenwick Center]
4	Kenwick Park. Lexington-Fayette Department of Parks and Recreation. [Picture of park]	Bungalow Tour 2012. This one-of-a-kind "neo-bungalow" is truly unique. Don't miss Kenwick's greenest bungalow! [Picture of house]
5	Thriftway Thriftway Food Market. 201 Owsley Avenue, Lexington, KY. (859) 266-4122 . 1 review: Open late with awesome selection. [Picture	Bungalow Tour 2012. When James and Annette first saw their 1924 brick home the fell in love – and so will you! [Picture of house]

	of store]	
6	Refreshments from Kenwicks oldest home! Lemonade, cookies, refreshments! [Picture of refreshments in front yard]	Bungalow Tour 2012. Bill and Linda's charming farmhouse is one of Lexington's most historical homes. [Picture of house]
7*	Bus 11. Direction: downtown. Service run by LexTran. Route 11 depart @ 1131 Richmond Rd. Every 30 minutes Plan your trip! <a href="http://www.lextran.com">http://www.lextran.com</a> [Picture: LexTran logo]	Award winning architect home. Must see, perfectly preserved and updated craftsman home. *Architect designed interior Authentic period detail *Featured in bungalow tour. *Rare opportunity. Open house this Sunday 2-4 [picture of house]
8	Bus 11. Direction: downtown. Service run by LexTran. Route 11 depart @ 1131 Richmond Rd. Every 30 minutes Plan your trip! <a href="http://www.lextran.com">http://www.lextran.com</a> [Picture: LexTran logo]	Bungalow Tour 2012. Wait until you see the inside of this unique home. Is it a home... or an art gallery? [Picture of house]
9	KOLTS Trolley. Blue line. Hourly service. [LexTran logo]	KOLTS Trolley. Blue line Ride in style * Keeneland * Downtown * Chevy Chase. Modern convenience, classic charm. [Picture of trolley]
10	Taylor Robinson Music Company. More info. 139 Owsley Avenue Lexington, KY 40502. (502) 257-7047. <a href="http://taylorrobinsonmusic.com">taylorrobinsonmusic.com</a>  5 reviews. [Picture of guitar]	Bungalow Tour 2012. Have you read 'Beautiful Gardens of Kentucky'? This gorgeous home is the cover story. [Picture of front yard]
11	Summer programs enrolling now. Victory Christian Church Community Center	Act quickly! Character like this goes fast. 3br/2ba * stunning details * stunning kitchen * original hardwoods throughout *

	[Picture of children playing]	award-winning bungalow. Rector-Hayden Realtors, Lex.... [Picture of house]
12	Public Art Garden [Picture of garden/sculpture]	Public Art Garden [Picture of garden/sculpture]
13	Little Angels Child Care. Home from home. Infants. Call me, Debbie, and feel good about daycare. [Picture of child's painting]	Bungalow Tour 2012. Kick off you shoes and swing on Rick and Jay's peaceful front porch. Check up on their organic gardening progress. [Picture of front porch]
14	Everyday Grocery. Thriftway. Open 7 days. Notary Public. [Picture of store]	Thinking about home ownership in a vibrant and affordable neighborhood? This one is too cool for words! Craftsman details include curved/arched doorways, beamed ceiling, built-in secretary, built-in storage galore! Complete architect dream. [Picture of house]
15	Mike Wiggins Realty. Full service, local. 20 years expertise. 178 Bassett Avenue. Lexington, KY 40502. Call me. Write a review. [Picture of realtor sign]	Unbelievable style and value. Walk to downtown events, Henry Clay home, restaurants. Original renovation by the famous Broken Fork Design. [Picture of house]

\* See Figure 5.14

### 5.9 Qualitative/quantitative discourse analysis

Following the well-worn combination of quantitative discourse analysis combined with interpretive critical discourse analysis (McFarlane and Hay 2003) my reading of texts (interviews and open-ended survey transcripts) proceeded using a two-pronged method:

- First, the texts were read through the direct lens of the codebook, and each instance of an “aesthetic”, “amenity” or related theme was identified and counted. In this phase, I was interested in noting the presence of a theme rather than the content (or duration) of engagement with that theme. I aggregated these counts by technology (street- versus online-based) and by placemark set as a basic means of comparison (see section 6.3.2).
- Second, I reread the texts in a more open-ended way by which I mean, following Blommaert and Bulcaen (2000), I attempted to pay attention to the context of the utterances (broadly defined) in terms of both the interview/survey text itself and, more significantly, the broader discursive contexts related intertextually with the participants’ answers.

This summary is necessarily simplified, and even as I attempt to impose and order on the process for the purposes of writing about it, it is apparent that the analysis/interpretation phase is a lot messier and more complex than this (or textbook) versions would allow. Specifically, I think about the way in which these stages were substantially less discrete than this sequential description would allow. The procedure, in hindsight, more closely resembled what has variously been described as an “interpretive dance” (Crabtree and Miller 1999, 132) or a hermeneutic circling of moving “back and forth between collecting, reflecting, analyzing and writing” (Addison 1999, 147). In other words, the “ideal” inductive method, wherein texts are read openly without preconceived notions as to their likely meanings and significances is, necessarily complicated not only by the biases, analytical frameworks and subjectivity with which we approach textual analysis, but also by the practicalities of the research process in which analysis and framing

inevitably precede and mutually contain the data collection phase. The interview and survey texts did not emerge unprompted from individuals unacquainted with the context (research) of their contributions; questions were tailored to elicit answers likely to relate to specific topics of interest to my research agenda (aesthetics, trust, amenities, authorship, etc., etc.).

In the case of the face-to-face interviews and open-ended survey responses alike, the social and technological context in which texts were produced (answers given) is not inconsequential. For example, interview questions were framed according to my evolving sense of what was relevant or interesting to the research project. Having not initially expected emotion – particularly fear – to figure in my interview participants’ answers, I actively solicited answers on these topics in later interviews. Following the first couple of interviews in which reference was made to feelings of safety or fear at particular times/places within the neighborhood, it became apparent to me that I had perhaps overlooked its significance as a theme (or at least as a theme that would emerge explicitly and be articulated verbally). I subsequently modified my approach to probe specifically for these kinds of comments. In one of my later interviews, as I illustrate in the excerpt below, I attempted to push the question of fear, an emerging theme for individuals expressing a preference for particular, more upscale, parts of the neighborhood:

Jim: and then I walked by the that old what was it?

AB: the... umm...

Jim: Oh I think it was, oh what was the street? Lincoln. Let me see [looking at laptop screen showing Google Earth view of the neighborhood and route] Lincoln. Yes Lincoln.

AB: the old house-

Jim: Farmhouse. That one. The farmhouse, and walked up towards here.

AB: Did you go that way [indicating further north on Lincoln]

At this point, I wanted to understand why Jim had chosen to backtrack towards the more “upscale” parts of the neighborhood immediately adjacent to Richmond Road. Although I had very clearly in my mind the question of fear of the northernmost parts of the neighborhood – or at least an intent to have participants express and describe a preference for particular parts of my neighborhood – I wanted to guide the conversation rather than suggest themes or keywords outright.

Jim: No, no. I went back down towards –

AB: why?

Jim: Richmond... well I was going to. Why?

AB: well, umm, if you could maybe talk me through what made you turn back at this point, what it was that...

Jim: oh, it looked more interesting that way, I guess. I spotted a yard sale and...

AB: cool, so nothing particular about Lincoln or its placemarks

Again, I wanted to remain as opaque as possible to why I was taking such apparent interest in an apparently mundane question of route selection. Nevertheless, during this particular interview – and others with a similar probing dynamic – I made a mental note

of the uneasiness I felt about possibly pushing participants towards particular judgments, perhaps even a sense that Jim, for example, was “eager to please” to the point of trying to second guess what it was that I was getting at, what the “right” answer was.

Jim: oh, no. The umm, the pinpoint – placemark – I think was another bungalow [laughter]. Another one.

AB: kind of boring?

Jim: Yeah compared to you know, well, it didn't look like anything and I love yard sales. Any time there's a yard sale. I would have been back [to the interview location] in no time if not [laughter]

AB: so after the yard sale...

Jim: Well I didn't have my wallet

AB: you didn't buy anything then?

Jim: there wasn't really anything so I carried on with the umm your experiment, the walk

AB: and went back this way [to previous intersection]?

Jim: and turned left

AB: Interesting... why that way?

Jim: it looked sketch there [laughter]. No offense...

AB: I see. Ok, sketch how?

Jim: I mean compared to the rest. I don't know, just not somewhere to walk...

AB: unsafe?

Jim: no, just, I guess – I wasn't scared [laughter].

The purpose of relaying this exchange in its entirety is to illustrate one facet of my contention that the context in which utterances are made and answers given matters. Specifically, I want to suggest that the theme of safety and fear was not, at the outset, a category or a code that I imagined would be significant to my analysis. But nor was its appearance a simple “thunderbolt” (Addison 1999, 155) that emerged spontaneously in the subsequent-to-data-gathering analysis phase. Rather, throughout the research process there was a continuous iteration between data collection and data analysis. Within a single interview I would, as I demonstrate here, attempt to guide the participant back on-topic according to my basic “grand tour” interview guide/template. However, the interview guide became a living, breathing document which, unlike the online survey, did not remain rigid throughout the data collection process.

This is not to suggest, however, that the scope of participants’ responses was so circumscribed and the evolving analytical frames so rigid that emergence of new or additional understandings were impossible. Indeed, while I might express skepticism in general about the potential for a more extreme “grounded hermeneutic” approach – Addison (1999, 155) describes spending several months immersed in textual data openly reading and rereading materials until such time as the apparently unordered narratives and fragments of analysis began to “crystallize” into coherent stories and (thus) coherent analysis – grounding analysis, as far as possible, in a close and repeated reading of texts nevertheless led, I think, to unanticipated findings.

For example, I had not anticipated that questions of economic class should figure prominently in individuals’ discussions of aesthetic preferences or their feelings of emotional comfort or discomfort within the neighborhood. Hypothetically, a more



deductive and less iterative approach to textual analysis such as one deriving a more rigid neighborhood evaluation scheme (as in the literatures described above) might well have missed the emotional and economic components of neighborhood preferences in favor of creating data commensurable with neighborhood evaluation studies' normative categories. In a somewhat different context, Semetko and Valkenburg (2000) make a similar argument about the impossibility of treating inductive and deductive discourse/content analysis as separate methods (rather than two necessarily linked components of a single strategy) as they analyze news media's framing of stories using deductive ("theory-driven") and inductive ("open") reading of texts. As such, they (and I) suggest that a discourse analysis methodology may remain open to the hermeneuticians' "thunderbolts" (Addison 1999) even as we recognize the impossibility of purely inductive analysis.

Despite my unease that participants were inevitably guided in their responses by the tenor of the questions (and the nature of the interactions between us), Crabtree and Miller (1999) suggest that there is a balance between staying "on topic" – sticking to the script – and following hunches and/or tangents that, in the emerging context of the conversation, seem important to participants and interviewers alike. By sticking rigidly to a predetermined "script" or interview guide, they argue, we "[run] the risk of phrasing the researcher's own concerns into the mouths of the respondents and never giving voice to the interviewee's own perceptions and meanings" (1999, 90).

Following McFarlane and Hay's (2003) rationale for their mixed discourse analysis approach makes sense here. In their case, the texts under consideration are articles taken from *The Australian* newspaper – that country's (only) national newspaper, owned by

News Corporation – and covering the riots and protest at the Seattle World Trade Organization (WTO). Their coding process involved quantifying the number of lines of newsprint dedicated to particular actors and particular themes. As well as classifying themes and sources as broadly sympathetic or hostile to the protestors and their agenda, McFarlane and Hay identify key “frames” – an approach that I used in my earlier work documenting the popular geopolitical content of post-September 11 country music songs (Boulton 2008). However, frames – identified by their inclusion of “culturally familiar symbols, and also by those choices of attribution, phraseology and source selection” (McFarlane and Hay 2003, 218) – are, arguably, rather easier to identify in the context of news media texts, with their often very deliberate “spinning” of news events, relative to interviews or other texts. For example, source selection – which politicians to quote, which organizations’ press releases to cover – in the composition of a newspaper article, or written text more generally, is rather easier to identify than is the corresponding intertextuality of an interview transcript.

The potential texts and discursive contexts informing participants’ utterances about landscape appreciation/experience are not readily circumscribed. Moreover, there are substantial existing literatures within a broad gamut of media studies, political science, geography (and so forth) dealing explicitly with the news media and with specific framings of specific issues. Needless to say, such pre-existing literatures on the framing of landscape experience and preference do not exist as explicitly methodological resources. However, “even” for McFarlane and Hay, frames (read from specifically methodologically relevant secondary literatures) merely form the basis for a process of “intensive deconstruction” (215) which attempts to build on, and not merely

compare/quantify against, existing understandings of protest framing. Thus, existing literatures on landscape aesthetics and neighborhood perception fulfill a similar role here, even as we recognize that such straightforwardly circumscribed framing literatures may not exist in the present context.

When I think about *context* I think about Crabtree and Miller's (1999) insistence on being attentive both to the *social* context of the interview – the intersubjective dynamic between researcher and researched – and the *discursive* context of the interview, in terms of the subject matter raised and the way in which questions are posed to the participant. Further, I would broaden “context”, per Linda McDowell (2010) to include a broader range of factors – not least the physical environment (home, office, bar, quiet, loud, empty crowded, etc.), the place of the interview, in which the interaction takes place. In the section 6.4 I reflect on some of the ways in which the place of the interview and the related social interactional dynamics manifested themselves in the conduct of interviews. While not intended to be exhaustive or even representative of the social and material contexts significant to the conduct of these interviews, they are intended to flag some of the ways in which intersubjective relationships shape the nature of interview data in various ways. Additionally, they provide some more detailed explication of the notion that context matters even in the more banal sense of textual context: where do themes/ideas appear, relative to other themes and ideas, and in response to what prompts/questions?

Echoing McFarlane and Hay's (2003) description of their mixed qualitative/quantitative discourse analysis method, I would argue that it is significant that, for example, amenities such as parks and stores were mentioned as the neighborhood's best feature by survey

participants significantly more frequently when participants were provided with amenity-themed annotations rather than placemarks emphasizing other characteristics. (A more detailed account of a similar effect observed in respect of architecture/aesthetic-themed annotations is provided in section 6.3.2.) A more “interpretive” discourse analytical framework allows for both extensive characterization of a corpus of texts (survey responses) and a deeper appreciation of contextualized thoughts such as the following response to the generic question about the neighborhood’s best or most desirable feature:

“all the little stores remind me of the Chattanooga area, the neighborhood there so I would say those”.

While this is clearly a response that cites the existence of grocery stores as a positive factor, it is also a far richer response suggesting a deeper, more visceral connection based on a memory evoked. (See section 6.3 for more on respondents relating their neighborhood description to familiar places or ideal types.) At its most fundamental level, then, discourse analysis, versus mere content analysis, opens up the complexity and social embeddedness of utterances for critical examination.

Based on my reading of the neighborhood evaluation literatures referenced above, and in conjunction with my described thematic and methodological interests in locative media and landscape aesthetics, I devised a codebook for the analysis of the qualitative data derived from both interview transcripts and open-ended survey questions. The code book presented below represents a significantly “cleaned up” code book – the final iteration in a spiraling process, as described above.

### 5.9.1 Content Analysis “code book”

<b>Aesthetic elements</b>	Code recorded
<p><i>Architectural style</i></p> <p>References to bungalows, Craftsman, Victorian (and other designations)</p>	A
<p><i>Urban form</i></p> <p>References to the urban, suburban or general layout of the neighborhood including references to lot size, grid or street layout, similarity to “ideal” (subdivision, downtown neighborhood) types</p>	U
<p><i>Age of housing</i></p> <p>Anything that referred explicitly to age, either positively or negatively</p>	G
<p><i>Care and Maintenance</i></p> <p>Comments making a judgment about the level of upkeep of properties, yards and the neighborhood in general (whether positive, negative, comparative, etc.). Includes statements about dereliction and neglect.</p>	C
<p><i>Charm, character, “cuteness”</i></p> <p>Comments that reference generally positive normative judgments about the homes or built environment that do not make explicit reference to specific material characteristics.</p>	Cc
<p><b>Economic and social characteristics</b></p>	
<p><i>Economic class</i></p> <p>References to the wealth/poverty level of residents, including explicit references to class (“middle class” etc.)</p>	E
<p><i>Emotional responses</i></p> <p>Any explicit references to “feelings” including of safety, homeliness, fear,</p>	M

comfort, discomfort, etc.	
<p><i>Individuals' characteristics or personality</i></p> <p>References to the perceived characteristics of the neighborhood's residents beyond explicitly economic indicators. Including race, age, diversity, "friendliness", etc. whether expressed in positive or derogatory terms</p>	F
<b>Amenity elements</b>	
<p><i>Stores/facilities</i></p> <p>References to the availability or otherwise of grocery stores and consumer opportunities</p>	S
<i>Transport and proximity</i>	T/P
References to availability (or lack) of transportation whether public or private . This category includes references to proximity (to downtown or other locations of interest) when the comments refer to the amenity value of such proximity rather than to the urban form associated with such a location.	
<p><i>Walkability/cyclibility</i></p> <p>References to the friendliness or otherwise of the location to cyclists and pedestrians</p>	W
<p><i>Outdoor recreation and environment</i></p> <p>References to parks, green space, trees and "natural" environmental amenities or deficits. Excluding comments more directed towards urban form (large/small lots) or population characteristics (green, sustainable, etc.)</p>	R

### 5.10 Concluding comment

In this chapter I situated the present research within the context of methodological/theoretical literatures within geography concerned with subjectivity and

difference, but also began to engage in a more “practical” sense some of the ways in which these informed my research design.

## 6. Findings: Digitally mediated landscape aesthetics

### 6.1 Chapter Summary

- Aesthetics is a key critical concept within cultural landscape studies, and previous work has demonstrated the value of semi-structured interviewing as a lens onto the ways in which residents understand in terms of aesthetics the landscapes they inhabit.
- In this case, combining qualitative interviewing with a larger scale survey instrument broadens the purview of landscape aesthetics to consider the ways in which other, non-resident individuals engage with aesthetic discourses of landscape without, necessarily, recourse to the social embeddedness of long-term residents. My previous interviews with neighborhood residents provide a useful point of comparison here.
- Non-resident participants who explored the neighborhood with reference to an augmented reality application (the Street-Based interface) told stories about the neighborhood remarkably consistent with those of neighborhood residents irrespective of the content of annotations provided to them.
- However, there were subtle differences between the interviews given by participants exposed to amenity-themed annotations and those provided with architecture/aesthetic-themed annotations.
- When these annotations emphasized the amenity-value of the neighborhood, rather than its architectural merits, interviewees were more likely to refer to the neighborhood's amenity value. By contrast, participants in the latter group were more likely to engage directly and forthrightly with questions of architectural merit asserted through the provided annotations.
- Among the online survey participants, the acceptance of the neighborhood's aesthetic desirability was not unanimous. Nevertheless, using a Remote-Based Interface (and having never visited the neighborhood in person), participants were willing to offer strong opinions about the neighborhood and its "character", extrapolating worked-out perceptions from the annotations provided.
- On several questions, there were significant differences between the viewpoints expressed by Remote-Based participants provided with different sets of annotations. There was also a measurable difference between the responses of



those provided with a “blank” versus an annotated map, with the latter more likely to express “strong” opinions (Table 6.3 and 6.4).

- In general, locative media represent significant discourses working in/through landscape. In the present context they were important resources used by individuals in seeking to understand and engage with place.
- Consumers of locative media – the participants in these research exercises – are not, universally, passive consumers of media. To the contrary: several participants engaged directly with questions of democracy and authorship, questioning or problematizing the authoritative representation of place provided (or its genesis).
- This implies a need for further investigation of the broader regimes of visibility implicit in consumer locative media products, along with the politics of locative media production and consumption (chapter 8).
- Throughout the research process a range of methodological issues became apparent, including some familiar concerns in qualitative research in general, and more specific concerns related directly to the conduct of this research. I explore the politics of researching “in your own backyard” to suggest ways in which conducting research within my own neighborhood both aided, and presented challenges to, the project.

## 6.2 Aesthetic Preferences

“Historical, cute, friendly – if you’re into that sort of thing. Which I’m not”

(Online participant, female, age 24)

In this chapter I explore some the ways in which survey and interview participants utilized locative media in the form of Google Maps/Street View (the Remote-Based Interface) and augmented reality presentations of the same data (the Street-Based Interface) in forming, and expressing, views about the aesthetic quality of a residential neighborhood.

I begin with some brief comments situating the landscape aesthetics component of the present study within existing substantive and methodological literatures on landscape aesthetics in geography. In particular, I reflect on the utility of these literatures for understanding the marked distinction between the relatively consistent and stable perceptions of an aesthetically pleasing, walkable and otherwise “positive” neighborhood reported by those exploring on foot, versus the more varied perceptions reported by those participating in the Remote-Based online exercise. While something as “sensuously passionate” (Duncan and Duncan 2004, 36) and “viscerally emotional” (Boulton 2011, 224) as aesthetic preferences in respect of landscape can never be captured objectively via a survey instrument or semi-structured interview (or any other means, for that matter), these methods worked as effective prompts to get people talking about ordinary landscapes.

Additionally, even as they shed additional light on the power of normative aesthetic discourses, the distinctions between street- and screen-based exploration, remoteness and proximity, investment and detachment, offer empirical corroboration of the conceptualization of a more-than-representational landscape aesthetic developed in my earlier work on Kenwick (Boulton 2011), drawing on the work of poststructuralist landscape scholars (Duncan and Duncan 2004; Schein 1997). They also flag potential directions in which cultural geographic attention to landscape aesthetics (and locative media) may be expanded.

I opened this chapter with an answer given by one of my survey participants asked to briefly sum up her thoughts about the neighborhood having explored the neighborhood online via the Google Street View interface containing no annotations. This answer stood

out for a couple of reasons. First, “historical” and “cute” are adjectives used *ad nauseum* by online and interview participants alike – but, typically, they are used in such a way as to suggest that the individual enjoys or approves of those qualities. As such, this survey respondent, and others making similar judgments about the neighborhood, were able to infer and describe neighborhood characteristics similar to the judgments reached by street-based participants and, for that matter, neighborhood residents. Second, and related, never having set foot in the neighborhood, this respondent, and others who reported no pre-existing familiarity with the neighborhood, felt able to report on an experience of “friendliness” (in this case), or other emotional/social characteristics on the basis of Google Street View imagery. I want to be clear that this willingness/ability of participants to draw conclusions about those same emotional and visual characteristics of place constitutive of an aesthetic does not necessarily reduce the status of the aesthetic to mere normative preference for the visual qualities of landscape. What I think this use of Remote-Based locative media methods foregrounds, however, is the excess of discourses and actors constituting something as amorphous as an aesthetic: the broad array of relevant discourses informing engagement with (representations of) place. Moreover, it draws attention once more to the need to take seriously the status of the image within locative media technology and to consider the ways in which photographic production and consumption in this context constitute a multi-sensual set of “visual practices” and not a singular privileged occularcentric vision: that is, it points to the need to avoid the conflation of visuality and visual practices with straightforward “vision” (cf. Ingold 2000, 286–287). These questions of the more-than-visual quality of imagery are taken up in more detail in chapter 7.

Whereas normative aesthetic discourses around symbolic landscapes – such as “cute” and “historical” neighborhoods, the New England village or the small town Main Street (etc.) – exist as “a set of ideas and memories and feelings” (Meinig 1979, 174) in the popular geographical imagination, temporally and spatially specific iterations of the aesthetic rely on the materiality of actual places and the continuous practices by which the materiality of those places is reproduced. The slippage that animates emerging work in (digital) visual scholarship, and resonates with the theorization of this complex relationship between “ideal” and actual landscapes, is one between images as discursive carriers of meaning versus images as active parties to ongoing sensory experiences (Pink 2012). As such, I argue, the delineation between experiential register of moving through actual places and the rich multisensuality (Ibid.) of moving through virtual places (e.g. Street View) is blurred, since both are (necessarily) more-than-visual experiences and both are increasingly mediated by the presence of annotative locative media representation.

This chapter therefore reports on findings from the street-based interview component of my research, and from the online, screen-based portion. Working within a broad intellectual landscape that has long since rejected a binary division something like virtual and real worlds (see section 3.3), the data derived from online versus street-based experiments can be regarded as representing different cuts through the same phenomenon, even as we recognize the particularities of each platform’s unique practices. As such, I build on existing methodological approaches to landscape aesthetics, in which semi-structured interviews are used in conjunction with critical readings of landscape and associated discourses, to call for a more explicit and generalized

incorporation of the role of locative media and associated methods within studies of landscape (and) aesthetics.

### **6.2.1 Why aesthetics?**

Aesthetics is an important topic for cultural geographers who have examined specific iterations landscape aesthetics as well as broadened substantially the intellectual purview of aesthetics. Not only are geographers concerned with the rarefied tastes of elites but, increasingly, with the everyday practices and tensions in and through which landscape aesthetics are materialized, and even with the workings of aesthetic discourses in ordinary residential landscapes (such as Kenwick). The Duncans (for example: Duncan and Duncan 2004; Duncan and Duncan 2001) and Schein (for example: Schein 2003), as major drivers of this vein of geographic scholarship, also draw attention to and interrogate the economic, racial and other dimensions underpinning something as apparently innocent as landscape “taste” (Vanderbeck 2006). A further component to this broadening the purview of landscape aesthetics is, I would suggest, the opportunity to consider digital representations of place as important actors in the cultural landscape both as sources and repositories of popular discourse, and as party to embodied practices of/with place.

Emblematic of this focus within cultural landscape studies on the everyday, taken-for-granted practices of landscape aesthetics, Nick Blomley’s work examines the enactments of property rights tied up in a proprietarian gardening discourse (Blomley 2007) grounded in a shared aesthetic among a neighborhood’s residents. This longer-run investment in a neighborhood and the continuous practices through which aesthetics are asserted or reproduced provides useful contextualization for those internally consistent

aesthetic narratives produced by Kenwick residents (Boulton 2011) versus the more varied and ambiguous accounts provided by residents of Lexington living outside of Kenwick.

Absent the social (and financial) investment of neighborhood residents in a specific place, outsiders participating in the Street-Based exercise drew on a broad repertoire of experiences and narratives in relating to and describing Kenwick. In common with neighborhood residents', their accounts referred in part to the "objective" visual elements of the neighborhood – the architectural style, the approximate street layout – but also to more sensuous and intangible qualities, such as perceived levels of safety, friendliness and so forth. Likewise, participants in the online exercise drew on and referred to landscape preferences in terms of idea(l)s and discourses extending beyond the geographical extent of the neighborhood and the textual extent of provided annotations. Locative media annotations within consumer mapping products therefore represent significant sources of and repositories for popular discourse on landscape. As I have suggested above, and as we argued elsewhere (M. Graham, Zook, and Boulton 2012) locative media are not innocent, irrespective of the veneer of openness and democracy appended to online social platforms, or the sometimes blinding twinkliness (cf. Kingsbury and Jones 2009) of Augmented Reality's novelty. Tracing the power-laden ways in which landscape and landscape aesthetics are reproduced and enacted increasingly involves paying attention to authorship and consumption of digital representations of place. Echoing Martin Dodge, for all of our (necessary) attention to individual narratives and practices of landscape, the question of power is always lurking: there is a need, he writes (Dodge 2010, 24) to "focus attention on describing *where* code

is working in cities, account for *how* it works and offer explanations of *whom* it works for”. It is for this reason that I raised with each of my participants (online and in person) questions of trust an authorship. As I suggest in section 8.2, the general credulity (there were exceptions) of locative media consumers is notable, especially in light of the rich, sensual experiences afforded by these technologies.

#### **6.2.1.1 Residential landscape aesthetics**

The most sustained and empirically developed account of landscape aesthetics is Nancy Duncan and James Duncan’s *Landscapes of Privilege* (2004). Their account of landscape aesthetics is set in the outer New York City suburb of Bedford, New York – a place of extreme wealth and a landscape in which a rarefied “old Bedford” pastoral idyll is fiercely protected, reproduced, and enforced through formal and informal social and political codes. The spirit of Duncan and Duncan’s conceptualization, which I adopt here, holds that landscape aesthetics is not universal, natural, or essential but spatially and temporally specific, “unavoidably embedded in various social contexts” (Schein 2003, 201). As such, a landscape aesthetic represents both a normative claim – “landscape ought” – and a visual, visceral disposition toward the materiality of particular landscapes that exceeds “individual interpretation” (201) Duncan and Duncan’s aesthetic exposé of Bedford offers a compelling illustration of the ways in which an American upper-class, landowning elite is able to secure, to more or less completely materialize, a particular landscape vision with all the social control that entails. That is, in Bedford, economically powerful actors hold sway in impressing upon the landscape their idealized landscape aesthetic by controlling, among other things, the very practical levers over the

materialization of particular landscape visions: planning and zoning (Duncan and Duncan 2001).

What makes the operation of aesthetics in an exclusive residential neighborhood such as Bedford remarkable is the level of success with which the aesthetic is secured. Or, from a slightly different angle, what is remarkable is the hegemony of the aesthetic or the near completeness of its materialization. But the clear implication of the Duncans' conceptualization of landscape aesthetics in conjunction with a landscape-as-discourse-materialized sensibility (a la Schein) and a commitment to exploring the material and imaginative significance of everyday landscapes (a la Lewis) is that Bedford is not unique other than insofar as it represents a particular coming-together of discourses, social relations, economic characteristics of place.

Conceptually, the same complexity in terms of overarching discourses and socioeconomic drivers is present in Kenwick (or anywhere else) as in Bedford even as the content of those potentially relevant discourses (pastoral idyllism, craftsman humility, sustainability, historic preservation), or the set of relevant discourses operating, varies between Kenwick, Bedford and other places. The conceptual and methodological point, though, is to place Kenwick, and north American cultural landscapes in general, within a common framework. That is, the significance of an aesthetic discourse lies in the ways in which individuals mobilize or work with/against normative understandings of place as they engage with the cultural landscape. In the case of a landscape aesthetic, the materiality of the landscape – the materialization of aesthetic discourse – is a key source and product of its operation: hence the importance of real property as a key determiner of the “successful” actualization of particular landscape preferences.



This success does not imply either the potential for complete aestheticization of place or that nothing outside the aesthetic, no points of tension, or no transgression of the aesthetic norm exists. Indeed, I would suggest that the presence of transgression from the normative aesthetic order – or a very real sense of the continuous possibility of transgression – produces the sense of mission and, above all, of insecurity on which the enactment of landscape aesthetics relies. Richard Schein's (1997) framework for interrogating landscape as discourse materialized, useful in many ways, here guided me toward the following observation: Discourses are always incompletely materialized through landscape; we – we the geographer or we the resident – can no more circumscribe the set of relevant discourses operating in and through a particular residential landscape than can we delimit the spatial, ideological, or historical content or extent of a particular discourse. Duncan and Duncan had a reason for including *The Politics of the Aesthetic* in the subtitle of *Landscapes of Privilege*. As one component of an overlapping and indeterminate polyphony of discourses drawing from and extending beyond the material landscape itself, the aesthetic is inherently political, contested, and enacted.

Thinking seriously about and addressing methodologically the ways in which landscape aesthetics are contested and enacted implies taking seriously parts of the more-than-representational theory critique of the privileging, even in post-structural landscape studies, of (textual) representation and rational analysis. Examining the visuality of locative media, and particularly the embodied practices of/with locative media, is central to this task.

### 6.2.1.2 *Aesthetics qua property ownership?*

I have argued elsewhere that the successful materialization of the landscape aesthetic is necessarily predicated on a proprietary conception of property ownership in which aesthetic concern extends beyond the private property line to the semipublic space of the street and the broader neighborhood. I stand by this basic claim, even as I call for a broadening of the purview of landscape aesthetics, within the cultural landscape studies framework I have outline thus far in this chapter. Property as a key vector through which landscape aesthetics are enacted (materialized) in the landscape is an important part of the landscape aesthetics story, but it is one that need not be privileged over the aesthetic preferences and experiences of others who become-knowledgeable in different ways, specifically through ambulatory or remote engagements with place via locative media.

The argument about the preeminence of real property in securing landscape visions proceeds thus (paraphrasing Boulton 2011): In the landscape-as-epistemology moment the landscape aesthetic may stand apart, heuristically, from the materiality of the landscape for example, in narratives, texts, traces, or unrealized disposition but it nevertheless relies on real property qua the tangible, visible scene for its successful articulation in and through everyday enactments and the built environment. The aesthetic is inherently material, as well as spatially and temporally specific. At its most basic level, the proprietarian aesthetic is partly about the view of, and the view from, one's property, which, in a dense residential neighborhood, necessarily entails the view of and the view from others' property too.

In addition to formal, legal code – literally, via zoning and development restrictions – the visual integrity of the idyllic scene is a product of, and produces, a particular proprietary

conception of property ownership (Blomley 2003; Blomley 2004; Blomley 2005; Blomley 2007). To specify more concretely what a proprietary model of property entails I note that stakeholders in the “old Bedford” aesthetic are concerned not only with their own private enjoyment of their own private land but also with securing – and enjoying – the fruits of a broader visual regime incorporating the view of and the view from their own and each other’s property. In short, theirs is an aesthetic – with a concomitant proprietary conception of property – experienced, in rather esoteric but suggestive language, as “teleological space” (Jakle 1987, 153). An aesthetic is constantly becoming, cumulative, continuously defended, and lived everyday as pedestrian streetscape, automobile vista, as “the view,” as a way of being/seeing, and as an immersive experience of “aesthetic satisfaction” that exceeds the visual (Howett 1997, 86). Thus, in Bedford newcomers attract scorn by erecting privacy fences and protecting their property via security gates. Nicholas Blomley’s work is important in examining the ways in which the balance of privacy – that which is asserted through the often literal building of personal, individual, and material boundaries – and proprietary orientations finds expression in the material landscape. In Bedford the assertion of privacy via security gates and fences runs counter to the dominant aesthetic, changing – visually obscuring – that aesthetic and, moreover, communicating an unwarranted fear of crime and a suspicious disposition toward the wider community that is exclusionary in all the wrong ways.

The types of proprietarian property enactments tied up with the materialization of an aesthetic have historically tended to be associated with individual and rather defensive – “proper” – claims to property (Blomley 2004). That is, proprietary claims to property –to

own, to defend, to protect, to improve property as rights held against others – necessarily imply an outside (and outsiders) excluded from the care, the order, and the ownership characteristic of the inside. The concept of defensible space, a staple of privatization discourse in the context of public versus private home ownership, is closely associated with an iteration of the proprietary orientation in which ordered and cared-for private homes are delimited from an unruly and dangerous public outside (Newman 1972; Hackworth 2005). Thus, the proper care of/for property can be and has been associated with private and individual claims to responsibility, control, stewardship, identity, and pride. Proprietary, versus private, conceptions of property are therefore far from radical, but they do, at least, recenter property from an individual claim to the exclusion of others’, to a more social set of practices conferring responsibilities toward and in relation to others (even if, problematically, those others are other property owners, sharing some set of commensurable values).

As Blomley (2007) points out though – and this might be the basis of liberal property’s “redemption” in a liberal/progressive moment – proprietary property attitudes can work in more communitarian ways, as a vector through which collective claims to ownership, identity, community, and, I would add, aesthetics are made. Blomley’s work on gardening in the suburbs of Vancouver is exemplary of this lens: Residents garden for, and in relation to, others’ efforts and make claims about proper use of private property and the correct “look” of their and others’ private property, while asserting individuals’ rights to privacy (Blomley 2004; Blomley 2007). Similar processes in Kenwick, I show, work in and through the front porch as a key site in the enactment of the proprietarian aesthetic. Shared aesthetic visions about proper style and appropriate taste therefore work

in and through landscapes seemingly far removed from the extreme, elite landscapes of gated communities, wealthy historic districts, and the idyllic rural commuter-belt (Duncan and Duncan 2004). I might go so far as to suggest, therefore, that processes of gentrification that proceed – albeit in a charitable enframing – relatively consensually in the absence of outright and explicit displacement can scarcely be understood without reference to proprietary conceptions of property, contained within and exceeded by a landscape aesthetic. Alternatively, we might suggest that a qualitatively different, or at least more complex, kind of gentrification proceeds not only through the “pricing out” of previous working-class residents but also through an evolving social-aesthetic displacement.”

### **6.3 A Kenwick Bungalow aesthetic<sup>29</sup>**

In order to examine the ways in which non-residents’ stories about the neighborhood’s aesthetic qualities corroborated or diverged from residents’ expressed preferences, it is helpful to establish some aesthetic baseline. Methodologically, establishing such a “Kenwick bungalow aesthetic”, a kind of stable, agreed upon aesthetic essence for Kenwick’s residents, against which to compare the expressed preferences of individuals exploring the neighborhood via a) Google Maps, Street View and selected sets of placemarks and b) an augmented reality Layar application is clearly problematic. As I note elsewhere: an “antimodernist conception of aesthetics rejects essences and stable cores. Indeed, within this framework asking what the bungalow (aesthetic) is does not

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<sup>29</sup> This section draws heavily (but not verbatim) on material published in Boulton (2011) but initially developed for this dissertation.

make sense. Rather, I wonder how a particular spatially and temporally specific iteration of the bungalow aesthetic, [works] as a normative claim to place” (Boulton 2011).

In Kenwick the “typical” bungalow architectural style is Craftsman. In *Discovering the Vernacular Landscape* J.B. Jackson (Jackson 1984) attributed the origin of the sign (and to some extent, the style) Craftsman to architect and furniture designer Gustav Stickley. The bungalow can be traced genealogically from India, via England, to North America and Australia, where it appears in its California, Craftsman, Prairie, Chicago (and other) iterations beginning in the early 1900s through the 1930s (Rubin 1977; W. Miller 2007). Clay Lancaster’s *The American Bungalow, 1880-1930* (1995) presents an excellent, if teleological and celebratory, account of this history of the humble, everyman home. An important development, of course, in the Craftsman story—and the way in which an elite aesthetic movement of finely (and expensively) crafted homes by architects such as Frank Lloyd Wright becomes central to the imagination of a middle-class neighborhood in Kentucky—is the leap from craftsmanship to Craftsman; that is, the popularization of Craftsman homes into a modest, widespread house type. The architectural establishment sought to disown this “violent architectural epidemic” before ultimately embracing it (Rubin 1977, 527).

This popularization of the Craftsman style manifested itself most visibly in the pages of Sears, Roebuck and Co. catalogs, where people could buy their own piece of the American dream, in a crate, with step-by-step self-assembly instructions. A 29 year old female survey respondent describing herself as having “very limited or zero knowledge” of Lexington’s neighborhoods, but provided with the amenity-centric placemark set remarked that:

“[Kenwick is] a neighborhood with trees and affordable, older homes with character. It reminds me of my old neighborhood in South Ft. Thomas where we had lots of “Sears” homes and many trees”

Two other survey participants offered similar comparative descriptions of the neighborhood’s visual qualities, making reference to landscape ideals (or at least familiar points of reference):

Every house is unique but they all have the same “solid” look, similar to my neighborhood (Rosemont) as far as type.

A mix of some Seattle-style houses and regular older ranches like the Highlands [Louisville] where I grew up.

Describing the neighborhood “the kind of neighborhood you find in every city”, street-based interviewee Zak, 23, a recent Political Science graduate, noted that

most cities have [these kinds of neighborhoods] – a village feel, closer to downtown but a neighborhood. Decatur, Georgia reminds me of this same look and age... Small and neat craftsmans [sic] from when the street cars came in. More wholesome than the average subdivision [laughter] – crunchier<sup>30</sup>.

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<sup>30</sup> “Crunchy” is slang typically used to refer to “green” or otherwise left-wing, environmentally active, etc. individuals. It is notable, given the anti-modernist sensibility associated with the craftsman architectural movement (Lewis 2003), that this respondent associated the aesthetic quality of the neighborhood with particular assumptions about the socio-political values of its residents. Zak was one of only two participants to make explicit reference to the (presumed) political predilections of the neighborhood’s

In the first decades of the twentieth century, magazines such as *The Craftsman* marketed to a mass audience the very values of uniqueness, quality, and craftsmanship, discursively antithetical to a mass-produced subdivision home. Prefabrication nevertheless allowed for customization, and in the form of local quirks the United States became, in parts at least, a “bungalow nation” (Miller 2007) – the kinds of “characterful” neighborhoods valorized by many of the survey and interview participants as well as Kenwick’s residents.

Today, according to various celebratory sources, the bungalow is undergoing a revival (if it ever went away). The craftsman home is a powerful motif in popular culture, perhaps akin to the powerful “connotations of continuity” Meinig identifies as appending to the New England village within the American geographical imagination (Meinig 1979b, p. 165). The close-knit, working class Chance family in the hit sitcom *Raising Hope* lives in a (somewhat rundown) Craftsman bungalow, a backdrop to their unconventional if heteronormative home life. Their supposed economic hardship is set in stark contrast to occasional flashbacks in which the grandmother is transported back to her early married days, a besuited husband drinking coffee and smoking a cigarette surrounded by gleaming hardwoods and practical built-ins. The continuity and nostalgia in such scenes hint at both the humbleness and solid, even elegant, potential of the craftsman home.

Perhaps unsurprisingly, the neighborhood residents with whom I spoke were fairly knowledgeable about (or at least correct in their identification of) the architectural traits

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residents based on its visual appearance, though Judy’s pejorative “hippies” comment (section 6.4) was, perhaps, a less nuanced commentary.



of the neighborhood. Indeed, the craftsman bungalow branding for the Neighborhood Association – an outline drawing of a classic, front-dormered bungalow – is fairly well established, appearing on frequent mailings from the Association as well as online and print materials related to the annual or biennial Bungalow Tour.

I interviewed the designer of Kenwick Neighborhood Association’s logo, a long term resident of the neighborhood, about the neighborhood’s iconography. For Sally, as for a number of other participants, it was important that the neighborhood should be characterized in terms of its dominant, and appropriate architectural style:

AB: Why did you select that image for the logo?

Sally: it represents the predominant housing style that emerged after the neighborhood was established [and] both the history of the neighborhood and way of life

Thus, bungalow architecture is a sign with a “heavy encumbrance” (cf. Boulton and Zook forthcoming) of emotional/affective connotation. That is, while, the icon stands in for the physical appearance of neighborhood homes in general, it also stands in for a normative claim to a less tangible way of life, indiscrete from the characteristics of the built environment. What the logo, less controversially, represents is a particular kind of claim to identity and representativeness wherein the link between the ideal image and material reality is straightforward: a particular reading, as well as self-conscious writing of the underlying material landscape. So I asked, “Where is that bungalow?” in Kenwick. I clarified that I was asking about the location of the particular house depicted. The logo designer told me a story about how, with changes in the neighborhood association, and in

authorship of its Web site, the link between the logo and the actual bungalow was broken. A low-resolution image was all that remained: “I have looked for the house in the logo but have yet to find it.” Without being overly glib, not finding is central to searching for the aesthetic, working for an aesthetic, and always incompletely materializing that aesthetic. Meinig conceptualized this relationship between image and the material landscape as one between the ideal and the real, arguing that the power of a landscape idea(l) – normative claim to place – such as the New England village or the California suburb (or the bungalow neighborhood) is both embedded in and exceeds specific, actual places (Meinig 1979).

### **6.3.1 Residents’ aesthetics**

When I interviewed Kenwick residents about their neighborhood, the aesthetic stories they told were remarkably consistent not only with each other’s, but with a more generalized valorization of architectural quality, community, history and sustainability that I termed the Kenwick bungalow aesthetic. That individuals, mostly property owners, who chose to make Kenwick home should express a shared aesthetic sensibility is unsurprising, even as we are drawn to think about the broader discursive contexts in and through which such passionate dispositions towards craftsman architecture, the historical, the “humble”, etc. are framed in the context of a liberal property-ownership arrangement.

As Rita told me:

Some sources such as *American Bungalow* magazine are more broad with the term ‘bungalow’ and like to include homes with . . . smaller efficient floor plans, quality design and craftsmanship, indoor and outdoor ‘living spaces’; that is, porches. In the broader sense, many homes here are bungalows. I think these homes were

about the practicality of having what you need in a well-crafted and beautiful home, without being excessive.

(quoted in Boulton 2011, 235)

In a conversation with local businessman/resident David, I (AB) asked about the definitive characteristics of the neighborhood:

David: Right here [the first block] is the high-dollar neighborhood. Fifteen years ago nobody wanted to buy here but it's gone crazy.

AB: Why would that be?

David: I guess because it was cheap but you get good, solid house for less than a subdivision.

AB: What are the houses like?

David: Bungalows. Different kinds of bungalow. Smaller, older homes. The architecture is amazing, the detail.

AB, pushing him: What detail?

David: They don't look like much to some, I guess, but they don't build them like this today. The porch is the main thing. . . . This one here [pointing] is a typical bungalow. It's got the porch, the gable. Look at the columns. Solid. See the windows. You know how I can tell they're original? [Describes the windows.] I like the way they sit in the street, they don't draw attention to themselves. The colors. Some of them are brighter colors, or some are brick but they just fit in. The homes fit together. It gives a sense of community."

Other residents talked about the definitive characteristics of the neighborhood in terms of the architectural characteristics of its homes:

Jill:

I like that I can see into my neighbors' yards. Their homes are so pretty.

Mark:

Their [our neighbors'] porch will be so pretty when they're finished stripping that awful plastic siding.

Jay:

My favorite part of the neighborhood, from an aesthetic perspective, are the first blocks of Victory and Richmond avenues. Both have many diminutive homes that are well kept and colorful, and many of these also have interesting gardens and front porches.

These passages bring out the more-than-visual nature of an aesthetic that has as much to do with a way of life and a social milieu as it does a strictly visual regime or architectural ensemble. I would emphasize though that there is no clear division between the visual elements of an aesthetic and the more-than-visual sensuousness of its enactment. To posit such a delineation is to affirm the occularcentric of a privileged hegemony of vision (Ingold 2000) in which a rational, seeing mind supersedes a grounded, perceiving body (cf. Ingold 2010). The visual qualities of the neighborhood, as evidenced by the handful

of online participants describing the neighborhood as “friendly”, “neighborly” and even “a great place to hang out!”, entails a point of entry and not a rationally perceived destination within a “multidimensional world of intertextual dialogism” (Shohat and Stam 2002).

When they talked about socializing with neighbors, the pretty front porch was the stage; the friendliness of the neighborhood was not purely a social quality of its residents. The visual appearance of the neighborhood was evocative of and conducive to particular (positive) social interactions, which were described by residents by way of anecdotes/examples, such as:

We like the scale of the neighborhood and proximity to neighbors. We spent over a year looking for our “dream home” and finally found it. Little did we know that we would meet most of you neighbors out on the porch within a few hours of moving and even received coffee cakes. How idyllic! Our neighbors are wonderful people, all in different ways. All their homes are equally unique and interesting, inside and out. I cannot say we have lived anywhere else where we have been so close with our neighbors

Thus a “sense of neighborhood” and community inheres in the material landscape – the “nicely detailed homes” – and in the act of sitting and interacting on/from the porch. The porch comes, arguably, to stand for social and physical proximity and, more generally, neighborly interaction.

### **6.3.2 Outsider aesthetics: Online neighborhood exploration**

If Kenwick's residents exhibited a consistent level of knowledgeability about their neighborhood, drawing on common enframings of the social character of the community (friendly, tolerant, diverse) and the commensurable qualities of its built environment (humble, neat, historic, etc.), outsiders – my survey and interview participants – expressed a far broader range of views.

I would stress that the Kenwick residents with whom I spoke are not necessarily representative of the entire Kenwick community (defined geographically) so much as representative of a subset of residents who vocally and actively enact a particular aesthetic code and associated lifestyle. It is unsurprising to find a low level of dissent, within this group, from established narratives and normative framings around the aesthetic and other qualities of the neighborhood. Although there are, as I have argued (Boulton 2011), specific iterations of a bungalow aesthetic operating (through real property and social networks) within Kenwick, a more generalized valorizing in an anti-modernist, ecologically sustainable, reactionary (etc.) moment of the old, the historical, the characterful and the humble is a motif that runs far wider than Kenwick (Lewis 2003). The type of historical preservation, sustainability and other arguments expressed by Kenwick's residents find expression in the valorization, preservation and revitalization (gentrification) discourses surrounding communities far less (and more) modest than the middleclass Kenwick. As such, the insider aesthetic discourse expressed so consistently by the neighborhood's residents had clear resonances with the understandings of survey respondents who found sufficient evidence in the visual and textual clues provided by way of placemarks and Street View imagery to make statements such as:

“...offers a range of historic Craftsman homes”

“...group of nice bungalows”  
“eclectic...lots of character”  
“artistic craftsmen style little neighborhood”  
“older bungalows with character”  
“very eclectic with lots of energy!”

Context matters. Each of these statements was made in response to a single question: “if you were to describe the neighborhood to a friend, what would you say?”, and, in common with neighborhood residents, it was the architectural style of the housing that figured centrally in these responses. Several other respondents made specific reference to neighborhood’s architecture (versus urban form or mere “age”, as I set out in the “code book”; see section 5.9.1), but the level of architectural “literacy” was variable. Thus, in response to this same question, three respondents stated:

“Typical 1950’s and 1960’s houses in urban sprawl. Don’t go there”  
“old 1940s ranches, some not updated”  
“typical exurban postwar bleh”

Thus, there was significant opposition among survey respondents to the relatively stable notion among neighborhood residents (and the “outsiders” exploring the neighborhood in person) that the neighborhood is aesthetically appealing. Some 14% of respondents provided with the aesthetic-themed annotations described the neighborhood’s architecture

as the worst feature, compared with zero participants in the amenity-themed group and 4% of the plain/baseline group. Thus, while participants exposed to placemarks highlighting normatively attractive craftsman-style homes, of the type recognized/valorized by neighborhood residents, were more likely than others to identify these homes' architecture as a key neighborhood asset, they were also more likely to identify architecture as the neighborhood's worst feature (Table 6.2). As such, we see a potential effect whereby the participants were more likely to mention as important themes highlighted in the provided annotations, even when the reaction to those themes differed.

It is significant that when asked to describe a neighborhood, without further guidance, some 18% of the 127 respondents to this question chose to include some commentary about the architectural style of the neighborhood (Table 6.1) – whether or not their reading was technically correct. The only topics mentioned more frequently in this most open-ended of questions were “care and maintenance” – whether in positive or negative terms – (18%) and the age of buildings (35%), including a handful of respondents who touched on all three topics. As evidenced in the responses highlighted above, and contrary to the findings among neighborhood residents and the (arguably somewhat self-selecting) interviewees, the level of knowledge of a fairly ubiquitous housing style and associated urban form was somewhat variable even among survey respondents who voluntarily offered their characterization of the neighborhood's architecture in response to an open ended question.

It is common in studies of neighborhood residents' self-definitions of a neighborhood's extent to draw on architectural markers of boundaries (as we have seen in the case of my work with residents in Kenwick). For example, Meghan Ashlin Rich's (2009) work on



racial integration in Maryland found that, secondary to “diversity” and the “feel” of the neighborhood “the neighborhood’s architecture [and] proximity to downtown and other desirable neighborhoods were other common responses to first (mostly positive) impressions of the neighborhood” (Rich 2009, 387) as reported by neighborhood residents in a series of semi-structured interviews. Similarly, spatial syntax literature – a method of modeling, and predicting movement within cities, particularly focused on pedestrian, traffic and crime densities (cf. Ratti 2004) – following Lynch’s work on the “imageability” and “legibility” of coherent places of definable “identity” (Lynch 1960, 119) recognizes architectural style as a central “definition of place” (Dalton 2007, 1) used by individuals in navigating and comprehending urban environments. Thus, although we might problematize how (and for whom) architectural style becomes the definitive characteristic of a neighborhood, there is an established literature suggesting that, in the popular imagination, neighborhood extent and feel are related closely to material, architectural features.

The table below summarizes the responses to the *initial* open-ended neighborhood description question.

**Table 6.1.** Coded responses to open-ended neighborhood description question

<b>Coded theme</b>	<b>Remote-Based interface</b> (surveys)	<b>Street-Based interface</b> (interviews)
<i>Participants provided with aesthetic-themed annotations</i>		
All themes	58	10
Architecture	14*	10
All aesthetic (inc. architecture)	31	10 <sup>+</sup>
<i>Participants provided with amenity-themed annotations</i>		
All themes	56	10
Architecture	5	8
All aesthetic (inc. architecture)	28	10 <sup>+</sup>
<i>Participants provided with plain/baseline map (no annotations)</i>		
All themes	66	
Architecture	8	
All aesthetic (inc. architecture)	33	

\* Result significantly different from plain/baseline map result.

<sup>+</sup> Because follow-up questions were used in the interviews to expand upon themes raised in initial “grand tour” questions (and because the phrasing of questions varied between interviews), I counted, here any interview respondent mentioning these themes when *first asked an open-ended question* about their overall impression of the neighborhood. All

participants subsequently engaged the topic of architecture at some point during their interviews.

Comparing the aesthetic map with the amenity map, the difference between the number of mentions of aesthetic topics among Remote-Based participants (14 versus 5) is significant at the 10% confidence level<sup>31</sup>. The overall number of responses coded was not significantly different between the three groups suggesting that the content of participants' descriptions, and not their willingness/ability to offer a response was impacted significantly by the content of placemarks provided. This pattern was repeated in response closed questioning requiring agreement/disagreement with specific statements about the amenities and aesthetic qualities of the neighborhood.

**Table 6.2.** Responses to closed best and worst feature of neighborhood questions among survey respondents.

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<sup>31</sup> A Z-test of difference in proportions was carried out ("two-proportion z-test"). The Z-test assumes random, independent sampling.

<b>Coded theme</b>	<b>“Best” feature</b>	<b>“Worst” feature</b>
<i>Participants provided with aesthetic-themed annotations</i>		
Architecture	16%	14%
All aesthetic (inc. architecture)	43%	48%
<i>Participants provided with amenity-themed annotations</i>		
Architecture	12%	0
All aesthetic (inc. architecture)	36%	28%
<i>Participants provided with plain/baseline map (no annotations)</i>		
Architecture	11%	4%
All aesthetic (inc. architecture)	49%	37%

When asked to describe the “best or most desirable” feature of the neighborhood, there was no significant<sup>32</sup> difference in the numbers citing architectural characteristics between the three groups of Remote-Based participants (minimum  $p=0.36$ ) although more participants exposed to the architecture-themed annotations identified architectural features compared with participants in the other two groups. In terms of references to aesthetics in general, more respondents exposed to the aesthetic annotations mentioned these characteristics than did those exposed to the amenity annotations. Perhaps more interestingly, significantly more people from the former group identified architectural and aesthetic features as “the worst or least desirable characteristic” of the neighborhood. This finding lends further empirical credence to the notion that while viewers of these

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<sup>32</sup> Significance refers to statistical significance at the 10% level ( $p < 0.1$ ) unless otherwise stated

maps were more likely to comment on architectural aspects of the neighborhood when provided with placemarks emphasizing these features, the placemarks were not necessarily read as straightforwardly positive.

The Street-Based participants, as I have mentioned, tended to draw on common, largely positive, descriptions of the neighborhood's character and appearance irrespective of the annotations provided. However, in common with the offline participants there was a noticeable effect in which (while engaging the neighborhood's architecture in detail) participants given the architecture-themed annotation set appeared willing to contradict the normatively positive claims made within those placemarks. Where a placemark on Richmond Road asserted the significance and charm of a particularly normatively attractive bungalow (Figure 5.14, page 188), a survey respondent said

The houses seem small and in need of some TLC. The bungalow tour houses on Richmond road are unremarkable if these are the best the neighborhood has to offer

Indeed, this was a rare example in which a survey respondent explicitly, verbally rejected the assertion of a provided placemark (the more general disapproval of the neighborhood on the part of a handful of residents notwithstanding). Although this response raises the (welcome) specter of critical consumption of locative media annotations, it nevertheless implies the engagement of the consumer with the provided representation “on its own in terms”. That is, the response challenges the assertion of the architectural-aesthetic quality of the particular home highlighted even as it engages with precisely the architectural-aesthetic theme flagged by the annotation at this specific location. (It does not refer, for

example, to the economic, racial, political or any other characteristics of the neighborhood's residents – or, for that matter, the arguably even less “remarkable” homes elsewhere in the neighborhood.) A similar kind of engagement with the annotations can be read from my interview participants' responses too, a handful of whom contradicted a placemark's claims to significance, even as their responses worked within the same discursive territory (see section 8.2). As I discuss in section 8.2, therefore, it is significant to note that in both Street-Based and Remote exploration, the content of placemarks was engaged more-or-less critically by a range of participants.

While it is relatively straightforward to extract these occasional examples – from survey responses – in which participants rejected or contested in explicit, verbal terms the claims made in specific placemarks, the responses to closed “rating” questions in the survey offer valuable insights too.

We should note that the rating questions did not ask for participants' agreement/disagreement with the claims of specific placemarks, but rather with qualitative statements about the nature of the neighborhood in general. On a series of questions related to the aesthetic quality of the neighborhood, the survey recorded significant differences in attitudes amongst the aesthetic-themed placemark group compared with the baseline group (the group receiving an annotation-free Remote Interface). Similarly, when questions were asked about the amenity value of the neighborhood, those participants exposed to the amenity-themed placemark set were correspondingly more willing to express an opinion about the amenity-value of the neighborhood compared with the baseline group.

For example, on the question of architectural preference all participants were asked to agree or disagree with the statement: “This neighborhood seems to have interesting architecture” (Table 6.3).

Significantly more people in the aesthetic-themed placemark group agreed with this statement compared with the baseline group. Moreover, the difference between the aesthetic-themed group and the amenity-themed group was also significant. I conclude from this that there is no significant “placemark effect” whereby the mere presence of (any) placemarks correlates with users’ willingness to form value judgments about a place. Rather, we can conclude that the *content* of placemarks is significantly related to participants’ willingness to express an opinion. Simultaneously, 30% of respondents in the aesthetic-themed group disagreed with the statement, compared to just 18% of the annotation-free group and 12% of the amenity group, although this result was not statistically significant. That is, when provided with annotations emphasizing architectural characteristics, participants exposed to those annotations were more likely to offer *an* opinion on the neighborhood’s architecture whether tending to agree with or to contradict the annotations’ assertions.

**Table 6.3.** Responses to “this neighborhood seems to have interesting architecture”.

	<i>Participants provided with aesthetic-themed annotations</i>	<i>Participants provided with amenity-themed annotations</i>	<i>Participants provided with plain/baseline map (no annotations)</i>
Response rate	80%	72%	70%
<b>Agree (strongly)</b>	66%* (58%*)	40% (21%)	49%(29%)
<b>Disagree (strongly)</b>	30% (16%)	12% (2%)	18% (9%)
<b>Neutral</b>	4%	44%	31%
<b>Can't tell</b>	0%	4%	2%

\*statistically significantly different from baseline. Note: “strongly agree” and “agree” are aggregated to “agree”; “strongly disagree” and “disagree” are aggregated to “disagree”. Percentages are percentages *of responses* not of participants.

Thus, the survey lends corroboration to the notion that, all things being equal, users of a Street View-based Remote Interface will tend to focus on those locations and features in the landscape highlighted by annotations. However, the participants viewing aesthetic-themed annotations were more likely on aggregate *both* to agree and to disagree with the normative claims of the annotations. The net level of agreement (the difference between the “Agree” and “Disagree” group) is not significantly different between the aesthetic-themed group and the other two, but the number of respondents expressing a non-neutral/non-refusal opinion is significantly greater. Furthermore, the strength of agreement (and disagreement) was greater for the aesthetic-themed placemark grouping than for the baseline group. Thus, whether they agreed or disagreed that the architecture



highlighted by the placemarks was “interesting”, none of the 50 respondents given the aesthetic-themed placemark stated, explicitly, that they were unable to reach a decision, compared to the baseline and amenity-themed groups in which a handful stated that they “can’t tell”, and a further 31% and 44% respectively claimed a “neutral” response. (Taking into account the response rate, the certainty gap – the willingness to express *an* opinion on the basis of material provided – widens further between the baseline group and the aesthetic-themed group although the difference is not statistically significant in this case.)

Turning to questions of historical significance and whether “people take care of their homes”, there were significant differences in agreement between the aesthetic-themed group and the baseline group. Again, in each case, the level of *disagreement* was also greater (though never significantly so) on each of these measures. The results from these specific questions are consistent with the “interesting architecture” answers outlined above.

The second set of qualitative rankings in the survey referred to amenity-themed neighborhood attributes. Participants were asked to agree or disagree that the neighborhood was well-served by i) grocery stores and ii) public transportation.

**Table 6.4.** Responses to “this neighborhood seems to be well-served by grocery stores”

	<i>Participants provided with aesthetic-themed annotations</i>	<i>Participants provided with amenity-themed annotations</i>	<i>Participants provided with plain/baseline map (no annotations)</i>
Response rate	88%	86%	84%
<b>Agree (strongly)</b>	26% (16%)	58%* (20%)	59% (18%)
<b>Disagree (strongly)</b>	36% (12%)	12% (2%)	18% (9%)
<b>Neutral</b>	30%	28%	20%
<b>Can't tell</b>	8%	2%	3%

\*statistically significantly different from aesthetic-themed map. Note: “strongly agree” and “agree” are aggregated to “agree”; “strongly disagree” and “disagree” are aggregated to “disagree”. Bracketed value is “strong” agreement/disagreement.

**Table 6.5.** Responses to “this neighborhood seems to be well-served by public transportation”

	<i>Participants provided with aesthetic-themed annotations</i>	<i>Participants provided with amenity-themed annotations</i>	<i>Participants provided with plain/baseline map (no annotations)</i>
Response rate	82%	88%	80%
<b>Agree (strongly)</b>	35% (20%)	60%* (34%*)	38% (10%)
<b>Disagree (strongly)</b>	42% (12%)	30% (12%)	18% (9%)
<b>Neutral</b>	15%	10%	36%
<b>Can't tell</b>	8%	0	8%

\*statistically significantly different from aesthetic-themed map. Note: “strongly agree” and “agree” are aggregated to “agree”; “strongly disagree” and “disagree” are aggregated to “disagree”. Bracketed value is “strong” agreement/disagreement.

On the grocery store question (i) and the public transportation question (ii) there was a significant difference between the amenity-themed group’s responses and the aesthetic-themed group’s responses with significantly more of the former group agreeing that the neighborhood is well-served by stores and public transportation. Three placemarks from the set of 20 explicitly identified grocery stores (Table 5.4), with additional labels for neighborhood businesses. However, a slightly greater proportion of those participants given access to the plain/baseline Interface agreed that the neighborhood was well-served by grocery stores, although the difference between the amenity-themed group’s responses

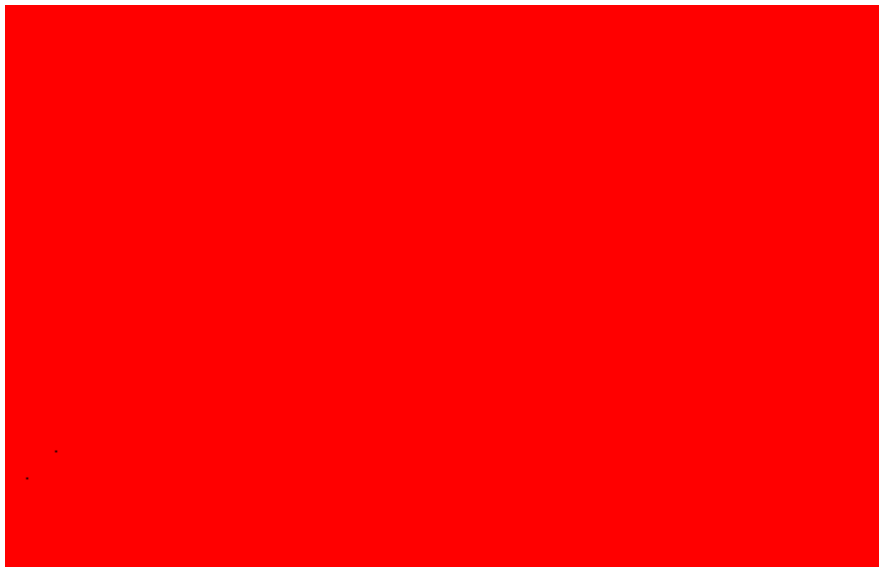
and the baseline/plain group's responses was not significant. A possible explanation for this is that Google Maps, by default, contains an increasingly wide, if inconsistent, array of labels. From a development perspective – i.e. creating a custom Google Maps interface for a research project such as this – it is impossible to remove labels for certain features, notably street names, but often including businesses deemed by Google to be worthy of being embedded in the base map. As such, grocery stores were one of just a handful of features (the church, a computer repair business) labeled for viewers of the baseline map at points throughout the data collection process<sup>33</sup> (see Figure 6.1 and Figure 6.2).

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<sup>33</sup> Following the completion of this study, the release of Google Maps API version 3 offered developers additional controls over the display of Google Maps, including the ability to restyle (and thus, hide) default map labels. It should be noted, however, that the mapping interface used for the plain/baseline group resembles the standard Google Maps experience in which placemarks with colorful markers are absent unless or until a search is performed or a specific street address is selected. I would anticipate that as the online presence of neighborhood businesses, home-based businesses and other “significant” locations within the neighborhood increases, the standard Google Maps interface will continue to include greater numbers of annotations. Thus, the “plain” map resembled the extant standard Google Maps interface devoid of user-generated placemarks (the default “labels” being visually less prominent than placemark icons) but it should be recognized that Google Maps is a continuously moving target.



**Figure 6.1. September 8, 2012:** The Google Maps base map showing a label for “Victory Christian Church”. Note the label for Wilson’s Grocery is absent .



**Figure 6.2. June 16, 2012.** In the standard Google Maps interface, selected labels identify key locations irrespective of the users’ search. Note, here, the label for Wilson’s Grocery Meat store.

### **6.3.2.1 Consistency afoot?**

A significant finding is the variability between the relatively consistent aesthetic evaluations of neighborhood insiders (residents) versus the more variable evaluations of outsiders (research participants). But arguably, the more significant finding is the contrast between the consistency of aesthetic evaluation among in-person participants (irrespective of residence), and the variability of aesthetic evaluation among online-only (Remote-Based) explorers.

Earlier empirical studies of locative media use in a broadly tourist context, as I mentioned above, have tended to compare navigational outcomes between locatively mediated participants and paper-based groups. The comparison here between remote versus on-site exploration of landscape, with the use of locative media annotations in both cases, is a useful expansion of this type of work, as is the introduction of qualitatively different sets of annotations. On the question of differences in perceptions and narratives between the two sets of Street-Based participants provided with different annotations, the semi-structured interviews deriving from the Street-Based exercise provide evidence to suggest that the content of annotations were related to differences between participants' reported experiences within the neighborhood.

The presence and content of locative media annotations constituted important resources for individuals seeking to navigate through and gain an understanding of the neighborhood. And although such clear quantitative comparisons between the two Street-Based participant groups – the amenity and architecture groups – can not be drawn as between the discrete Remote Interface user groups, there is some evidence tending to corroborate the idea that the relative content of provided annotations – and not merely the

existence of annotations per se – significantly impacted participants’ reported perceptions of the neighborhood. For example, of all twenty participants asked, after their walk, to talk about their favorite aspects of the neighborhood, only two mentioned specific amenities<sup>34</sup>, but both of these interviewees mentioned locations highlighted specifically in placemarks.

Interestingly, Sean, 24, whose walking route incorporated only Wilson’s grocery – the exercise’s start point – nevertheless commented that:

the groceries [are the best feature], I would say. There’s Wilson’s here and a handful of others scattered through which you can’t say for many places these days.

Thus, we can suggest that, in Sean’s specific case, the combination of seeing a grocery store, combined with the annotations’ assertions that other (presumably similar) stores existed elsewhere in the neighborhood, was sufficient to create a perception that a wealth of grocery store options existed.

Perhaps even more marked evidence that (some) participants vested a great deal of trust in the assertions made by the content of placemarks emerged from my conversation with Ella, 23, a resident of downtown Lexington, who was particularly impressed by Kenwick’s public transportation access – a trait emphasized/suggested by a handful of placemarks highlighting bus stops and the route of (what was at the time) an occasional trolley service:

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<sup>34</sup> Several participants made more general references to walkability, proximity “to everything” and so forth.

Ella: Public transportation is awesome on this side of town. I never knew that!

AB: Awesome, how so?

Ella: the buses and the trolley. I love the trolley! I love that it comes through –

AB: – did you see it?

Ella: huh?

AB: the trolley?

Ella: no, I guess... no, I saw its route and the bus stops.

No other participant mentioned public transportation as their favorite neighborhood characteristic, although a handful of participants in the amenity-themed group mentioned public transportation, in passing, as they described their routes through the neighborhood as passing by bus stops. By contrast, the only reference to public transportation among the architecture-themed group came from a participant claiming to have been almost hit by a bus on Richmond Road. Unlike for the amenity group, the presence/availability of public transportation did not warrant mention as a major positive (or negative) feature of the neighborhood for any architecture-group participant. Furthermore, in describing their routes through the neighborhood, none of the architecture-themed participants mentioned passing bus stops, even though, in all cases, the routes taken encompassed at least one (usually several) bus stops, and even though these participants made reference to themes/annotations highlighted in those vicinities. Thus, in this case, those participants exposed to placemarks directly related to a particular topic – public transportation



availability – were more likely to make reference to that topic than were participants not exposed to that theme. Annotations identifying bus stops were more significant to my participants’ understandings of the neighborhood, in this context, than were physical bus stop signs. Indeed, absent a set of annotations highlighting bus and trolley routes – or an all-too-material close encounter with a passing bus – the only participant from the architecture-themed group to mention public transportation did so by way of noting its absence, that “[neighborhood residents] would need a car to get around unless you love long walks”.

None of this is intended to suggest that individuals’ exploration of the neighborhood was determined by annotations alone, or that participants unquestioningly accepted the assertions of placemarks. However, the public transportation example offers a strong piece of evidence in favor of the notion that in the context of street-based exploration of an unfamiliar place, locative media annotations work to frame engagement with the materiality of landscape in significant and measurable ways.

### **6.3.2.2 *Google Street View and neighborhood evaluation***

“This exploratory study indicates that Google Street View can be used to audit neighborhood environments”

(Rundle et al. 2011)

We can look to an emerging set of cross-disciplinary studies in which Google Street View is tested or proposed as a tool for neighborhood audits for additional methodological considerations and empirical findings within which to situate the present

study. Not only are researchers interested in the idea that Street View “can be used”, as Rundle and colleagues state, but how it can be used and what the methodological problems might be in doing so. It is unsurprising that Street View should appeal to municipalities and researchers alike in need of relatively quick and inexpensive audits of neighborhood features. The methodological concerns (around accuracy, cost-effectiveness and feasibility for example) in such cases vary, in some ways, from critical geographic questions (around representation, embodiment and aesthetics for example), but there are also clear points of intersection.

At the most basic level, neighborhood audits conducted under the auspices of public health, service provision, and urban governance share with cultural geographers a fundamental interest in *how* we can know about places. For such instrumental purposes as counting grocery stores, measuring distances, locating street lighting/furniture, and auditing sidewalk accessibility, we know by seeing, by counting, and by recording in line with codified procedures. In person, viewing protocols ensure consistent application of audit methodologies: walk, inspect, document, each according to more detailed, stylized and repetitious actions. Explicitly trained in the correct ways of seeing, multiple passes through an urban place by multiple disciplined individuals produce remarkably consistent findings (for example: McGuire 1997) – reproducibility of outcomes being the aim of such a scientific method. It matters little whether the data collector is male, female, black, Asian, government-employed or a neighborhood volunteer; subjective judgment, experience and engagement are necessarily elided in the production of actionable spatial data (cf. Wilson 2011). In a “hopeful” suggestion, Rundle and colleagues (2011) suggest

that, because in-person audits “expose auditors to distractions” – such as people! – Street View holds open the prospect of greater validity, defined as inter-auditor consistency.

How we can know about places is, of course, a huge question. In a highly suggestive phrase, and indicating the need to attend to the embodied, processual nature of becoming knowledgeable Tim Ingold argues that “we know as we go” (Ingold 2011). The phrasing is not inconsistent with the more-than-representational focus on the affective, embodied experience of landscape (for example, section 5.2.1.3). But Ingold is persuasive, I think, in insisting on the significance to knowledge-making, to becoming-knowledgeable, of the very act of walking itself. Distinguishing his work from the contemporary anthropological “cliché” of embodiment (Ibid., 115) – wherein the material environment is an external thing with which the body interacts, possibly invoking psychological responses – Ingold stresses the oneness of bodies and places. That is, distinct from more-than-representational theorists’ socially vacant places of material stimuli, Ingold’s places bear the impress of bodies at work/in motion even as they constrain and engender particular bodily orientations/behaviors.

Even for instrumental audit practices requiring the production of codified data with specific, objective parameters (cf. Rundle et al. 2011) purely online exploration is potentially deficient vis-à-vis in person analysis. For example, whereas the quality of sidewalks – their width, the smoothness of the terrain – is readily ascertainable on foot, in online-only explorations these characteristics require the development of specific viewing protocols. As Rundle and colleagues explain, although pedestrian-friendly curb-cuts were (upon careful viewing) visible within Google Street View, auditors missed – or inconsistently noticed – those cues if they failed to adhere to very specific

zooming/panning actions within the browser. As such, they conclude, even in these very specific cases, certain *visual* characteristics of the neighborhood are impractical or impossible to measure. This, of course, is quite apart from those characteristics of the neighborhood that might vary with time of day, season, etc. (to say nothing of the non-visual and subjective variability of places that far beyond the measurable/quantifiable dimensions of interest to Rundle et al.).

One might suggest, though, that it is only by degree that the disciplining requirements of a neighborhood audit differ from the casual, free-form online exploration implicit in every day interactions with Street View emulated in this study. Indeed, any particular technology and specified task – measure walkability, describe a neighborhood, choose a restaurant – is tied up with a particular, normalized way of seeing, a specifically circumscribed visuality. Nonetheless, the supposed detached, rational visuality signaled by the remote viewing (via Street View) of a neighborhood was explicitly rejected by a number of my survey participants who felt able to glean – and moreover were compelled to relay – insights about “fear” and “enjoyment”, emotional insights that by far exceeded the merely visible elements of the medium. This is why, I would argue, it is so crucial that we not eagerly leap to simplistic conclusions about the types of (God’s eye view, detached, masculinist, etc.) visualities always and everywhere implicit in remotely viewed digital representations of place (chapter 7).

#### **6.4 Methodological coda: doing research in your own back yard**

Because several of my interviewees were recruited from existing social networks, some were already aware – or, in the course of our conversations became aware – that I live in

the neighborhood in which research the research took place. On several occasions, when participants were speaking favorably about the neighborhood and their preference for the kinds of built environment, “community”, etc. they had experienced/perceived during the walk in Kenwick, for example, it is likely that this perception of a shared sensibility, view or lifestyle might have encouraged the expression of such views. Comments such as “as you know...”, or occasions when participants would ask implicitly for approval or clarification were relatively frequent. Only occasionally did I perceive that my role as “insider” within the neighborhood hindered the participants’ free expression of ideas. In an exchange presented above, Jim, added the proviso “no offense” when declaring parts of the neighborhood “sketch”. Likewise, in the following exchange, Judy, a graduate student at the University of Kentucky marginally acquainted with the neighborhood, felt her way around, and perhaps ameliorated slightly, her negative opinion of the neighborhood (and its residents) based on her knowledge of my association with it:

Judy: you live somewhere around here though?

AB: right...

Judy: not right around here?

AB: oh, no, no. This is the – No, we live over, back... That way.

Judy: OK, that’s what I... Yeah, I am not in love with the people to tell the truth [laughter]. The –

AB: oh really, what about –

Judy: yuppies, you know: “I’m green and here’s my SUV but it’s Subaru so it’s all good”. I don’t know [laughter]. Not all, most, I mean – too many for me like that. Know what I’m saying?

Thus, having first confirmed – incorrectly, as it turned out – that I was not a resident of the neighborhood, and apparently comfortable that any criticism of the neighborhood’s residents would not, therefore, be construed as an attack on personally, she was more willing to throw her arms in the air and mimic the hypocritical yuppies she associated with the neighborhood. I would note here, however, that the personal dynamics between me (the interviewer) and my participants can not easily be declared helpful or prohibitive, even in a circumscribed example such as Judy’s. By this, I mean that any interview process is necessarily productive. Although my participants may have existing strong preferences or opinions, it is also clear, I would argue, that the stories told and the opinions expressed during the interviews were as much a product of the interview dynamic as of a pre-existing “well” of information to be tapped by the interviewer. Most basically, although I perceived my residence in the neighborhood to be a significant factor influencing the nature of the exchange and thus the resultant data – indeed, in two cases (Jim and Judy) in particular, the issue was alluded to explicitly by the interviewee – there are innumerable other more subtle social interactional components that can not be so readily explicated.

In terms of my various participants, I imagine that in several cases questions of (relative) race, class, gender, sexuality and age – as well as potentially myriad other axes of difference – might have impacted in more-or-less subtle ways the conduct and analysis of these interviews. No amount of reflexivity can account adequately for these possibilities, but acknowledging the *possibility* of their significance does at least recognize, I think, the limited and modest nature of the truth claims I make on the basis of these data.

Acknowledging the need to be attentive to the uneven power dynamics between researcher and informants requires (at least) some reflection on key variables in the conduct of the interview – the location, or “place of”, the interview being a crucial element (Elwood and Martin 2000). Since one of the prerequisites for the conduct of these interviews was pleasant weather (individuals walked for anywhere between a half hour and two hours), the majority of interviews took place outdoors. I always asked the interviewees for their preference, and ended up on two occasions in locations up to a half mile from my “target” location around Wilson’s Grocery: a barbeque restaurant and a bakery. Several participants chose to converse in the yard of a nearby church, rather than the store forecourt, which depending on the time of the day (or the participant’s tolerance for such a “public” location) was impractically loud and/or crowded. One of my interviewees, Amanda, in particular stands out as having a particularly strong preference that the interview should take place in a more private location – in this case, a bakery several blocks away.

AB: is here OK? Where should we talk?

Amanda: Far, far away [laughter]... I don’t want people to overhear us talking about technology and geography and who knows what. I’m not sure they would appreciate it [gesturing towards the customers coming and going from Wilson’s]

“Safely” away from the grocery store, en route to the more formal interview location, we discussed (briefly) her strong reaction against Wilson’s and in favor of the bakery: partly she was hungry, partly there were too many “truck people” coming and going from the grocery store – a reference to the numerous almost exclusively male workers (many in

pickups!) known to gravitate to Wilson's for the hot lunch specials. Allowing interviewees some flexibility to select the interview venue clearly does not mitigate the inherent imbalance between interviewer and interviewee; one party benefits in terms of useful research "data", new understandings of the research topic, and insights into others' understandings and narratives (Kvale 2006; McDowell 2001), while the potential benefits accruing to the interviewee are hard (impossible in this case?) to identify. Moreover, interviewees are not necessarily as inclined or comfortable as Amanda to assert their preferences, however strong their doubts or discomfort might be with the "default" interview setting. The majority of interviewees expressed no preference ("wherever", "whatever works for you") in terms of interview site.

While there is no way to circumvent entirely (or satisfactorily) the unevenness between researcher and researched, especially in a research project that does not seek (however problematically) to "empower" participants or contribute to any particular political agenda or movement, neither does it necessarily make sense to dismiss qualitative interviewing as inherently "one-way", "instrumental" and otherwise undemocratic as critical accounts of the power relations in social science research have, on occasion, claimed (Kvale 2006, 483). I attempted at all stages to involve my research participants in a dialogic process of knowledge production by, for example, inviting survey participants to provide their contact information in the event that they wanted to be kept updated about the course of the research project. Many of my interviewees expressed a level of interest in the broader research project, which is not surprising given the self-selection component inherent in any group willing to commit a significant amount of time (always



in excess of one hour, excluding any travel to or from the study location). Two people explicitly requested to see the completed dissertation, and I will provide copies to them.

## **7. Findings: Visual media and more-than-visual experience: navigation, emotion and locative media**

### **7.1 Chapter summary**

- Locative media invoke and represent embodied and emotional engagements with places more complex than those suggested by simple metaphors of detached “God’s eye view” visualities.
- Whether viewing the neighborhood remotely, via locative media only, or experiencing the neighborhood in person, participants drew on emotional, aesthetic (etc.) discourses that exceeded by far the mere visual/textual content of the provided media.
- The particularities of the technology platforms used in the present study were directly related to the embodied experiences and reported emotions of participants. For example, the use of an augmented reality application entails a particular bodily orientation with respect to the street – an issue explored by/with several participants.
- Similarly, the visual seamlessness of Google’s Street View represents a deliberately “realistic” and dynamic simulation of walking through place. Participants were used to forming, and comfortable reporting, their emotional reactions to the “feel” of a neighborhood based on the visual discourses presented.
- Visual images – such as the annotations provided in the two locative media interfaces – do not exist in a vacuum. Participants inferred meaning and significance from images by working through the intertextuality of these discourses with pre-existing external understandings, and other representations of place. As such, work in visual studies and methodological literatures on photo-elicitation techniques are useful resources for emerging geographical works in locative media.
- The interviews revealed differentiated experiences of emotion, and particularly of fear, in negotiating this urban residential landscape. Though there was no clear quantitative male/female division in (reported) fear, there are strong gendered dimensions to the ways in which particular participants reported feeling comfortable/uncomfortable in engaging in particular aspects of the research activities.

- These lessons about the emotional aspects of fieldwork are important considerations for future studies of locative media which should attend not only to the theoretical gendering implicit in digital *dérives* (and the like) but also the very practical matters of male/female differences in comfort with exploration of/in locative media and the city.

It is unsurprising that residents with direct firsthand experience of Kenwick should frame their commentary on the neighborhood's qualities in terms of experiences and emotions – friendships, community pride, fear of crime and so forth – of everyday life (Boulton 2011). However, even without extensive, sensual resources to draw upon, online-only participants (as well as my non-resident interviewees) felt able to make qualitative judgments about feelings of comfort, safety, etc.

As with photo elicitation methods, which have been deployed extensively across the social sciences, the photographic representations of the neighborhood (provided by way of Google Street View) seemed to provide a useful stimulus for individuals to articulate their emotional and attitudinal responses to the built environment, in a way that purely textual surveys might not have. Typically, photo elicitation is used in conjunction with other documentary devices, such as diaries or logs, to document everyday lives and/or provoke discussion about places and practices, especially those that may otherwise be too seemingly banal to warrant conscious reflection (Latham 2003). In a more-than-representational moment, the use of photographic imagery within a qualitative research methodology may be characterized as a radical departure from the primacy of the written word as authoritative representation in modern social science research (Ibid.). And while the occularcentrism of photography and visual media may be critiqued as sensually limited in the same ways as verbal representation, there is evidence that visual images

work as an effective prompt for talking about often taken-for-granted everyday practices and for sensitive or traumatic issues with vulnerable populations such as the homeless (Johnsen, May, and Cloke 2008) and children (Epstein et al. 2006). Geography has frequently been described as a visual discipline (for example: M. Rose 2002), which is in part a critique of geographers' privileging of images at the expense of other sensual qualities (with the "silences" and privileges that such a bias entails), but also in part a call for critical engagement with the significance of visual images to understandings of place.

Although the Street View and annotative imagery provided to the online participants was not contributed by the participants themselves – a clear departure from classic photographic elicitation as a method – it is significant that similarly thoughtful and emotional responses were reported. But, also in a departure from codified photo elicitation methodologies, the images were presented to my participants – both within the Remote Interface and Street-Based Interface exercises – in a naturalistic, familiar digital format. The follow-up surveys and interviews (respectively) were used to probe individuals' experiences and understandings of the neighborhood based on the imagery and other cues, but the viewing of the imagery took place on the participants' own terms – either at a time and place of their choosing (the Remote Interface) or self-directed within the neighborhood (the Street-Based Interface). This is a significant methodological point given the ways in which practices around the consumption (and production) of contemporary geographically referenced images/media differ from previously existing contexts of authorship, audience and display (see Rose 2003, 214).

Frequently, geographers deploy visual images in their conference presentations, classrooms and books to capture the essence of the glacier, the street, or the manuscript.

Decontextualized, these images “have no framing that suggests any kind of technical or aesthetic—let alone social, economic or institutional—constraint on the image” (G. Rose 2003, 215). Devoid of critical commentary, photography is presented and read as a faithful representation of reality, as luminous “jewels of disciplinary data” (Ibid.). The critical moment suggested by Rose is the problematization of the relationship between the viewer and the image, compared with the relationship between the photographer and captured scene. The former, whether the viewer is an academic presenting her findings to an enthralled audience (Rose’s example) or a student browsing an unfamiliar part of town using Street View, is one of confident assertion and, above all, “authority” (Ibid., 216). By contrast, the relationship between the image’s (Street View’s) referent (the street) and the photographer may be far more ambiguous, steeped (perhaps) in the bemusement, indifference, and so forth of placing one’s body where visual knowledge can legitimately be recorded.

I would suggest that, based on my participants’ reports of their emotional responses to the Street View imagery, the purported confident visuality of remote, screen-based viewing – the power of the individual viewer over the scene he/she surveys – is less absolute than is suggested by Rose’s schema. Rather, as I show below, Remote participants grappled to an extent with the anxieties and complexities – the emotions – of street-based exploration, even as, locationally speaking, they observed the neighborhood, in Rose’s (2003) analogy, with the cool detachment of the lecture theater rather than the embodied entanglement of the field.

Indeed, Rose’s account of geography’s disciplinary images, and according to Lapenta (2011), the broader production/consumption binary frameworks by which social theorists

have understood the economy of visual images, may be useful but incomplete in the context of locative media. The tension between on-site versus remote consumption of digital representations echoes the discussion in Jonathan Culler's (1981) work on tourism semiotics wherein he notes the irony of the productive role markers play in constituting sites as objects of "authentic" tourist experience (1981, 5). Significantly, Culler notes that markers, or claims to touristic (historical, cultural) significance, may be either on-site, such as historical plaques and signs, "mobile", as in the case of guidebooks and maps, or "off-site" as in the case of representations explicitly designed for consumption elsewhere ("souvenirs", art works, advertising products). Drawing on the Situationists' notion of the spectacle and Baudrillard on simulacra, Lapenta argues that what we are seeing with locative media is, finally, a reconciliation between image and reality. Whereas Debord (and the Situationist movement) lamented that, under what they characterized as autocratic capitalization of production, the "unity of life can never be recovered" from the primacy of "representation" over "living" (Knabb 2006[Debord, chapter 1]), Lapenta (2011) reads from the emergence of locative media a "geolocational reunion" in which: "the image is finally recognised for what it has always been; a representation of interconnected physical and social relations, and a system of informational relations (spatial and temporal) among people and the objects of their worlds" (Lapenta 2011, 16). Equivalently, the intrinsic relationships between image and referent in an era of ubiquitous connection to and interaction with digital content seems to imply, for several participants – those noting that they would be uncomfortable visiting parts of the neighborhood, that they suspected certain kinds of criminality to prevalent, that

placemarked information seemed incomplete (and so forth) – a keen sense of the social and technical processes surrounding the image’s production.

It is worth noting here that the very concept of emotion – what I am taking to refer in this context to a fairly broad swathe of qualitative judgments about the reported “feel” of a place – is far from an unproblematic concept within geography. In a notable editorial, Anderson and Smith (2001) were able to argue that “emotions have been banished from social science” (7), attributing this omission, by design, to the masculinist basis of social science research. Where emotion was written of, they suggested, it was by explicitly feminist geographers (and the occasional cultural geographer). Such work on emotional geographies from the 1990s onwards engaged emotion in a range of theoretical and substantive contexts, frequently dealing focusing on the emotional dimensions of actually engaging in fieldwork (see: Sharp 2009), the interview process, and various facets of the research experience. These feminist and, more broadly, poststructuralist works have not always engaged directly with emotion as a concept, but the “emotional turn” in geographic research is inextricably tied up with the more generalized appreciation of the social nature of social science research.

Writing about emotion, or more accurately, *reading* emotion from participants’ utterances or typed words is no less problematic. While a feminist inspired agenda of breaking down the binary between the rational and the emotional in cultural geographical research is a laudable goal, methodologies for doing so are less clear. As I have suggested above, classic qualitative analytical tools such as discourse analysis run the risk of reinscribing these very rational/emotional binaries in terms of their insistence on rigor and reproducibility of method (Fairclough 1995). The irrational, emotional, subjective (etc.)

words of the research participant are rationalized, ordered, coded and made sense of by the expert researcher and “his” toolkit. There are real potential dangers then in taking texts (spoken or written utterances) as transparent representations of emotions, and then applying to those texts systematic tools or codes for emotional identification. If emotion is a “subjective and non-verbal phenomenon of human consciousness” (Bingley 2003, 330), it is necessarily problematic to presume that individuals’ words offer a direct window into an instinctive, metabolic psychological, etc. basis of emotion. Given this realization there are several possible “ways out”. I will mention two, before making a more explicit statement about my interest in emotion in the context of locatively mediated landscape. Thereafter, I turn to a more empirically grounded account of some of the ways in which emotion played a significant role in the conduct of this research project.

It is arguably around this base level “crisis of representation” realization of the inadequacy of (verbal) representation of complex social phenomena that the study of emotion in geography has, to an extent, been supplanted by a more-than-representational focus on affect. In contrast with emotion which is inherently social, reflexive and intersubjective, affect is frequently characterized as escaping the play of signs and discourse, as something purer, even “prediscursive” (Dewsbury 2003). Emotion is potentially *too* tied up with self-conscious reflection and socially constructed understanding *because* it is tied up with self-conscious reflection and socially constructed understandings grounded in a pervasive popular, psychological, sociological discourse on emotion. As such, because affect relates to such basic reactions and ordinary emotions,



writing about affect raises a suite of problematics around the politics of representation – not least, the possibility of representation in general.

By contrast, many critical (particularly feminist) geographers choose to engage emotion as a necessary component of epistemologies that reject not just enlightenment ideals of masculinist reason (Parr 2012), but also elision of the social in more-than-representational or “transhuman” work (Thien 2005). Echoing Thien, Sharp (2008) suggests that the turn to affect in human geography is one that may work to reinscribe old binaries between mind and body and (thus) between masculine rationality and feminine emotion. Thien (2005) makes a parallel argument, suggesting that a turn to affect (rational on the basis of its physiological reality) versus emotion (irrational, feminized, based on its nebulous, self-conscious character) further works to perpetuate a “false distinction between ‘personal’ and ‘political’ which feminist scholars have extensively critiqued” (3).

For example, in her dissertation research on Hope VI housing, Ellen Hostetter (Hostetter 2008) makes an argument (for example pp. 42-5) about the possibility – which she then puts into practice – of writing critically about emotion on the basis of textual data. Reading her interview and archival material through sociological, psychological and philosophical literatures on emotion, she treats emotion(s) as non-essential but nevertheless identifiable sets of characteristics that are meaningful to people and thus affective (in that case, in the housing policy arena). Establishing a “code book” (Hostetter 2008, 44) based on established definitions of emotions, her discourse analysis of texts proceeds by way of two linked methods, equivalent to the content analysis and discourse analysis moments in the present study’s methodology: a content analysis involving the

counting/identification of key words and phrases (the coding element), and an “interpretive” method wherein texts are read for their emotive or emotionally loaded content.

By recognizing that objectively reading emotion from texts is an impossibility – and simultaneously acknowledging that any interpretation of the emotional content of texts will necessarily be partial and situated – we nevertheless enable the possibility that emotions matter.

It is in this spirit that I reflect on what Hostetter describes as the “emotive” content of my participants’ narratives. Specifically, and consistent with an anti-essentialist notion of emotion, I want to reflect on two broad types of emotional response reported by my participants: emotional ideas related to fear and trepidation, and emotions around familiarity and comfort. These two heuristic categories of emotion are not intended to be all encompassing, but I am particularly interested in the ways in which interviewees described navigating, emotionally and spatially, these “poles”. Survey respondents similarly reported impressions of the neighborhood that drew on notions of fear and comfort, even as these analyses lacked some of the depth and nuance of the interview narratives.

## **7.2 Locatively mediated narratives of fear and comfort**

When Microsoft patented its “avoid ghetto” technology for smartphones, commentators reacted angrily (and approvingly) to the transparency with which the software giant chose to demarcate for users safe versus “ghetto” areas of the city (see: M. Graham, Zook, and Boulton 2012). Slated for use in a range of locational applications including GPS

navigation and localized search, the technology uses a range of publically available data to determine which areas or routes to recommend to users (and conversely, which to exclude from consideration). The specific datasets included in the analysis are not explicit, but the patented algorithm is reported to use a combination of crime statistics, socio-economic data, accident reports, and severe weather information to derive a measure of a neighborhood's relative safety. Unsurprisingly, it is the inclusion of social data that is particularly controversial, in part because of the potential racialized biases of particular kinds of statistics. Aggregated crime statistics, for example, tend to reflect particularly poorly on low-income African American neighborhoods, even as the socio-economic and racial nuances of likely victims, perpetrators and types of offenses recorded (to say nothing of the methods by which crime statistics are created), often imply more complexity.

Decades after the idea of ecological fallacies – ascribing characteristics to individuals based on aggregated areal data – became a mainstream critique of geographic description and specifically GIS (Pearce 2000), we might make a similar argument about the designation of safe/ghetto areas via speciously cutting edge spatial analysis. Thus, rather than reflecting the collective experience of actual individuals – this is the promise, however unlikely, of crowd sourced and socially voted/recommended data that typically drives organic locative search – large, official aggregate datasets such as these ascribe characteristics to areas instead. By creating virtual fences, such technologies may then work to reinscribe actually existing divisions in the social and material landscape or, alternatively, work to stigmatize particular places. Despite the ethical and methodological questions raised by a tool such as Microsoft's, the online survey portion of this research

offers some indication that consumer demand exists, if not for a simplistic ghetto/not ghetto mapping, then for the availability of the types of socio-economic data the application employs by which to characterize a neighborhood using statistical metrics. With only visual (and limited verbal) cues in the form of placemarks available, survey respondents – as I have shown above – were, by and large, willing to comment on and to rate aspects of the neighborhood with little equivocation (evidenced in the tendency to agree or disagree strongly with Likert-scale statements, or to provide written answers making emphatic judgments).

However, when asked directly about any weaknesses of the maps provided – “what additional types of information or features could be added to these maps to allow you to gain a fuller understanding of the neighborhood?”, more than two thirds offered suggestions (the remainder either not answering or stating “nothing” or, explicitly approving of the accuracy and/or comprehensiveness of the maps provided). Several respondents made comments about the overall user experience of Google Maps and Street View, commenting on such user-specific issues as slowness to download imagery or the perceived low quality of imagery. Others offered assorted more-or-less specific comments ranging from the slightly creepy – “I would say images of the inside of houses to see what goes on” – to the whimsical<sup>35</sup>: “[images] from different times of day and the

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<sup>35</sup> “Whimsical” is not intended to be dismissive. Rather, this particular comment is consistent with a broader desire, expressed by several survey respondents, for a more immersive online experience of place. This sense of immersion is, of course, a key driver of innovation in the field of locative media. While Street View offers a type of user-malleable experience unthinkable even a decade ago, Google and others continuously attempt to push the envelope in terms of the spatial and temporal “resolution” on which realistic, immersive experiences depend. It is specifically this privileging of immediacy that is showcased in Google’s 2012 concept video for an augmented reality future entitled

changing of the seasons creating a living street scene”. Of those suggesting additional, rather than enhanced, feature sets (60 people), 37 people – almost a quarter of all respondents – asked for information about criminality in more-or-less direct terms. These requests included surprisingly specific direct requests for “hit and run” numbers, “safety alerts”, “convictions” and “locations of sex offenders”.

Many survey respondents made (tangential) references to feelings of fear (of crime) and safety without a corresponding plea for additional information – or any information – that might corroborate their impression based on, at most, a map, several generally positive placemarks relating to architecture and amenities, and Google’s annotation-free Street View imagery. Comments such as “parts look a little ‘shotty’. I wouldn’t want to go there”, or “not the kind of place to walk alone” were offered in response to a question

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“Project Glass: One Day”. In this near-future scenario, the handset of a smartphone is replaced by a small screen worn in or directly in front of the eye, able to access applications (calendar, browsers and so forth) via voice input, and capable of displaying locational augments – equivalent to placemarks – in real time. Implicit in this scenario is a melding of temporally asynchronous events, annotations and augments into a locatively mediated present. That my participant suggested that images of a neighborhood at different times of day, and in different seasons, would constitute a “living” rendition of the neighborhood is testament, arguably, to the pervasive idea(l) of a total collapse of augmentation and reality, each onto the other. In a future scenario – not far-fetched – Street View’s “live” imagery displayed via “Google glasses” is, in fact, asynchronously recorded data served according to the viewer’s predilections and preferences. Such a virtual reality, framed in the increasingly familiar tactile/visual economy of augmented reality, raises deep questions about the politics of representation. Most banally, even in the present situation, only 40% of survey respondents describing their overall impression of the neighborhood as “very favorable” agreed that they were more likely to want to visit the neighborhood in real life having explored online. A handful of participants saw fit to make explicit comments disavowing – as a direct result, they said, of their online exploration – any interest in visiting the neighborhood: “seems nice enough but wouldn’t take the time to drive there” said one; “I can get the same experience in my neighborhood so although I enjoyed seeing what it has to offer I probably would not visit”, wrote another.

asking explicitly for the worst of least favorable characteristics of the neighborhood. In all, thirty respondents identified explicitly emotional descriptions of the neighborhood as defined in the code book (but note that separating out these explicit appeals to, for example, fear or friendliness from implicit, emotionally charged references to architecture, wealth, cleanliness, etc. is problematic). In the case of the explicitly “negative” emotional responses, particular individuals felt able to read fear (or at least distaste for perceived criminality) from the visual codes of the built environment. Myriad behavioral studies have examined the relationships between fear and urban form in the urban environment and other places such as college campuses (Nasar and Jones 1997). In these studies, characteristics of place – quantifiable identifiers such as the density of vegetation (Kuo and Sullivan 2001) or spatial syntax, describing the relationship between the place and its surroundings in terms of accessibility and “escape” routes – are abstracted from the social relations at work in and through these landscapes of fear. Only recently have studies begun to consider how digital exploration of places, via Google Street View, may be implicated in the politics of representation in terms of silences and exclusions that may work to marginalize or malign particular neighborhoods (Power et al. 2012).

Thus, working from ingrained discourses around urban form, economics and (thus) crime in Southern cities, these individuals were able to form strong, negative emotional responses to the neighborhood on the basis of normative, racialized, readings the visual clues afforded by the online mapping interface. Particular kinds of architecture (“shotty” or shotgun homes), particular urban form (downtown areas, grid layout, small lots), age of homes (old), and location within the city imply a particular socio-economic makeup

and (thus), in this formulation, a level of criminality. The controversial “avoid ghetto” application is immune to such visual codings – on the basis of crime statistics, Kenwick would score around average (“not ghetto”) compared with city-wide crime rates – even as it (re)defines undesirable neighborhoods using limited and problematic criteria drawing, however unconsciously, on the same racialized discourses. The “unquestioned whiteness” (Schein 2006, 16) of the American suburban ideal stands as a counterpoint to the racialized inner residential neighborhoods of dense, aging gridiron streets.

The “shotgun” and otherwise racially coded parts of the neighborhood are, ironically, among the most “white” parts Fayette County. Of 1753 individuals recorded in the 2010 Census for the two Census Block Groups encompassing Kenwick, 41 self-identified as African Americans. Of the 699 individuals recorded as resident in Kenwick’s “third block”, eight – or 1.1% – were African Americans, the largest minority in the neighborhood.

As I illustrated in section 5.9, interviewees visiting the neighborhood in person were occasionally apt to explain their routes and/or preferences for particular locations within the neighborhood in terms of mild or implied discomfort. One participant, however – a 28 year-old female – explicitly reported being “very uncomfortable” in one particular part of the neighborhood:

Candice: There were guys in wife-beaters out front drinking 40s or whatever. One of them hollered

AB: wow, where?

Candice: that’s why it was creepy I guess, it’s a dead end street and I didn’t see anyone at first. Because it was so quiet I guess I turned around and carried on. It shook me up a little.

AB: I can imagine. Why did you take that route to start with [there were no annotations here]?

Candice: It looked intriguing... Everything else was cute, was fine, as a single girl. I guess I wanted to see if the other streets were as cute

AB: as cute as? –

Candice: - as the ones with the highlights, the highlighted ones

Pushing a little further, I asked Candice if she believed that the placemarks were, therefore, “inaccurate”, given their emphasis on the visual quality of particular buildings

Candice: well, no, not, not really. It would have been nice to be warned though!

AB: I’m sorry

Candice: [laughing] no, I mean, I chose to go there. There’s only so much you can tell from a picture

Candice’s interview here raises an interesting corollary to the notion that participants (whether Remote or Street-Based) tended to engage the annotations, and thus to talk about the neighborhood, on the same discursive terrain (i.e. visual quality, amenity availability) as the provided annotations. However, in this case, the interviewee was affected so strongly by the incident described that she reported having to “rethink everything I thought about the neighborhood or at least open my eyes to reality”. I think it is significant to note, therefore, that in a Remote exploration scenario, the possibility of one being interpellated in this way, the possibility of an unexpected or chance encounter



(positive or otherwise) dramatically changing one's understanding, is diminished. It is perhaps unsurprising, therefore, that Street-Based participants, whilst generally highly complimentary with respect to the neighborhood's desirability, were more likely to offer qualified (and more nuanced) descriptions than were Remote participants subjected to purely visual/textual stimuli.

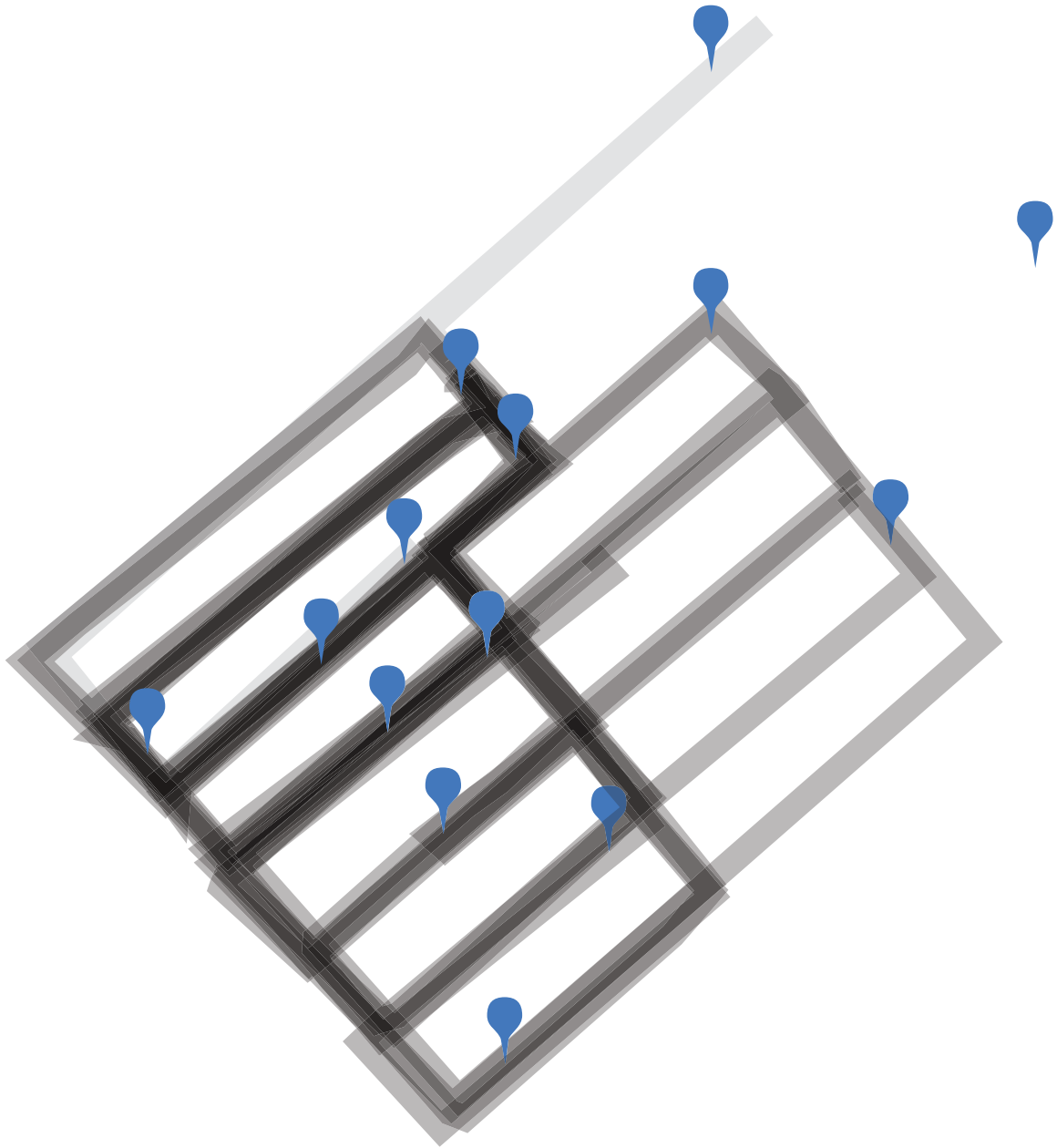
The figure below shows the composite route or waypoints of street-based interviewees as recorded by a GPS logger. Despite the relatively even distribution of placemarks throughout the neighborhood, and participants' frequent assertions that they sought to incorporate all placemarks, or as many as possible, there was not a similarly even distribution of foot traffic throughout the neighborhood. In part, we might attribute the concentration of foot traffic in the south and west half of the neighborhood to the proximity of these streets to the start/end point. However, there is also a noticeable pattern whereby the foot traffic declines substantially in the second block and is almost non-existent in the third, despite the existence of placemarks in those areas. As such, the recorded routes are consistent with the narratives participants told about the routes taken in respect of their reactions to and preferences for particular locations within the neighborhood. We can not easily ascribe such a pattern to fear (or any particular emotion), but, taken together, participants' experiences of the neighborhood (with the annotations provided) worked to minimize the desirability of particular routes. Indeed, the location of a public art garden at the intersection of Richmond and National Avenues was visited by only a single individual (this placemark appeared in both the architecture- and amenity-themed annotation sets), despite the frequent comments by participants about their perception of the neighborhood as "artsy" or stated preferences for "quirky"

or “creative” sites within the neighborhood. Thus, in the same way that some participants were willing to comment on the availability of a trolley service on the basis of its representation within the provided map, two participants did not need to physically visit the location highlighted in order to make direct reference to its importance:

“the park, the sculpture garden that something, that’s not something you see everyday. It’s not something you see everyday, I mean everywhere but it’s different. I can see how it fits here with this type of neighborhood. But that was unexpected.

(Simon)

Additionally, as part of a conversation about memorable/enjoyable parts of the neighborhood – in which she pointed out specific and general recollections of front yards and landscaping – Michelle (whose route did not take in the location highlighted by the placemark) made passing reference to the art garden, noting “pieces of art scattered around, in front yards, in the park, sculptures, fountains”.



**Figure 7.1.** Composite of interviewees’ routes indicating the approximate locations of placemarks.

### **7.3 Bodily “silliness” and the user experience of Augmented Reality**

When one is collecting gold coins on behalf of a Dutch fairy, a skip and a hop, a phone aloft may very well be the appropriate gait. But, as my interviewee Simon attested, it

might feel rather less in-place when looking for a building or a bus stop on a residential street:

There's no doubt it's a little awkward...holding up the phone like I was taking a picture but not and people were thinking, I'm sure, 'what's this guy doing?'

Simon suggested that the augmented reality interface, rather than the use of a phone for exploration/navigation per se, constituted the uncomfortable part of the experience – a notion repeated in similar terms by four other participants. But it also seems that context, and specifically the task at hand, mattered as much as the actual, bodily positioning involved. Simon suggested that were he taking a photograph, holding the phone up in front of his face would be (and would be seen to be) entirely normal and unremarkable. Likewise, in parallel conversations with four other participants, the question of duration – the need to look through the screen in a sustained fashion – became significant too. Each suggested that the awkwardness, or “weirdness” in one case, of the interaction with the interface pertained to the duration of the interaction in comparison to, for example, the deliberate act of framing and taking a photograph: “Maybe if it was in front of the Eiffel Tower [it would be less awkward] but staring at homes for ever is just, well, different – weird,” remarked Josie, suggesting that both duration and location factor in to the “weirdness” of the engagement with augmented reality.

Thus, although only this handful of participants mentioned in explicit terms that the usage of the augmented reality interface felt awkward or out of place, several more made less direct references to the very specific bodily orientation required in the usage of handheld

augmented reality devices, frequently making comparisons between the use of augmented reality apps and their more typical engagements with locative media. For example, a handful of participants noted that, typically, their mobile use of geolocational information was either explicitly task-based (i.e. find a particular type of nearby business) or navigational (i.e. find directions to a particular address), rather than recreational/explorative.

Using the example of a tourist map in Fredericksburg, Hanna and colleagues show how tourists, tourism workers, and the map together produce map space through embodied performance in/of place (Del Casino and Hanna 2006; Hanna et al. 2004). That is, while the map is, in part, a representation of historic Fredericksburg, it is also party to an ongoing productive process in which tourists may reproduce, or alternatively resist, the “intended” narrative. That the production (versus consumption) moment of cartographic practice extends beyond the printing press/corporate office to the spaces in which maps, as claims to spaces, are deployed, highlights a need to consider the ways in which people behave “map in hand” (Del Casino and Hanna 2006). Observing tourists’ navigation between points of interest on a historic tour map, Del Casino and Hanna (2006) find a range of behaviors: individuals engrossed in the map, seemingly ignoring their surroundings; individuals ignoring the map entirely.

In the case of Hanna and colleagues’ work (Hanna et al. 2004; Del Casino and Hanna 2006) instances of individuals contesting and/or reinterpreting the map in various kinds of ways are interrogated via firsthand ethnographic observations of individuals’ behaviors. While the observation strategy in the present study was different, focusing on participants’ narratives deriving from their use of the provided maps, my participants

were open in discussing their use of the mapping applications. Reiterating my comments about the relative merits of explicitly “mobile” go-along methods (section 5.2.1.3), it was apparent that by *not* walking along with my participants their usage of the technology, and their explorations of the neighborhood, were likely less contrived in the sense of being adapted specifically to please the researcher. For example, several participants claimed to have made greater use of the map and placemark list interfaces than they did the augmented reality interface; this is, perhaps, to be expected given the relative unfamiliarity of the Layar user interface (along with the other issues of awkwardness, etc. mentioned above). However, two participants mentioned explicitly the significance of their exploring the neighborhood without the physical presence of the researcher. “Because you weren’t watching” one had experimented “for literally a minute” with the augmented reality functionality, explaining that she found the user interface “weird and not really useful when you have a map anyway”. The second was more blasé, saying “not gonna lie, but I actually forgot that the augmented reality bit was available, which is fine because I’ve seen it before and I can take it or leave it”. The clear implication, then, in both of these statements is that the users’ experiences of the Street-Based app were impacted by the absence of the researcher. The awkwardness (in the first case) and indifference towards (in the second) the use of the augmented reality are significant points to note, points that might not have been brought out so readily were research participants to experiment with the technology in the presence of, and eager to please, a go-along researcher.

## 8. Additional findings, conclusions and future directions

### 8.1 Chapter summary

- The interview and survey responses support the notion that locative media are related in complex ways spatially and temporally with the landscapes to which they refer and in which they are produced and consumed.
- Consumers of locative media – the participants in these research exercises – are not, universally, passive consumers of media. To the contrary: several participants engaged directly with questions of democracy and authorship, questioning or problematizing the authoritative representation of place provided (or its genesis).
- This implies a need for further investigation of the broader regimes of visibility implicit in consumer locative media products, along with the politics of locative media production and consumption.
- Interview and survey data provide some empirical basis to the suggestion that the temporal dimension of locative media is significant to consumers of landscape representations of various kinds.
- Building on our concept of timeless power (Graham et al. forthcoming) I suggest that the temporality of locative media is one significant and underexamined facet of these emerging technologies.
- Time is significant in a number of respects. For example, locative media representations tend to emphasize immediacy and currency, even though the time and sequence of those representations are not always explicit. This has implications for the ways in which particular experiences and representations of place are either emphasized or silenced. I draw on some suggestive examples from the present study that buttress these claims.
- Where visual studies scholars and others have begun to theorize, in general terms, the epistemological and social implications of locative media technologies, the present study illustrates the utility of an empirically-based, qualitative/quantitative methodology for gaining insights into the actual workings of particular locative media technologies in particular contexts.
- While the present study sheds light on the ways in which locative media users – whether remote from the place to which the media refer, or exploring that place in person – make sense of, and form perceptions of, a particular residential

neighborhood in Lexington, Kentucky, the broader claim is directed more broadly. Specifically –

- The landscapes we inhabit are products (and productive) of myriad discourses. Increasingly these discourses are intrinsically related to digital media. This observation is not novel but its implications for our understanding of cultural landscapes, and the methodological frameworks by which we explore questions of place, have not been so fully developed to date.
- Locatively mediated landscape – qua landscape – matters. The task, then, is “to ask *how* it matters” (Schein 1997, p. 662). Doing so, to paraphrase Schein, entails understanding how the locatively mediated landscape *here* is connected to places and processes elsewhere.
- The present study utilizes novel locative media platform development in conjunction with established critical geographical methods to explore the ways in which locative media work through a particular ordinary residential landscape for a particular set of individuals.
- As such, Kenwick and my participants’ work here are not intended to stand in for the totality of urban, residential, locatively-mediated landscape experience. To the contrary, Kenwick bears the weight (cf. Schein 1997) of explicating a methodological approach to the study of contemporary cultural landscape.
- Understanding the ways in which particular locative media platforms and practices work in particular places and times entails making modest claims about the generalizability of any particular empirical context, even as we build critical theoretical frameworks by which to approach urban cultural landscapes.

## **8.2 Authorship and Authority: Grappling with “user-contributed” data**

Particularly during my interview with Michael, a 28-year-old participant (and architect-in-training) I was able to pursue questions of locative media structuring engagement with the material landscape, and dissent from locative annotations in some depth. Having identified the “interesting architecture” of the neighborhood as his favorite characteristic of the neighborhood, he went on to explain that:



Michael: ...actually, I'm glad that I actually strayed from the beaten path so to speak [laughter, pause]...Not really – I think I saw probably all but, all but a couple I guess. But what I found most interesting was a house, the houses, by I forget the person, the name. It was on the sign but I've seen his work before –

AB: oh, the work..?

Michael: Right, the architect or developer – I guess architect. They fix up houses, but in a more sustainable and quirky way. It's hard to explain. There are two on Richmond Avenue that I know of but I couldn't find, well didn't see, the one I thought I knew about which I want to say was somewhere closer to, well – anyway. They use reclaimed materials and try to synthesize a more rustic style with the architecture of the home and, actually, they are more quirky – something different.

AB: OK, they are synthesis of...?

Michael: Yes, the vernacular style with a more country, rustic vibe. It's really neat. I don't know why they weren't highlighted, I guess – I, they are just more interesting to me than, you know Craftsman. Which is awesome, Craftsman. Everyone likes Craftsman, but these are different.

AB: OK. But they weren't on the Bungalow Tour [referring to the placemarks based on the homes featured on the 2011 neighborhood tour]

Michael: Which they should have been! But people are missing out.

AB: Missing out on – Who is missing what?

Michael: Yeah, if they are following these – What the Google, I guess Google is where they're pulling from?

AB: The placemarks.... Yes, well, it's a Google Map but these are user-contributed placemarks so they are not official Google placemarks or anything –

His comments on architecture and aesthetic preference led into a broader discussion of normative aesthetics: the question of where (and by whom) locative annotations are created and (thus) their potential role in reflecting and reproducing normative aesthetic preferences.

Taking for granted that “everyone likes craftsman”, Michael seemed genuinely aggrieved that it was this popular style of architecture foregrounded in the Street Based Interface.

The critical moment to emphasize here is that, as an overtly “critical” consumer of locative media, Michael reflected on the likely persuasive power of the augmented reality application – other users might “miss out” on those worthy locations not highlighted – even as he engaged with the annotations on their own terms. As Lapenta (2011) suggests, geomedia – locative media annotations – are, for an increasing number of people, so fundamentally intertwined with everyday engagements with places that their central role in mediating experience becomes second nature. Lapenta’s is a broader argument about the bodily orientations, author/consumer culture and political economy of geographically referenced data, but it is also a recognition that for many power users<sup>36</sup> and even everyday consumers, the structuring role of geomedia is so commonsense, so innocuous as to go unquestioned. In this scenario, a critical project (articulated by Michael) becomes not to interrogate the ideological and political-economic bases of, say, Google’s authoritative digiplaces, or the conditions of possibility by which “describe a neighborhood” requires reference to aesthetics, cleanliness and amenities (rather than,

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<sup>36</sup> Power users refer to “advanced” consumers or early-adopters who make use of emerging technologies more frequently and comfortably than do mainstream users.

say, homelessness and politics and art), but to work towards more perfect, more useful, maps within the same discursive boundaries.

Michael: right, so I'm saying that whoever is choosing these markers is highlighting these bungalow tour houses and the others don't stand a chance, in a way.

AB: who is doing that? Google?

Michael: No, I mean, my understanding is that this kind of thing is based on what people are looking at. Users. User-generated? Like whenever you go for a restaurant, because this is what I would typically search for, like when we're travelling I'll take out my phone – what I would do is search for restaurant and I guess it would find the most popular. What people have voted on. Like the bungalows, the Craftsmen versus the random houses. I guess somebody put them on there or because they're off the Tour web site or whatever. Right?

In a parallel conversation with Jane, 29, the issue of selection was raised again. Judging the annotated homes to be “overrated”, she mused that:

in a way it's paid for. I know it's not directly, but if these bungalows weren't part of the tour or weren't for sale and not listed by the realtor or whoever there would be no record, I mean, no reason why they would be highlighted right?... Who makes a website about their house? Maybe I can go ahead and highlight my house? I don't know, can I? It would be neat to make it stand out like it's important... I should look into it [laughter]. Make a story to go with it

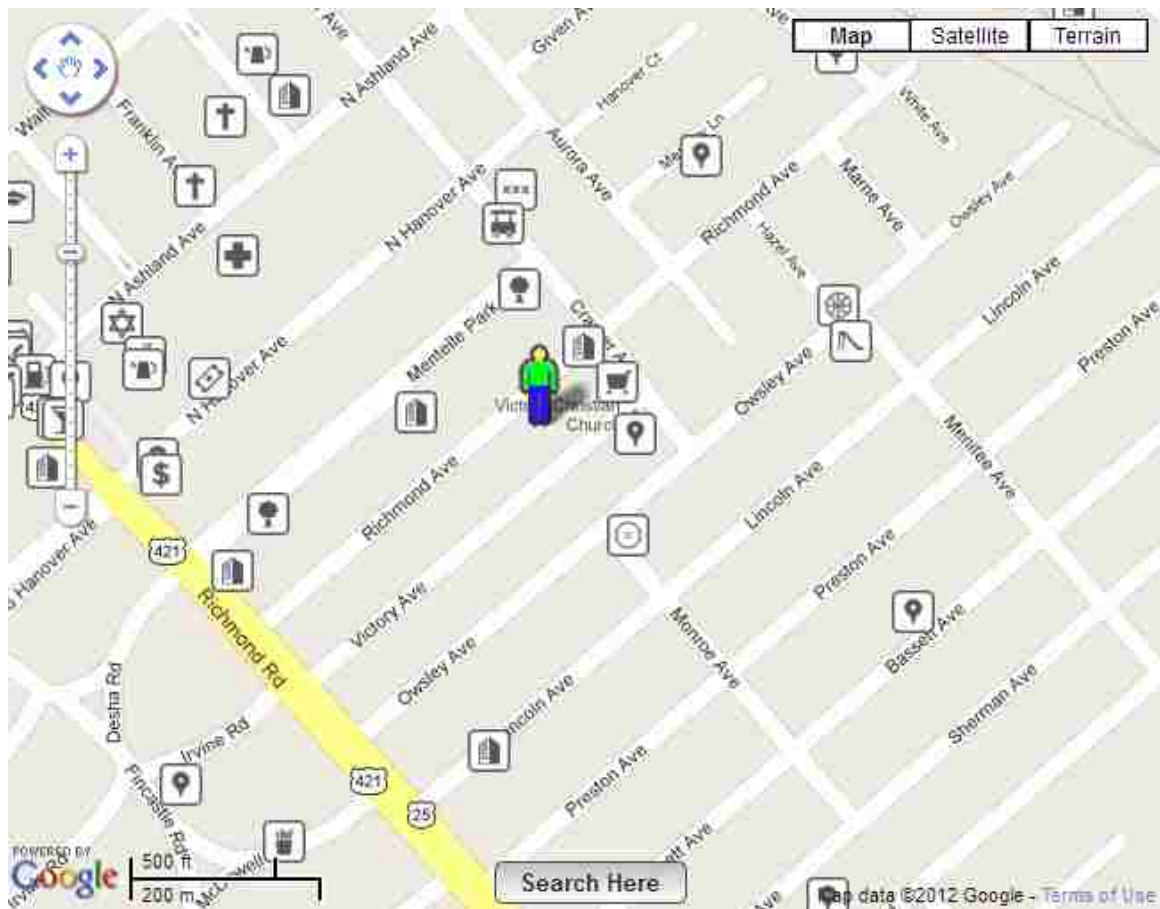
I have reproduced these exchanges in some detail because they highlight not only cases in which the “authority” of the placemarks was challenged explicitly, but also a participant grappling openly with questions of authorship and the ranking processes by which, he presumed, these placemarks came to populate the Street Based Interface. Unusually amongst the participants, Michael claimed openly to have “strayed” from “the beaten path” – by which he took to mean, presumably, a route taking in each identified location in a systematic manner. Even so, his reported (and recorded) route did not depart in any substantial way from the typical exploration pattern of the street-based participants: that is, a route encompassing the majority of placemarks, somewhat concentrated on the streets immediately adjacent to the designated start point.

Thus, for consumers of locative media, authorship is an important question. To date, the dominant delivery media for locational annotations have been, as I have suggested, rather less than transparent in respect of the individuals and algorithms selecting and ordering displayed annotations. Geographers have sought to interrogate the social aspect of social media by piecing together and mapping crowd-sourced understandings of place. For example, locational checkins by users of Foursquare and similar platforms may be used as the basis of description of a popular “geosocial” (Kelley 2011) spatial imaginary. By amalgamating the user-contributed data from a variety of platforms, CheckInMania.com presents an overview of all user activity within a selected geographical area<sup>37</sup>. The platform is but one example among several Google Maps mash-ups leveraging publically accessible social media information to create a composite cloud of annotations. As such,

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<sup>37</sup> In an illustration of the disconnect between the speed of commercial, locative media and the sluggishness of traditional publishing, only FourSquare, among the referenced services, remained in existence as of late 2012

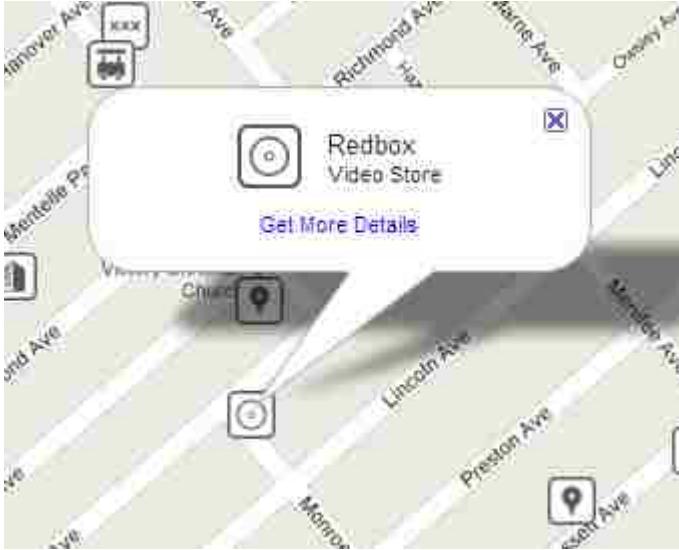
for a relatively inactive area such as Kenwick, the total social media action recorded (“since records began”) may be displayed fairly readily:



**Figure 8.1.** CheckInMania.com mashup of Kenwick showing a smattering of annotations drawn from social/locational media services, particularly Foursquare.

(Retrieved October 1, 2012.)

Selecting any of these highlighted locations gives both a name of the place and an opportunity to view “tips” – comments, within the Foursquare service – from previous visitors and/or annotators, with limited editorial control (Figure 8.2).



**Figure 8.2.** A non-existent Foursquare-annotated Redbox video service in Kenwick as displayed at CheckInMania.com

(Retrieved October 1, 2012)

It is notable here that the critical consumption of locative annotations is, nonetheless, consumption of those annotations. When asked broad questions about their experiences within the neighborhood, volunteered answers frequently turned to those sites flagged in annotations. As in Michael’s case above, a handful of participants challenged the apparent assertion of significance appending to annotated locations – even as the presence of an annotation drove them to engage with that location (and the associated claim). Michael was not the only participant to suggest (variously) that “more interesting places were left out” (Sarah, 24) or that “the houses tagged seemed overhyped compared to some others” (Jane, 29).

In response, I suggested to Jane that, similarly, a printed or audio guide for a neighborhood tour would necessarily highlight some key features or locations at the

(possible) expense of others. Her response engaged with the issue, implicit in others' responses of editorial control: "yes," she said, "but when it's a book I can see who the publisher is".

Pushing the topic a little further, I asked whether the information presented in the application was therefore "less trustworthy" than that presented by, for example, the Neighborhood Association in its printed bungalow tour guide:

not really unreliable, I think, although it could be. It could be more open and fuller and diverse too but that runs into problems. I can see an app, the tour app could be better if it's a packaged app, you know, and not something from users. Like a neighborhood association app or a Bluegrass Historical Group [sic] app where you know what it is. Or who it's from

I asked: "do you think it's important, does it matter to you, to know who is the author of each [placemark]":

it does, it does, only if I can look at it and say 'OK this person put this out there' and that's great. I don't trust [laughter] people [laughter] anonymous people putting stuff out there with you know an axe to grind something like that and you don't know what that is.

Thus, the authorship model implicit in consumer locative media, wherein contribution is distributed among a potentially wide contributor community rather than a single, centralized source (section 2.4.1.1), presented challenges to participants, such as Jane, more accustomed to a print/traditional-media authorship/publication model. Even in

Jane's case, however, it is not the inherent inaccuracy of crowd-sourced data – a problematic raised by Goodchild (2008) – that is the concern, but the supposed biases of agendas of those predisposed to contribute consumer locative annotations. Examining the extent to which locative media users, in general, distinguish between crowd-sourced information, and “official”/authoritative data in making value judgments around digital representations of place, is a question deserving of more sustained attention. Such research might usefully build on the present study's attention to the differences the *content* of locative annotations make to users' perceptions of place. Moving beyond a landscape-as-locatively-mediated-landscape lens, a stronger focus on *users'* understandings of questions of authorship (versus theoretical explorations of authorship, or a focus on the dynamics contributor communities) might entail critical geographers' usefully directing attention towards accenting our understandings of the political economy of locative media production. Minimally, beginning from an empirical understanding of locative media consumers' experiences and understandings of authorship, geographers might begin to explicate in more (theoretical and empirical) detail the potential for transformative (or other) political agendas inherent in consumer locative media platforms.

### **8.3 The temporality of locatively mediated landscape**

the more one examines close shots of the crowd, the more one is reminded of early-nineteenth-century photography, where long exposures often resulted in ghost figures. These fugitive figures emerged from the gaze locked within three-point perspective and subject to the limits of early photochemical emulsions. [Here] a different mechanism is at play: the tolerances of algorithmic



assembly; but the ephemeral, nevertheless, seems to pose a very real challenge to the system

(Uricchio 2011, 29).

The temporality of the locatively mediated landscape emerged quite strongly from my interviews and surveys as a theme engaged either explicitly or indirectly by locative media users. The temporal dimension of locative media is something that has occupied my personal thinking on the topic of locative media and digital representations of place more generally since my “discovery” in 2010 of the jarring juxtaposition between two sets of imagery in Google Street View’s representation of downtown Lexington, Kentucky.

When I first arrived in Lexington in 2007, the Dame – a bar and music venue on Main Street – was the place to be. It’s where I discovered one of my favorite artists, ’80s night, that hipsters aren’t all bad, that fifty cent PBRs were real, and made many significant and trivial memories; it’s where I met Mary. The Dame was destroyed, along with its entire block – a hat shop, a jeweler, a down-at-heel pool hall – within the year. The so-called “CentrePointe” block – the vacated site of this former vibrant, urban landscape – is a well-known blight on the Lexington landscape.

I remember the arrival of Lexington’s latest round of downtown renewal well. As part of Richard Schein’s landscape class, two years later, graduate students were asked to explore various components of the archive related to this by then politically-charged site in downtown Lexington. Street View was not part of the project; I pulled Sanborn maps from the Map Library. But, in common with many of my participants’, Street View was,

and remains, my go-to first stop for orienting myself in a new place, for scoping out a proposed trip, for aimless exploration/research. *What if the Dame lived on in Street View?*, I wondered. I was disappointed. From Main Street, I viewed the sorry sight of rubble and chain-link, all too familiar from my daily dawn commute through downtown.

Google was up-to-date, and what a sad reflection of a depressing situation was captured in the bland, milky-skied bleak imagery of a gutted city center.

But then, I dragged Pegman – good old Pegman<sup>38</sup> - around to Vine Street, to the “back” of the Dame’s block. And I felt butterflies. Joe Rosen, the jeweler, was there! I could see Mia’s, “the other gay bar”, a little way down. Exceptionally happy memories flooded my soul. Right there in the coffee shop, inexplicably to those around me, I cried (a little). It was many weeks before I returned to that particular study spot. I pictured the Dame and its Friday ’80s nights, its Saturday concerts and its dusty, decrepit midweek happy hours. Unknown Hinson. Shooter Jennings. A Google placemark identified the Dame: “permanently closed”. I “reopened” it; if only. Two days later, somebody closed it and reported my Google account.

Apart from the personal significance of this site, this point in digiplace, the Dame story speaks to broader questions of temporality in the locatively mediated landscape. These are questions I have begun to address in the context of published articles and chapters (M. Graham, Zook, and Boulton 2012; Boulton and Zook forthcoming) but these earlier explorations were largely anecdotal (although that is not necessarily a deficiency), arguably lacked the empirical corroboration of my participants’ experiences of/through

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<sup>38</sup> Pegman is the name given to the “peg man” icon within Google Maps that one may move to a particular street location in order to view Street View imagery at that address.

the temporality of locatively mediated landscape. In light of my participants' reports of the significance of time – whether explicit or implicit – in their experiences in Kenwick, I want to make some brief comments about what has elsewhere been termed “timeless power” (M. Graham, Zook, and Boulton 2012), a set of concerns that resonates more broadly with theorizations of time and place/landscape.

### 8.3.1 A digital derive through Lexington, Kentucky



**Figure 8.3.** downtown Lexington, KY. Source: Google StreetView on Android phone.

(Retrieved: December 8, 2010.)<sup>39</sup>

Head west down Main St. in Lexington, Kentucky. As you approach the very heart of downtown where this main east-west corridor intersects a major north-south thoroughfare, look left: a “sidewalk closed” sign hangs precariously from a jutting chain link fence circumscribing the perimeter of an entire downtown block. Is this the right place? Is this the location of the tallest building in Kentucky, scheduled to be complete, by now, in time for the World Equestrian Games? The building you “flew” through, picking out a favored courthouse-view condominium, on the developer’s Web site just hours ago? Scanning to the right, it is with some confusion and perhaps a little relief that you observe the familiar Victorian facades of Main Street businesses opposite the development site intact. This is the correct location – the streets and intersections are signed clearly – but there is no new “Lexington landmark” to be seen.

This prime piece of real estate, this (former) hub of entertainment and old-timey quirkiness, lies derelict: a crater, surrounded by a fence, overlooked by security cameras. The left turn you want to make in order to investigate more thoroughly the cratered wasteland is blocked. But from the street corner you can see enough: the remains of bars, then the pawn broker, then the jewelry store lay flattened, unrecognizable. Three of the city’s liveliest nightspots – two live music venues, a pool hall – are no more. Likewise, Lexington’s oldest jeweler has disappeared. All closed or relocated. In their place, not a “multi-use” building, not a spectacular landmark, not a spur to economic and cultural (re)vitalization, but a rubble-strewn wasteland.

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<sup>39</sup> A heavily modified version of this opening vignette is included in a paper with Matt Zook and Mark Graham (M. Graham, Zook, and Boulton 2012)

Then, as you take a couple of hurried left turns, to explore the back side of the block something strange happens. The rubble disappears, the sun comes out, pedestrians walk the previously torn up sidewalk. Looking back down the blocked street, buildings have reappeared. The parking meters beside the jewelry store are occupied; business and life go on as normal. You turned away for less than a minute to circle to the far side of the block, and in that time the architecture had been reconstructed, businesses relocated, and the weather transformed.

In a forthcoming *Transactions* paper, Mark Graham, Matt Zook and I began to develop some thoughts around the temporality of locatively mediated landscapes in terms of timeless power. We do so in the context of what we refer to as “types” of power within a broader discussion about the power-laden landscapes of/in augmented realities and locative media in general. Here, I want to touch on some of those ideas in light of my empirical findings in Kenwick.

We introduce *timeless power* – along with distributed power, communication power and code power – to characterize the complex flattening or eliding of chronology in the production of of-the-moment augmented reality representations. Recall that timeless power (see section 2.4.1.4) refers to the ways in which digital representations of place reconfigure temporal relationships, particularly sequence and duration, between people and events. Part of this temporal problematic lies in the conflation – necessary in the context of products such as augmented reality applications – of presence (qua presence of annotations) with the present (i.e. that the present annotations describe the current nature of that location). The participant who described his excitement at learning the neighborhood was brass-band-friendly, on the basis of a placemark illustrating a brass

band performance, playfully recognized – even as he gained emotional satisfaction from – the ephemerality of locative annotations.

Mike: Yeah, they have a brass band...

AB: ...where?

Mike: First thing I wanted to see. In the front yard, over there.

AB: Oh, in the placemark?... [referring to one of the placemarks, pictured below, provided to subsets of participants in both the online and face-to-face components]

Mike: ...the yellow house, yeah. The sign said refreshments but I saw the brass band playing.

AB: Right.

Mike. I thought that was pretty neat. They allow brass bands which makes it a good neighborhood to my mind [laughter]

Presence/present is a useful heuristic because there is evidence both that it successfully describes users' engagements with temporally ambivalent locative annotations (presence) and current (present) exploration, *and* that participants playfully, and cognizantly, engage with questions of time. At a broader level it flags the significance of power in locative media – particularly distributed power and code power – in conferring relative permanency to particular locative annotations vis-à-vis other, more fleeting representations of place.

Two interviewees “admitted” to having preempted their walks around Kenwick by briefly exploring the neighborhood online (using Google Earth or Google Maps). While both mentioned that their impressions of the neighborhood were generally more favorable

following in-person exploration, one participant suggested that the specific timing of the Street View imagery was significant in conferring a particular impression of the neighborhood:

The first place I landed online there was trash out on the sidewalk. ... I didn't see any of that today [during the walk]. I don't know if it was maybe trash day or something else? But that definitely skewed what I was thinking, expected, and it wasn't like that. It was a lot more cheerful.

Asking in more detail about what specific markers of “cheerfulness” were absent in the online exploration, she suggested that the overcast conditions at the time of the images’ collection might have been a factor: “everything was gray; there was no color or so it seemed but the reality was flowers, and colors, well, it’s summer and that would account for it”. The Street View imagery of Kenwick, at the time of writing (Spring 2013) appears to comprise a composite of images from at least two separate occasions, one in July and one in September of 2007. While parts of the neighborhood are pictured under the bright blue skies of a late summer’s afternoon, significant portions are pictured under a drab midsummer haze. Adding a third temporal layering, Google’s satellite imagery of the neighborhood (used in both Google Maps and Google Earth) is a much more recent data set depicting the area on a clear, late summer morning. Construction projects, ongoing in the Street View imagery are long since complete in the satellite view, buildings present in the 2007 data set torn down or severely modified by 2012, but to the casual observer these images comprise a coherent view of the neighborhood that simply “is” as presented. In the case of both Street View and the satellite imagery, these data sets

travel outside of the confines of the delineated Google Maps and Google Street View interfaces to be integrated in various dynamic and static presentations online (realtor and other property-based services being prominent examples) where they contribute in more-or-less powerful ways towards available representations of places. It remains an open question the extent to which the temporal “fixing” of a place at a moment in time (with associated lighting, weather, seasonality, image quality, etc.) within ostensibly current or real time visual representations works to frame perceptions of a place. The limited evidence available from this study suggests that, on occasion at least, interviewees engaged explicitly with these questions of temporality, specifically as they related to the observable differences between represented and actually-existing neighborhood features. Recall that even in the online exercise, one participant stated that imagery “from different times of day and the changing of the seasons” would provide a welcome enhancement to the online interface.

### **8.3.2 (Dis)placing memory: memorialization, locative media and Benjamin’s city**

I am not the first person to suggest the use of Walter Benjamin’s work with reference to Google’s mapping products, but the intention here is rather different from that of Kingsbury and Jones (2009). I want to place Benjamin (Benjamin, Eiland, and MacLaughlin 1999) in dialog with de Certeau (1984) to explore the city as a site/sight of ghosts, echoes, relics – in short, as a site of memory placed and displaced. Benjamin speaks very directly to the *materiality* of memory, and to the affectivity and agency of material fragments – buildings, artifacts, sounds, smells, texts – within the city: to their agency to call the past into the present, to awaken the “dead” into the living. All the time,



the mundane relics of modernity's "prehistory" (Savage 2000, 39) – facades of buildings, abandoned furniture, tabletop ornaments, dilapidated railway stations – are "exploded" (Buck-Morss 1989, 95) out of their time, or any time in particular, to do their (affective, imaginative, memorial) work here, in the "present", temporally and spatially.

In general, I think there is value to thinking through (mercenarily?) Benjamin's notion of time and temporality as nonlinear and non-narrative, as it relates to an urban experience shot through with "invocations": that is, with echoes of times and experiences past, arguably, I suggest, including locative spatial annotations as codified remnants of past experience. I want to suggest that, in (re)asserting a sense of memory that is both "about a place" *and* "not localizable", de Certeau (1984, 108-9) echoes Benjamin's analysis of memory as at once placed *and* displaced, actual and imagined and points to the complex ways in which locative placemarks are not simply "read" as data but may, in practice, combine with other affective/embodied experiences. I will return to the idea of displacement below, but for now I will define (dis)placement as the ways in which memory is at once anchored and free-floating in respect of its original (spatial-temporal) location. In parallel, I would argue that the memorialization moment inherent to placemarking (annotation) has a similarly ambivalent status in respect to its placement in time and place; that is, temporally distant annotations work with one another and with other markers, cues, memories and temporalities (referencing this place and others, produced/consumed in this place and elsewhere) within the "excessive", over-coded event of being in the landscape (Edensor 2005).

Describing the coffee houses of his youth, Benjamin asserts the primacy of "the place itself" in conferring memory: the power of sights and smells, the spatial arrangement of

the cafés, their booths and hidden recesses. “Just as in general, here more than elsewhere, the human figures receded before the place itself” (Benjamin 2009, 24). Lamenting the building’s subsequent “renovation” – and its becoming a place of business and pleasure – there is an implicit appeal to authenticity, to a richness and wealth of sociality recorded, somehow, in the material palimpsest of the landscape itself. But once authenticity is claimed, named, is reified, the object(ified) ceases to exist outside of its representation; it descends, in other words, to simulacrum, to the hyperreal or in the language of Wilson (2011): when codified, claimed, converted to “data”, locative spatial annotations are stripped of the subjective content both of their production and of the conditions they seek to document. But, I would argue, this incompleteness, this lack of “social metadata” (i.e. the conditions of the production of the spatial data), could be read, more optimistically as a productive gap into which and from which other readings, experiences and futures might flow. Indeed, as Lowy (1985) notes, the biggest thing Benjamin does in terms of time is precisely to reject a linear, progressive, chronological view of history. This is important because in the fragments of the past –the sounds that remind Benjamin of school, the annotation that claims this is a fun, crime-ridden or significant place and thus evokes an emotional/memorial response from the “consumer” – are futures to be realized rather than (and as well as) pasts to be recovered. The past(s) and present become copresent, temporally and spatially. In my reading, rather than simply seeking to return to the (precapitalist? Premodern?) past – although antimodernist, anticapitalist sensibilities are part of Benjamin’s politics – these historical fragments are animated in and brought to bear on the present. In that sense, disrupting progress becomes not about freezing time, but rather, about seeing in these relics of the past the traces of other pasts and the

glimmers of other possible futures. As a political moment, his method of “awakening” – this very individualized, subjective engagement with materiality and memory – is less than straightforward; there is no teleological outcome sought, no correct way to read/perceive the landscape. In this context, control of the availability (and means of production) of those materials available for individuals’ consumption – digital images, annotations – becomes central to the politics of representation and memorialization.

If place is central to Benjamin’s autobiographical recollections – in the sense that place forms both the substance of memory and the stage on which it is (s)played out, taking precedence over the interpersonal/intersubjective relationships one might more typically associate with autobiography – it is interesting to consider this place-memory dialectic in more detail. Memory is placed – in the recollections of cafés, school rooms – in the sense that, for Benjamin, material contexts appear as more than a backdrop against which life is played out; places become the very stuff of memory, the definition of autobiography. Whilst place is linked inextricably with the performances it permits, engenders, encourages, for Benjamin the power of place is unrelated to the duration of acquaintance with it (Benjamin 1955, 27). Rather, the affective power of place is the product of a denser, less tangible (emotional, psychological) effects. Thus, in a sense, memory is also displaced. By displaced I mean that the affective power of memory – its ghosts, placemarks, traces, echoes, whether visual, haptic or otherwise – need not refer to any particular place (as in location), in the same way that place need not correspond to any particular time (as in present versus past). For example, as Benjamin notes, the emotion inherent in his performance – endurance – of the school building does not rely on a return to that particular (locational) place. Rather, its smells, its sights – appearing years later

and miles apart – conjure up that same loathing, fear and helplessness “in ever-new places” (Ibid., 26)”. It might be useful to distinguish heuristically at this point between “recollection” and “memory”: in Proustian terms, the former would refer to the “voluntary memory” of the codified annotation, the autobiography; the latter, to the “involuntary memory” triggered through the event of perceiving in situ that codified memorialization in conjunction with emotional unpredictability of being (for example: Crang and Travlou 2001).

This is perhaps the aspect of Benjamin that I find most instructive: the idea that we (he) may be accosted – interpellated – by these involuntary memories, by traces of past experiences both in the form of codified, official discourses and spatial annotations, but also in the highly personalized and embodied practices of/with locative media that are irreducible to reading. In de Certeau’s terms the material object, the “trace” can be thought of as synecdoche – where the fragment is made to “play the role of the whole” (1984, 101); the Yelp.com review stands in for the totality of “worst food ever” and the social conditions and memories elided and evoked by such a codification; the “damp odour” (1955, 13) of the school hall stands for the school, for childhood, for hell. This is the sense in which de Certeau’s (1984) conceptualization of “memory” adds to Benjamin’s: Amongst the layered cartographies of planners, maps, and the “strange toponymy [of place names] that is detached from actual places” (104), floats another immanent field – of memory and affect: “the memorable”, he says, “is that which can be dreamed about a place” (109). What can be dreamed about a place?: that which has already been experienced, and increasingly that which has been experienced is captured, however inadequately, as a digital marker – a Tweet, a review, a piece of georeferenced

detritus. In this way, memorialization via annotation becomes “anti-museum” in de Certeau’s words; cyberspace has no specific time and no particular place, or existence (an echo, a ghost, a shadow) beyond its embodied articulation with the materiality of experience. If we embody – and in our engagements with the materiality of the city *it* embodies – traces of past encounters, past experiences, past fears and past decisions, then the present, not to mention the future, becomes far less stable, less given and less natural. By considering those intangible, affective elements of spatial practice, Benjamin offer us the prospect of an experience of place outside of the contrived spectacles of the (post)modern city – an individual, emotional experience of ghosts, echoes, and relics that goes far beyond the visual. More pragmatically, it suggests the need for geographers to consider with more theoretical complexity the politics of memory and memorialization in an era of ubiquitous geocoded traces of individual (and aggregated) lives. Besides questions of authorship and ownership – who creates and controls the mechanisms by which particular discourses are concertized as digiplace – this speaks to broader questions of privacy in an era of merciless memory wherein potentially limitless voluntarily- and involuntarily-contributed geocoded data about individuals’ movements, proclivities, etc. may be stored and recombined continuously (Dodge and Kitchin 2007a)

#### **8.4 Concluding thoughts**

To date, studies of locative media have been broadly distributed across the social sciences, and critical accounts of the practices, representations and institutions implicated

on this broad terrain have shed considerable light on these emerging phenomena. This dissertation project is directed primarily towards asserting the essential role that geography and geographers play, and must play, in these substantive and theoretical endeavors.

Because locative media is such a broad topic and encompasses – rightly – a broad range of disciplinary and commercial concerns, we must be cautious of broad, overarching claims and meta-theories that attempt to account for the totality of locatively mediated experience. We must be equally cautious, I would suggest, of those accounts of locative media technologies and digital representations of place, however eloquent, subtle and sophisticated, that proceed largely on the basis of assertion and with recourse to critical literatures extant to characterize the fundamental novelty or paradigmatically different terrain of digitally mediated (versus “traditional”, cultural) landscape. There is a vital place for theory-building, but I subscribe to an old-fashioned view that lived experience – or *verstehen* as the phenomenologists might have it (Schutz 1954) – and not armchair pontification might be a more appropriate basis for such generalization as is sustainable. Humanistic geographies, writ large, insist on the fundamentally social nature of knowledge and the research process – processes from which more broadly applicable processes or analytical constructs may be abstracted. It is the texture and diversity of lived experience that motivates my argument that particularity matters.

Particularity matters in terms of locative media technologies which vary according to the subjects by which they are consumed and produced, the platforms and devices through which they are delivered, and the places in which they are put to work. Particularity matters in terms of place given the wildly divergent ways in which different locations are

represented in digiplace. Augmented reality usage in San Francisco or Disney Land or Central London has no necessary equivalence with a Google Maps representation of restaurants in Milwaukee, or community activists' participant GIS representations of their Seattle neighborhood (Wilson 2011). No necessary equivalence, but to the extent that there are commonalities between the power-laden cartographic, embodied, (gendered, racialized, etc.) practices around cartographic representations in each case, critical geographers' crucial role is to explicate the ways in which the digital matters in the production and experience of landscape.

This dissertation research illustrates, above all, the need to situate locative media within the theoretical and substantive purview of geographies of lived places and everyday life: specifically, cultural landscape studies. The specific findings of this study highlight the significance of locative media in mediating subjective experiences of a particular residential landscape. To that extent, I was able both to elaborate a conceptualization of landscape aesthetics that builds on and refines earlier poststructuralist landscape work on aesthetics, but also to elaborate a methodological approach to locatively mediated landscape with broader applicability.

As a methodological framework, this study suggested at least three more generally applicable axioms for the reading of contemporary cultural landscapes under the auspices of ubiquitous locative media. The empirical bases of these proposed axioms are illustrated and, I think, flagged clearly throughout the methodological-empirical components of this study. In this summary section I seek only to provide examples, in general terms, of the broad claims made and, more importantly, to suggest outstanding topics that require further elucidation by critical geographers on the basis of future

empirically grounded work. These axioms are provided, in the spirit of Pierce Lewis not as transcendent truths always and everywhere applicable but as propositions that might form the basis of thorough, empirically grounded and subtle accounts of the actual workings of cultural landscape qua locatively mediated landscape in spatially and temporally particular contexts.

*Locative media comprise/are important actors in the cultural landscape through which individuals seek and create information about landscapes.* For example, my participants (both “online” and offline”) engaged directly with locative annotations of place, assuming their claims to be authoritative, or at least warranting discussion, vis-à-vis other sources of information. What practices, politics and biases govern the production of the locational annotations that form the (largely unquestioned) backdrop to locatively mediated experiences of place? Important questions in this vein remain incompletely addressed, despite geographers’ growing attention to the political economy of neogeographic and “big” data production.

Additionally, geographers might profitably examine, comparatively, practices of locative media usage. How do the consumption practices of locative media technologies vary from place-to-place and subjectively? For example, in what ways are locative media gendered both in the visualities implicit in their authorship and display, and in terms of the embodied practices of their performance/consumption?

*There is no necessary distinction (i.e. incommensurability) between locative media representations of landscape and “established” cartographic, artistic (etc.) representations of landscape.* The visualities implicit in locative media representations mirror, in particular cases, the orientations of power, control and synopsis inherent in



“traditional” representations of landscape extant (e.g. bird’s eye views). The empirical findings of this study suggest, however, that, even in the context of offline or Remote-Based exploration of place, the God’s eye synoptic gaze of the omniscient, masculinist subject is not unproblematically experienced by participants. To the contrary, the embodied practices of/with locative media suggest more complex relationships between subjects and their (interpretations of) representations of landscape. In what ways do specific locative media representations – in specific places, at specific times, for specific subjects – entail particular regimes of visibility? What commonalities join various, diverse, forms of locative media in respect of the politics of representation (writ large)? What opportunities exist for the subversion of dominant representations of place and how are these enabled or foreclosed by specific locative media technologies and practices?

*Time is an important and under-explored dimension of locative media.* Specifically, as I mention in section 8.3, above, geographers can play an important role in tracing out the significance of “timeless” representations of place such as those presented via dominant consumer locative media platforms.

Finally, it is my hope and expectation that although (necessarily) novel now, the claim that landscape and locatively mediated landscape are one and the same, will, just a handful of years hence, seem unremarkable, commonsense even. The present study and the methodological framework it advances represent an evolution rather than a revolution in the conceptualization of the digital augmentation of landscape. Indeed, as I have illustrated at significant (perhaps laborious!) length, the argument about the intrinsic role of digital technologies in the construction of space is not novel; from a variety of interdisciplinary perspectives, the role of information technologies in mediating/producing

space has been explored at great length. The modification suggested here is, above all, a change of emphasis, and, specifically, a broadened methodology. If – and because – locative media are tied up in the power-laden geographies of cultural landscapes and the deep, subjective meanings attached to and derived from landscape, the critical tools and methodologies of cultural landscape studies are urgently required in this substantive arena. Empirical work on ordinary landscape is fundamental to this revivification of a cultural landscape studies tradition concerned with landscape as epistemology, as an idea and a tangible, everyday, experienced, lived materialization of discourse (analog and digital).

## 9. Appendix

### 9.1 Complete survey questions

How would you describe your gender?	Male, female, other, declined
How old are you?	Number
	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your level of familiarity with [Google Maps?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your level of familiarity with [Browsing the Internet?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your level of familiarity with [Google StreetView?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
Do you agree or disagree with the following statements about the neighborhood? [• This neighborhood seems to have interesting architecture]	Strongly agree, agree, neutral, disagree, strongly disagree
Do you agree or disagree with the following statements about the neighborhood? [• The neighborhood seems to be historically significant]	Strongly agree, agree, neutral, disagree, strongly disagree
Do you agree or disagree with the following statements about the neighborhood? [• It seems that people take good care of their homes]	Strongly agree, agree, neutral, disagree, strongly disagree
Do you agree or disagree with the following statements about the neighborhood? [• The neighborhood seems to be well-served by grocery stores]	Strongly agree, agree, neutral, disagree, strongly disagree
Do you agree or disagree with the following statements about the neighborhood? [• The neighborhood seems like it would be a safe place to bicycle]	Strongly agree, agree, neutral, disagree, strongly disagree
Do you agree or disagree with the following statements about the neighborhood? [• The neighborhood seems well-served by public transportation]	Strongly agree, agree, neutral, disagree, strongly disagree

If you were to summarize what this neighborhood is like to a friend who had never been there before, what would you say?	Text
Based on your exploration of the neighborhood today, what seems in your opinion seems to be the best or most desirable characteristic or feature of the neighborhood?	Text
Based on your exploration of the neighborhood today, what seems to be the worst or least desirable characteristic or feature of the neighborhood?	Text
What additional types of information or features could be added to these maps/StreetView to allow you to gain a fuller understanding of the neighborhood?	Text
Thinking about your experience with Google Street View and Google Maps today, to what extent do you agree or disagree with the following [Google Street View and Google Maps are a good way of finding out about a neighborhood without visiting]	Strongly agree, agree, neutral, disagree, strongly disagree
Thinking about your experience with Google Street View and Google Maps today, to what extent do you agree or disagree with the following [The additional information (placemarks) helped me to understand the character of the neighborhood]	Strongly agree, agree, neutral, disagree, strongly disagree
Thinking about your experience with Google Street View and Google Maps today, to what extent do you agree or disagree with the following [After visiting this neighborhood “virtually” I am more likely to want to visit it in real life]	Strongly agree, agree, neutral, disagree, strongly disagree
How would you describe your level of familiarity with [Using the Internet/web?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your knowledge about? [The different neighborhoods of Lexington?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your knowledge about? [The Kenwick neighborhood?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
How would you describe your knowledge about? [Your own neighborhood?]	Very familiar, somewhat familiar, neutral, somewhat unfamiliar, very unfamiliar
Overall, how similar is Kenwick to the neighborhood/place in which you feel most comfortable?	Very similar, somewhat similar, somewhat

Does Kenwick seem a more or less appealing place to live than your current neighborhood?

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Walkable]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Vibrant]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Eclectic]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Peaceful]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Neat]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [High crime]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Diverse]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Poor]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Scruffy]

In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Family friendly]

In your opinion, which of the following words accurately

dissimilar, very  
dissimilar  
Significantly more,  
more, equal, less,  
significantly less  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagree  
Strongly agree,

describe the Kenwick neighborhood? [Historical]	agree, neutral, disagree, strongly disagre
In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Attractive]	Strongly agree, agree, neutral, disagree, strongly disagre
In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Suburban]	Strongly agree, agree, neutral, disagree, strongly disagre
In your opinion, which of the following words accurately describe the Kenwick neighborhood? [Boring]	Strongly agree, agree, neutral, disagree, strongly disagre
How long did you spend viewing the neighborhood using the StreetView tool and the map/placemarks?	
Your preferences [My ideal home would be a large, new house]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [My ideal home would have a large lot/yard]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [I prefer houses with "character" to newer homes]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [I would want to live close to downtown]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [Given the choice between an old house and a new house, I would always choose a new house]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [Older homes tend to be built more solidly than new homes]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [Subdivisions and urban sprawl are ruining the character of US cities]	Strongly agree, agree, neutral, disagree, strongly disagre
Your preferences [I like craftsman-style architecture]	Strongly agree,

Your preferences [I like Victorian-style architecture]

agree, neutral,  
disagree, strongly  
disagre  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagre  
Strongly agree,  
agree, neutral,  
disagree, strongly  
disagre

Your preferences [I prefer a back yard deck to a front porch]  
Who made you aware of this research?

## 9.2 Interview Guide

- Please talk me through your route
  - Duration
  - Use GPS trace
  - Ask for reasoning
- If you were to summarize what this neighborhood is like to a friend who had never been there before, what would you say?
  - Architecture
  - Familiarity/similarity
  - feel
- Based on your exploration of the neighborhood today, what seems in your opinion seems to be the best or most desirable characteristic or feature of the neighborhood?
  - Why?
  - Personal preferences
- Based on your exploration of the neighborhood today, what seems to be the worst or least desirable characteristic or feature of the neighborhood?

### 9.3 User Experience

The included video file

## 10. Bibliography

- Abler, R. 1973. "The geography of communications." In *Transportation geography: comments and readings*, ed. Michael E Eliot Hurst, 327–346. New York: McGraw-Hill.
- Abler, R, John S Adams, and Peter Gould. 1971. *Spatial organization; the geographer's view of the world*. Englewood Cliffs, N.J.: Prentice-Hall.
- Adams, Paul C., and Rina Ghose. 2003. "India.com: The Construction of a Space Between." *Progress in Human Geography* 27 (4) (August 1): 414–437. doi:10.1191/0309132503ph437oa.
- Addison, Richard. 1999. "A grounded hermeneutic editing approach." In *Doing qualitative research*, ed. Benjamin F Crabtree and William L Miller, 145–161. Thousand Oaks, Calif.: Sage Publications.
- Albizu, J. A. 2007. "Geolinguistic Regions and Diasporas in the Age of Satellite Television." *International Communication Gazette* 69 (3) (June 1): 239–261. doi:10.1177/1748048507076578.
- Anderson, Chris. 2008. "The End of Theory: The Data Deluge Makes the Scientific Method Obsolete." *Wired Magazine*. [http://www.wired.com/science/discoveries/magazine/16-07/pb\\_theory](http://www.wired.com/science/discoveries/magazine/16-07/pb_theory).
- Anderson, Kay. 2007. *Race and the crisis of humanism*. London; New York: Routledge.
- Badiou, Alain. 2006. *Being and event*. Tran. Oliver Feltham. London: Continuum.
- Ball, Kylie, Adrian Bauman, Eva Leslie, and Neville Owen. 2001. "Perceived Environmental Aesthetics and Convenience and Company Are Associated with Walking for Exercise Among Australian Adults." *Preventive Medicine* 33 (5) (November): 434–440. doi:10.1006/pmed.2001.0912.
- Bar-Ilan, Judit. 2006. "Web Links and Search Engine Ranking: The Case of Google and the Query 'jew'." *Journal of the American Society for Information Science and Technology* 57 (12) (October): 1581–1589. doi:10.1002/asi.20404.
- Barlow, John Perry. 1996. "A Declaration of the Independence of Cyberspace." <https://projects.eff.org/~barlow/Declaration-Final.html>.
- Bartz Petchenik, Barbar. 1979. "From Place to Space: The Psychological Achievement of Thematic Mapping." *Cartography and Geographic Information Science* 6 (1): 5–12.
- Bataille, Georges. 2007. *The accursed share: an essay on general economy. 1, Consumption*. New York, NY: Zone Books.
- Battles, Matthew. 2012. "Wikipedia and the Sum of Human Knowledge." *MetaLab*. <http://metalab.harvard.edu/2012/07/wikipedia-and-the-sum-of-human-knowledge/>.
- BBC News. 2006. "BBC NEWS | Technology | Google Censors Itself for China." <http://news.bbc.co.uk/2/hi/technology/4645596.stm>.



- Benhabib, Seyla. 2004. *The Rights of the others: aliens, residents and citizens*. Cambridge: Cambridge University Press.
- Benjamin, Walter. 1955. "A Berlin Chronicle." *Reflections*: 1–60.
- . 2009. "On Some Motifs in Baudelaire." In *Poetry and cultural studies: a reader*, ed. Maria Damon and Ira Livingston, 37–55. Urbana: University of Illinois Press.
- Benjamin, Walter, Howard Eiland, and Kevin MacLaughlin. 1999. *The arcades project*. Tran. Rolf Tiedemann. Cambridge, MA [etc.]: Belknap Press.
- Benwell, Matthew C. 2009. "Challenging Minority World Privilege: Children's Outdoor Mobilities in Post-apartheid South Africa." *Mobilities* 4 (1) (March): 77–101. doi:10.1080/17450100802657970.
- Best, Kirsty. 2010. "Concealing Screens: Consent, Control and the Desiring User." *Reconstruction: Studies in Contemporary Culture* 10 (2).
- Bingley, Amanda. 2003. "In Here and Out There: Sensations Between Self and Landscape." *Social & Cultural Geography* 4 (3) (September): 329–345. doi:10.1080/14649360309081.
- Blomley, Nick. 2003. "Law, Property, and the Geography of Violence: The Frontier, the Survey, and the Grid." *Annals of the Association of American Geographers* 93 (1) (March): 121–141. doi:10.1111/1467-8306.93109.
- . 2004. *Unsettling the city: urban land and the politics of property*. New York: Routledge.
- . 2005. "Remember Property?" *Progress in Human Geography* 29 (2) (April 1): 126–129. doi:10.1191/0309132505ph535xx.
- . 2007. "The Borrowed View: Privacy, Propriety, and the Entanglements of Property." *Law & Social Inquiry* 30 (4) (March 2): 617–661. doi:10.1111/j.1747-4469.2005.tb01142.x.
- Blommaert, Jan, and Chris Bulcaen. 2000. "Critical Discourse Analysis." *Annual Review of Anthropology* 29 (January 1): 447–466.
- Boulton, Andrew. 2008. "The Popular Geopolitical Wor(l)ds of Post-9/11 Country Music." *Popular Music and Society* 31 (3) (July): 373–387. doi:10.1080/03007760701563518.
- . 2010. "Just Maps: Google's Democratic Map-Making Community?" *Cartographica: The International Journal for Geographic Information and Geovisualization* 45 (1) (January 1): 1–4. doi:10.3138/carto.45.1.1.
- . 2011. "Property and Aesthetics in an Ordinary American Landscape." *Geographical Review* 101 (2) (April): 224–242. doi:10.1111/j.1931-0846.2011.00088.x.
- Boulton, Andrew, Stanley Brunn, and Lomme Devriendt. 2012. "Cyberinfrastructures and 'Smart' World Cities: Physical, Human, and Soft Infrastructures." In *International handbook of globalization and world cities*, ed. Ben Derudder. Cheltenham; Northampton, MA: Edward Elgar.
- Boulton, Andrew, Lomme Devriendt, and Stanley Brunn. 2012. In *Cyberinfrastructures and "smart" world cities: physical, human and soft infrastructures*, ed. Ben Derudder. Cheltenham; Northampton, MA: Edward Elgar.
- Boulton, Andrew, Lomme Devriendt, Stanley Brunn, Ben Derudder, and Frank Witlox. 2011. "City Networks in Cyberspace and Time: Using Google Hyperlinks to

- Measure Global Economic and Environmental Crises.” *ICTs for Mobile and Ubiquitous Urban Infrastructures: Surveillance, Locative Media and Global Networks*, Hershey, PA: IGI Global: 67–87.
- Boulton, Andrew, and Matt Zook. forthcoming. “Landscape, Locative Media and the Duplicity of Code.” In *Companion to Cultural Geography*, ed. N Johnson and J Winders. Wiley-Blackwell.
- Bourdieu, Pierre. 1984. *Distinction: a social critique of the judgement of taste*. Cambridge, Mass.: Harvard University Press.
- Brunn, Stanley. 2003. “A Note on the Hyperlinks of Major Eurasian Cities.” *Eurasian Geography and Economics* 44 (4) (June 1): 321–324. doi:10.2747/1538-7216.44.4.321.
- Brunn, Stanley, and M. Dodge. 2001. “Mapping the ‘Worlds’ of the World Wide Web: (Re)Structuring Global Commerce Through Hyperlinks.” *American Behavioral Scientist* 44 (10) (June 1): 1717–1739. doi:10.1177/0002764201044010011.
- Buck-Morss, Susan. 1989. *The Dialectics of seeing: Walter Benjamin and the Arcades Project*. Cambridge (Mass.) [etc.]: The MIT Press.
- Budhathoki, Nama Raj, Bertram (Chip) Bruce, and Zorica Nedovic-Budic. 2008. “Reconceptualizing the Role of the User of Spatial Data Infrastructure.” *GeoJournal* 72 (3-4) (July 29): 149–160. doi:10.1007/s10708-008-9189-x.
- Bunge, W. W. 1973. “The Geography.” *The Professional Geographer* 25 (4) (November): 331–337. doi:10.1111/j.0033-0124.1973.00331.x.
- Burn-Murdoch, John. 2012. “Church Vs Beer: Using Twitter to Map Regional Differences in US Culture.” *Data Blog*. <http://www.guardian.co.uk/news/datablog/2012/jul/04/us-fourth-july-twitter-beer-church>.
- Butler, Judith P. 1996. *Excitable speech: contemporary scenes of politics*. New York: Routledge.
- Caquard, S. 2011. “Cartography I: Mapping Narrative Cartography.” *Progress in Human Geography* (November 7). doi:10.1177/0309132511423796. <http://phg.sagepub.com/cgi/doi/10.1177/0309132511423796>.
- Carlson, A.A. 1977. “On the Possibility of Quantifying Scenic Beauty.” *Landscape Planning* 4 (January): 131–172. doi:10.1016/0304-3924(77)90015-6.
- Del Casino, Vincent, and Stephen Hanna. 2006. “Beyond The ‘Binaries’: A Methodological Intervention for Interrogating Maps as Representational Practices.” *ACME* 4 (1): 34–56.
- Castells, Manuel. 1996. *The information age: economy, society and culture*. Malden, Mass.: Blackwell Publishers.
- . 2000. *The information age: economy, society and culture*. Malden, Mass.: Blackwell.
- . 2009. *Communication power*. Oxford; New York: Oxford University Press.
- De Certeau, M. 1984. “Walking in the City.” In *The Practice of Everyday Life*, 91–110. University California Press.
- Cloke, Paul, and Owain Jones. 2001. “Dwelling, Place, and Landscape: An Orchard in Somerset.” *Environment and Planning A* 33 (4): 649–666. doi:10.1068/a3383.

- Coleman, B. 2012. "Everything Is Animated: Pervasive Media and the Networked Subject." *Body & Society* 18 (1) (March 28): 79–98. doi:10.1177/1357034X11433488.
- Conzen, Michael P. 1984. "The County Landownership Map in America Its Commercial Development and Social Transformation 1814–1939 1." *Imago Mundi* 36 (1) (January): 9–31. doi:10.1080/03085698408592569.
- Cormack, Lesley B. 1991. "'Good Fences Make Good Neighbors': Geography as Self-Definition in Early Modern England." *Isis* 82 (4) (December 1): 639–661.
- Cosgrove, Denis. 1985. "Prospect, Perspective and the Evolution of the Landscape Idea." *Transactions of the Institute of British Geographers* 10 (1). New Series (January 1): 45–62.
- . 1998. *Social formation and symbolic landscape*. Madison, Wis.: University of Wisconsin Press.
- . 2003. *Apollo's eye: a cartographic genealogy of the earth in the western imagination*. Baltimore, Md.; London: Johns Hopkins University Press.
- Crabtree, Benjamin F, and William L Miller. 1999. *Doing qualitative research*. Thousand Oaks, Calif.: Sage Publications.
- Crampton, Jeremy. 2001. "Maps as Social Constructions: Power, Communication and Visualization." *Progress in Human Geography* 25 (2) (June 1): 235–252. doi:10.1191/030913201678580494.
- . 2004. "GIS and Geographic Governance: Reconstructing the Choropleth Map." *Cartographica: The International Journal for Geographic Information and Geovisualization* 39 (1) (March 1): 41–53. doi:10.3138/H066-3346-R941-6382.
- . 2009a. "Being Ontological: Response to 'Poststructuralism and GIS: Is There a 'disconnect'?'." *Environment and Planning D: Society and Space* 27 (4): 603–608. doi:10.1068/d1607a.
- . 2009b. "Cartography: Maps 2.0." *Progress in Human Geography* 33 (1) (February 1): 91–100. doi:10.1177/0309132508094074.
- . 2010. "Cartographic Calculations of Territory." *Progress in Human Geography* 35 (1) (January 28): 92–103. doi:10.1177/0309132509358474.
- Crampton, Jeremy, and John Krygier. 2006. "An Introduction to Critical Cartography." *ACME* 4 (1): 11–33.
- Crang, Mike, and Penny S Travlou. 2001. "The City and Topologies of Memory." *Environment and Planning D: Society and Space* 19 (2): 161–177. doi:10.1068/d201t.
- Crutcher, Michael, and Matthew Zook. 2009. "Placemarks and Waterlines: Racialized Cyberscapes in post-Katrina Google Earth." *Geoforum* 40 (4) (July): 523–534. doi:10.1016/j.geoforum.2009.01.003.
- Culler, Jonathan. 1981. "Semiotics of Tourism." *The American Journal of Semiotics* 1 (1/2).
- Dalton, Nick. 2007. "Is Neighborhood Measurable?" In *Proceedings of the 6th International Space Syntax Symposium*, 88:1–12. Istanbul.
- Daniels, Stephen. 2001. "Marxism, culture and the duplicity of landscape." In *New models in geography: the political-economy perspective*, ed. Richard Peet and Nigel Thift. London: Routledge.

- Deleuze, Gilles, and Félix Guattari. 1983. *Capitalism and schizophrenia*. Minneapolis: University of Minnesota Press.
- DeLysér, D., and D. Sui. 2012. "Crossing the Qualitative-quantitative Divide II: Inventive Approaches to Big Data, Mobile Methods, and Rhythmanalysis." *Progress in Human Geography* (April 23). doi:10.1177/0309132512444063. <http://phg.sagepub.com/cgi/doi/10.1177/0309132512444063>.
- Denise.
- Denstadli, J, and M Gripsrud. 2010. "Face to face by travel or picture : the relationship between travelling and video communication in business settings." In *International business travel in the global economy*, ed. Jonathan V Beaverstock, 217–238. Farnham, Surrey; Burlington, VT: Ashgate. <http://site.ebrary.com/id/10362169>.
- Derudder, Ben. 2006. "On Conceptual Confusion in Empirical Analyses of a Transnational Urban Network." *Urban Studies* 43 (11) (October 1): 2027–2046. doi:10.1080/00420980600897842.
- Devriendt, Lomme, Andrew Boulton, Stanley Brunn, Ben Derudder, and Frank Witlox. 2009. "Major Cities in the Information World : Monitoring Cyberspace in Real-time". Loughborough University. Department of Geography, Globalization and World Cities Study Group and Network. <http://www.lboro.ac.uk/gawc/rb/rb308.html>.
- . 2011. "Searching for Cyberspace: The Position of Major Cities in the Information Age." *Journal of Urban Technology* 18 (1) (January): 73–92. doi:10.1080/10630732.2011.578410.
- Devriendt, Lomme, Ben Derudder, and Frank Witlox. 2008. "Cyberplace and Cyberspace: Two Approaches to Analyzing Digital Intercity Linkages." *Journal of Urban Technology* 15 (2) (August): 5–32. doi:10.1080/10630730802401926.
- Dewsbury, John David. 2003. "Witnessing Space: 'Knowledge Without Contemplation'." *Environment and Planning A* 35 (11): 1907–1932. doi:10.1068/a3582.
- Dewsbury, John David, Paul Harrison, Mitch Rose, and John Wylie. 2002. "Enacting Geographies." *Geoforum* 33 (4) (November): 437–440. doi:10.1016/S0016-7185(02)00029-5.
- Diani, Mario. 2000. "SOCIAL MOVEMENT NETWORKS VIRTUAL AND REAL." *Information, Communication & Society* 3 (3) (January): 386–401. doi:10.1080/13691180051033333.
- Dodge, Martin. 2010. "Code/space." *Urbis Research Forum Review*.
- Dodge, Martin, and Rob Kitchin. 2004. "Flying Through Code/space: The Real Virtuality of Air Travel." *Environment and Planning A* 36 (2): 195–211. doi:10.1068/a3698.
- . 2007a. "'Outlines of a World Coming into Existence': Pervasive Computing and the Ethics of Forgetting." *Environment and Planning B: Planning and Design* 34 (3): 431–445. doi:10.1068/b32041t.
- . 2007b. "The Automatic Management of Drivers and Driving Spaces." *Geoforum* 38 (2) (March): 264–275. doi:10.1016/j.geoforum.2006.08.004.
- Dodge, Martin, and Chris Perkins. 2008. "Reclaiming the Map: British Geography and Ambivalent Cartographic Practice." *Environment and Planning A* 40 (6): 1271–1276. doi:10.1068/a4172.

- Dourish, Paul. 2006. "Re-space-ing Place." In , 299. ACM Press. doi:10.1145/1180875.1180921. <http://portal.acm.org/citation.cfm?doid=1180875.1180921>.
- Driver, F., and L Martins. 2002. "John Septimus Roe and the Art of Navigation, C. 1815-1830." *History Workshop Journal* 54 (1) (September 1): 144-161. doi:10.1093/hwj/54.1.144.
- Duncan, James S, and Nancy Duncan. 2004. *Landscapes of privilege : aesthetics and affluence in an American suburb*. New York: Routledge.
- Duncan, James S., and Nancy G. Duncan. 2001. "The Aestheticization of the Politics of Landscape Preservation." *Annals of the Association of American Geographers* 91 (2) (June): 387-409. doi:10.1111/0004-5608.00250.
- Van Dyke, Chris. Forthcoming. "Plastic Eternities and the Mosaic of Landscape." *Environment and Planning D: Society and Space*
- Eades, Gwilym. 2010. "An Apollonian Appreciation of Google Earth." *Geoforum* 41 (5) (September): 671-673. doi:10.1016/j.geoforum.2010.03.006.
- Edensor, Tim. 2005. *Industrial ruins : spaces, aesthetics, and materiality*. Oxford [U.K.]; New York: Berg.
- Elwood, Sarah, Michael F. Goodchild, and Daniel Z. Sui. 2012. "Researching Volunteered Geographic Information: Spatial Data, Geographic Research, and New Social Practice." *Annals of the Association of American Geographers* 102 (3) (May): 571-590. doi:10.1080/00045608.2011.595657.
- Elwood, Sarah, and Deborah G. Martin. 2000. "'Placing' Interviews: Location and Scales of Power in Qualitative Research." *The Professional Geographer* 52 (4) (November): 649-657. doi:10.1111/0033-0124.00253.
- Epstein, I, B Stevens, P McKeever, and S Baruchel. 2006. "Photo Elicitation Interview (PEI): Using Photos to Elicit Children's Perspectives." *International Journal of Qualitative Methods* 5 (3).
- Evans, James, and Phil Jones. 2011. "The Walking Interview: Methodology, Mobility and Place." *Applied Geography* 31 (2) (April): 849-858. doi:10.1016/j.apgeog.2010.09.005.
- Fairclough, Norman. 1995. *Critical discourse analysis : the critical study of language*. London; New York: Longman.
- . 2001. *Language and power*. Harlow, Eng.; New York: Longman.
- Fitzgerald, David. 2004. "Beyond 'transnationalism': Mexican Hometown Politics at an American Labour Union." *Ethnic and Racial Studies* 27 (2) (March): 228-247. doi:10.1080/0141987042000177315.
- Fleck, Margaret, Marcos Frid, Tim Kindberg, Eamonn O'brien-Strain, Rakhi Rajani, and Mirjana Spasojevic. 2002. "From Informing to Remembering: Ubiquitous Systems in Interactive Museums." *Pervasive Computing*: 13-21.
- floatingsheep.org. 2012. "Floating Sheep." *Floating Sheep*. Accessed August 24. <http://www.floatingsheep.org/>.
- Florida, Richard. 2012. "Map of the Day: Church Vs. Beer." *The Atlantic Cities*. <http://www.theatlanticcities.com/arts-and-lifestyle/2012/07/map-day-church-vs-beer/2483/>.
- Foster, Hal, and Dia Art Foundation. 1999. *Vision and visibility*. New York: New Press.

- Gerlach, Joe. 2010. "Vernacular Mapping, and the Ethics of What Comes Next." *Cartographica: The International Journal for Geographic Information and Geovisualization* 45 (3) (January 1): 165–168. doi:10.3138/carto.45.3.165.
- Gibson-Graham, J. K., Stephen A Resnick, and Richard D Wolff. 2000. *Class and its others*. Minneapolis: University of Minnesota Press.
- Goldsmith, Jack L., and Tim Wu. 2006. *Who controls the Internet?: illusions of a borderless world*. New York: Oxford University Press.
- Goodchild, Michael F. 2007. "Citizens as Sensors: The World of Volunteered Geography." *GeoJournal* 69 (4) (November 20): 211–221. doi:10.1007/s10708-007-9111-y.
- . 2008. "Spatial Accuracy 2.0." In *Proceeding of the 8th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences*. Shanghai.
- Google, Inc. 2012. "Our Products and Services – Company – Google." *Google / Company*. <http://www.google.com/about/company/products/>.
- Gore, Al. 1998. "The Digital Earth: Understanding Our Planet in the 21st Century." In Los Angeles, CA.
- Graham, Mark. 2011a. "Cloud Collaboration: Peer-Production and the Engineering of the internet." In *Engineering Earth the impacts of megaengineering projects*, ed. Stanley Brunn. Dordrecht: Springer. <http://site.ebrary.com/id/10459343>.
- . 2011b. "Time Machines and Virtual Portals: The Spatialities of the Digital Divide." *Progress in Development Studies* 11 (3) (June 21): 211–227. doi:10.1177/146499341001100303.
- . 2012. "The Knowledge Based Economy and Digital Divisions of Labour." In *Companion to Development Studies*, ed. V Desai and R Potter. 3rd ed. Hodder.
- Graham, Mark, Matthew Zook, and Andrew Boulton. 2012. "Augmented Reality in Urban Places: Contested Content and the Duplicity of Code." *Transactions of the Institute of British Geographers* (August): no–no. doi:10.1111/j.1475-5661.2012.00539.x.
- Graham, Stephen. 2005. "Software-sorted Geographies." *Progress in Human Geography* 29 (5) (October 1): 562–580. doi:10.1191/0309132505ph568oa.
- Hackworth, Jason. 2005. "Progressive Activism in a Neoliberal Context: The Case of Efforts to Retain Public Housing in the United States." *Studies in Political Economy* 75.
- Hägerstrand, T. 1967. *Innovation Diffusion as a Spatial Process*. Chicago: University of Chi.
- Hanna, Stephen P., Vincent J. Del Casino Jr, Casey Selden, and Benjamin Hite. 2004. "Representation as Work in 'America's Most Historic City'." *Social & Cultural Geography* 5 (3) (September): 459–481. doi:10.1080/1464936042000252822.
- Haraway, Donna. 1987. "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s." *Australian Feminist Studies* 2 (4) (March): 1–42. doi:10.1080/08164649.1987.9961538.
- . 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14 (3): 575–599.

- Harley, Jb. 1989. "DECONSTRUCTING THE MAP." *Cartographica: The International Journal for Geographic Information and Geovisualization* 26 (2) (October 1): 1–20. doi:10.3138/E635-7827-1757-9T53.
- . 1990. "CARTOGRAPHY, ETHICS AND SOCIAL THEORY." *Cartographica: The International Journal for Geographic Information and Geovisualization* 27 (2) (October 1): 1–23. doi:10.3138/C211-1512-0603-XJ14.
- Harley, Jb, and Paul Laxton. 2001. *The new nature of maps : essays in the history of cartography*. Baltimore, Md.: Johns Hopkins University Press.
- Heidegger, Martin. 1977. *The question concerning technology, and other essays*. New York: Harper & Row.
- Hemment, Drew. 2006. "Locative Arts." *Leonardo* 39 (4) (August): 348–355. doi:10.1162/leon.2006.39.4.348.
- Henry, N, and S Pinch. 2000. "Spatialising Knowledge: Placing the Knowledge Community of Motor Sport Valley." *Geoforum* 31 (2) (May): 191–208. doi:10.1016/S0016-7185(99)00038-X.
- Hollier, Denis. 1989. *Against architecture : the writings of Georges Bataille*. Cambridge, Mass.: MIT Press.
- Hostetter, Ellen. 2008. "THE EMOTIONS OF PUBLIC HOUSING POLICY A CRITICAL HUMANIST EXPLORATION OF HOPE VI". Lexington, KY: University of Kentucky.
- Howett, C. 1997. In *Understanding ordinary landscapes*, ed. Paul Groth and Todd W Bressi, 85–98. New Haven, [CT] [etc.]: Yale University Press.
- Hubka, Thomas C., and Judith T. Kenny. 2006. "Examining the American Dream: Housing Standards and the Emergence of a National Housing Culture, 1900–1930." *Perspectives in Vernacular Architecture* 13 (1) (January 1): 49–69.
- Hughes, Christopher R. 2010. "Google and the Great Firewall." *Survival* 52 (2) (May): 19–26. doi:10.1080/00396331003764538.
- Hugill, Peter J. 1975. "SOCIAL CONDUCT ON THE GOLDEN MILE\*." *Annals of the Association of American Geographers* 65 (2) (June): 214–228. doi:10.1111/j.1467-8306.1975.tb01032.x.
- Hyde, Mary, and David Chavis. 2008. "Sense of Community and Community Building." In *Handbook of Community Movements and Local Organizations*, ed. Ram A. Cnaan and Carl Milofsky, 179–192. Boston, MA: Springer US. [http://www.springerlink.com/index/10.1007/978-0-387-32933-8\\_12](http://www.springerlink.com/index/10.1007/978-0-387-32933-8_12).
- Ingold, Tim. 2000. *The perception of the environment : essays on livelihood, dwelling & skill*. London; New York: Routledge.
- . 2009. "Bindings Against Boundaries: Entanglements of Life in an Open World." *Environment and Planning A* 0 (0): 0–0. doi:10.1068/a40156.
- . 2010. "Footprints Through the Weather-world: Walking, Breathing, Knowing." *Journal of the Royal Anthropological Institute* 16 (May): S121–S139. doi:10.1111/j.1467-9655.2010.01613.x.
- . 2011. *Being alive : essays on movement, knowledge and description*. London; New York: Routledge.
- Introna, Lucas, and Helen Nissenbaum. 2000. "Shaping the Web: Why the Politics of Search Engines Matters." *The Information Society* 16 (3) (July): 169–185. doi:10.1080/01972240050133634.

- Ishikawa, Toru, Kei Murasawa, and Atsuyuki Okabe. 2009. "Wayfinding and Art Viewing by Users of a Mobile System and a Guidebook." *Journal of Location Based Services* 3 (4) (December): 277–293. doi:10.1080/17489720903476627.
- Jackson, John Brinckerhoff. 1984. *Discovering the vernacular landscape*. New Haven: Yale University Press.
- Jakle, John A. 1987. *The visual elements of landscape*. Amherst: University of Massachusetts Press.
- Johnsen, Sarah, Jon May, and Paul Cloke. 2008. "Imag(in)ing 'homeless Places': Using Auto-photography to (re)examine the Geographies of Homelessness." *Area* 40 (2) (June): 194–207. doi:10.1111/j.1475-4762.2008.00801.x.
- Jones, Donald. 2006. "Avatar: Constructions of Self and Place in Second Life." *Gnovis* 6.
- Kaba, S. 1996. "Building the Future: An Architectural Manifesto for the Next Millennium." *Web Architecture Magazine*.
- Kant, E. 1970. *Kant's Concept of Geography and Its Relation to Recent Geographical Thought*. Tran. J. A. May. Published for the University of Toronto Dept. of Geography by University of Toronto Press. [http://books.google.com/books?id=Sjt\\_AAAAMAAJ](http://books.google.com/books?id=Sjt_AAAAMAAJ).
- Kelley, Matthew James. 2011. "The Emergent Urban Imaginaries of Geosocial Media." *GeoJournal* (November 5). doi:10.1007/s10708-011-9439-1. <http://www.springerlink.com/index/10.1007/s10708-011-9439-1>.
- Kingsbury, Paul, and John Paul Jones. 2009. "Walter Benjamin's Dionysian Adventures on Google Earth." *Geoforum* 40 (4) (July): 502–513. doi:10.1016/j.geoforum.2008.10.002.
- Kinsley, Sam. 2010. "Practising Tomorrows? Ubiquitous Computing and the Politics of Anticipation." Bristol: University of Bristol. [http://www.samkinsley.com/pdf/kinsley\\_thesis\\_web.pdf](http://www.samkinsley.com/pdf/kinsley_thesis_web.pdf).
- Kitchin, Rob, and Martin Dodge. 2005. "Code and the Transduction of Space." *Annals of the Association of American Geographers* 95 (1) (March): 162–180. doi:10.1111/j.1467-8306.2005.00454.x.
- . 2007. "Rethinking Maps." *Progress in Human Geography* 31 (3) (June 1): 331–344. doi:10.1177/0309132507077082.
- . 2011. *Code/space : software and everyday life*. Cambridge, Mass.: MIT Press.
- Knabb, Ken. 2006. *Situationist International anthology*. Berkeley, CA: Bureau of Public Secrets.
- Kobayashi, Audrey. 2007. "Critical 'Race' Approaches to Cultural Geography." In *A Companion to Cultural Geography*, ed. James S. Duncan, Nuala C. Johnson, and Richard H. Schein, 238–249. Malden, MA, USA: Blackwell Publishing Ltd. <http://doi.wiley.com/10.1002/9780470996515.ch16>.
- Kuo, F. E., and W. C. Sullivan. 2001. "Environment and Crime in the Inner City: Does Vegetation Reduce Crime?" *Environment and Behavior* 33 (3) (May 1): 343–367. doi:10.1177/0013916501333002.
- Kusenbach, Margarethe. 2003. "Street Phenomenology: The Go-Along as Ethnographic Research Tool." *Ethnography* 4 (3) (September 1): 455–485. doi:10.1177/146613810343007.
- Kvale, S. 2006. "Dominance Through Interviews and Dialogues." *Qualitative Inquiry* 12 (3) (June 1): 480–500. doi:10.1177/1077800406286235.



- Lancaster, Clay. 1995. *The American bungalow, 1880-1930*. New York: Dover Publications.
- . 1999. "Ashland Park: A Sympathetic Bungalow Environment." *Kentucky Review* 14 (Summer): 3–12.
- Lapenta, Francesco. 2011a. "Geomedia: On Location-based Media, the Changing Status of Collective Image Production and the Emergence of Social Navigation Systems." *Visual Studies* 26 (1) (March 15): 14–24. doi:10.1080/1472586X.2011.548485.
- . 2011b. "Locative Media and the Digital Visualisation of Space, Place and Information." *Visual Studies* 26 (1) (March 15): 1–3. doi:10.1080/1472586X.2011.548483.
- Latham, Alan. 2003. "Research, Performance, and Doing Human Geography: Some Reflections on the Diary-photograph, Diary-interview Method." *Environment and Planning A* 35 (11): 1993–2017. doi:10.1068/a3587.
- Latour, Bruno. 2011. "Drawing Things Together." In *The Map Reader*, ed. Martin Dodge, Rob Kitchin, and Chris Perkins, 65–72. Chichester, UK: John Wiley & Sons, Ltd. <http://doi.wiley.com/10.1002/9780470979587.ch9>.
- Laurier, Eric, and Hayden Lorimer. 2012. "Other Ways: Landscapes of Commuting." *Landscape Research* 37 (2) (April): 207–224. doi:10.1080/01426397.2011.652944.
- Lewis, Pierce. 1979. "Axioms for Reading the Landscape: Some Guides to the American Scene." In *The Interpretation of Ordinary Landscape: Geographical Essays*, ed. D Meinig, 11–32. New York: Oxford University Press.
- . 2003. "The Monument and the Bungalow: The Intellectual Legacy of J B Jackson." In *Everyday America*, ed. Paul Groth and Chris Wilson. Berkeley: University of California Press.
- Livingstone, David N. 1993. *The Geographical tradition : episodes in the history of a contested enterprise*. Oxford [etc.]: Basil Blackwell.
- Livingstone, David N, and Charles W. J Withers. 1999. "Introduction." In *Geography and enlightenment*, ed. David N Livingstone and Charles W. J Withers. Chicago: University of Chicago Press.
- Longhurst, R. 1997. "(Dis)embodied Geographies." *Progress in Human Geography* 21 (4) (December 1): 486–501. doi:10.1191/030913297668704177.
- Lorimer, Hayden. 2005. "Cultural Geography: The Busyness of Being 'More-than-representational'." *Progress in Human Geography* 29 (1) (February 1): 83–94. doi:10.1191/0309132505ph531pr.
- Lowy, M. 1985. "Revolution Against 'Progress': Walter Benjamin's Romantic Anarchism." *New Left Review* 1 (152).
- Lynch, Kevin. 1960. *The image of the city*. Cambridge, Mass.: MIT Press.
- Lyon, David. 2006. *Theorizing surveillance*. Cullompton: Willan Publ.
- Macfarlane, Robert. 2008. *The wild places*. New York: Penguin Books.
- Martin, Deborah, Eugene McCann, and Mark Purcell. 2003. "Space, Scale, Governance, and Representation: Contemporary Geographical Perspectives on Urban Politics and Policy." *Journal of Urban Affairs* 25 (2) (May): 113–121. doi:10.1111/1467-9906.t01-1-00001.
- Massey, Doreen. 1991. "A Global Sense of Place." *Marxism Today*: 24–29.

- . 1999. *Power-geometries and the Politics of Space-time*. Heidelberg: University of Heidelberg Press. <http://books.google.co.uk/books?id=WF4SAQAIAAJ>.
- Matthews, H., M. Taylor, B. Percy-Smith, and M. Limb. 2000. "The Unacceptable Flaneur: The Shopping Mall as a Teenage Hangout." *Childhood* 7 (3): 279–294. doi:10.1177/0907568200007003003.
- McCormack, Derek P. 2005. "Diagramming Practice and Performance." *Environment and Planning D: Society and Space* 23 (1): 119–147. doi:10.1068/d51j.
- McDowell, Linda. 2001. "Men, Management and Multiple Masculinities in Organisations." *Geoforum* 32 (2) (May): 181–198. doi:10.1016/S0016-7185(00)00024-5.
- . 2009. *Working bodies : interactive service employment and workplace identities*. Chichester, UK; Malden, MA: Wiley-Blackwell.
- . 2010. "Interviewing." In *The SAGE handbook of qualitative geography*, ed. Dydia DeLyser, 290–310. Los Angeles; London: SAGE. <http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=472454>.
- McFarlane, Thomas, and Iain Hay. 2003. "The Battle for Seattle: Protest and Popular Geopolitics in The Australian Newspaper." *Political Geography* 22 (2) (February): 211–232. doi:10.1016/S0962-6298(02)00090-2.
- McGuire, Jacqueline Barnes. 1997. "The Reliability and Validity of a Questionnaire Describing Neighborhood Characteristics Relevant to Families and Young Children Living in Urban Areas." *Journal of Community Psychology* 25 (6) (November): 551–566. doi:10.1002/(SICI)1520-6629(199711)25:6<551::AID-JCOP5>3.0.CO;2-S.
- McLafferty, Sara L. 1995. "Counting for Women\*." *The Professional Geographer* 47 (4) (November): 436–442. doi:10.1111/j.0033-0124.1995.00436.x.
- Meinig, D. 1979. "Symbolic Landscapes." In *The Interpretation of Ordinary Landscape: Geographical Essays*, ed. D Meinig, 11–32. New York: Oxford University Press.
- Merrifield, Andy. 1995. "SITUATED KNOWLEDGE THROUGH EXPLORATION: REFLECTIONS ON BUNGE'S 'GEOGRAPHICAL EXPEDITIONS'\*." *Antipode* 27 (1) (January): 49–70. doi:10.1111/j.1467-8330.1995.tb00261.x.
- Merz, M. 2008. "SEO and Google MyMaps: The Power of Localization." *Performancing*. <http://performancing.com/maps/seo-google-my-maps-power-localization>.
- Miller, Claire. 2011. "Google Search Results Get More Social - NYTimes.com." *New York Times*, February 17, Online edition. <http://bits.blogs.nytimes.com/2011/02/17/google-search-results-get-more-social/>.
- Miller, Claire Cain. 2012. "As Violence Spreads in Arab World, Google Blocks Access to Inflammatory Video." *New York Times*, September 13. [http://www.nytimes.com/2012/09/14/technology/google-blocks-inflammatory-video-in-egypt-and-libya.html?\\_r=0](http://www.nytimes.com/2012/09/14/technology/google-blocks-inflammatory-video-in-egypt-and-libya.html?_r=0).
- Miller, W. 2007. "American Classic: Bungalows Abound in the Bluegrass." *Keeneland Magazine*.
- Mitchell, Don. 1996. *The lie of the land : migrant workers and the California landscape*. Minneapolis: University of Minnesota Press.

- . 2002. “Cultural Landscapes: The Dialectical Landscape – Recent Landscape Research in Human Geography.” *Progress in Human Geography* 26 (3) (June 1): 381–389. doi:10.1191/0309132502ph376pr.
- Mitchell, William J. 1996. *City of bits : space, place, and the infobahn*. Cambridge, Mass.: MIT Press.
- Monmonier, Mark. 2004. *Rhumb lines and map wars : a social history of the Mercator projection*. Chicago: University of Chicago Press.
- . 2007. “Cartography: The Multidisciplinary Pluralism of Cartographic Art, Geospatial Technology, and Empirical Scholarship.” *Progress in Human Geography* 31 (3) (June 1): 371–379. doi:10.1177/0309132507077089.
- Montello, Daniel R. 2002. “Cognitive Map-Design Research in the Twentieth Century: Theoretical and Empirical Approaches.” *Cartography and Geographic Information Science* 29 (3) (July 1): 283–304. doi:10.1559/152304002782008503.
- Morgan, Glenn. 1999. “Transnational Communities and Business Systems.” In *Transnational Communities Project Working Paper*, WPTC–99.
- Nagar, Richa, and Susan Geiger. 2007. “Reflexivity and Positionality in Feminist Fieldwork Revisited.” In *Politics and practice in economic geography*, ed. Adam Tickell, Eric Sheppard, Jamie Peck, and Trevor Barnes, chapter 22. Los Angeles, Calif.; London: SAGE. <http://site.ebrary.com/id/10256961>.
- Nasar, J. L., and K. M. Jones. 1997. “Landscapes of Fear and Stress.” *Environment and Behavior* 29 (3) (May 1): 291–323. doi:10.1177/001391659702900301.
- Nash, C. 2000. “Progress Reports, Performativity in Practice: Some Recent Work in Cultural Geography.” *Progress in Human Geography* 24 (4) (December 1): 653–664. doi:10.1191/030913200701540654.
- Nast, Heidi, and Mabel Wilson. 1994. “Lawful Transgressions: This Is the House That Jackie Built...” *Assemblage* 24: 48–55.
- Nelson, L. 2008. “Racialized Landscapes: Whiteness and the Struggle over Farmworker Housing in Woodburn, Oregon.” *Cultural Geographies* 15 (1) (January 1): 41–62. doi:10.1177/1474474007085782.
- Newman, Oscar. 1972. *Defensible space : people and design in the violent city*. London: Macmillan.
- Nielsen. 2012. “Survey: New U.S. Smartphone Growth by Age and Income | Nielsen Wire.” *NielsenWire*. [http://blog.nielsen.com/nielsenwire/online\\_mobile/survey-new-u-s-smartphone-growth-by-age-and-income/](http://blog.nielsen.com/nielsenwire/online_mobile/survey-new-u-s-smartphone-growth-by-age-and-income/).
- O’Brien, Richard. 1992. *Global financial integration : the end of geography*. New York: Council on Foreign Relations Press.
- O’Reilly. 2010. “What is Web 2.0?” In *Online communication and collaboration : a reader*, ed. Helen Margaret Donelan, Karen Lesley Kear, and Magnus Ramage, 225–235. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge.
- Obermeyer, N. 2007. “Thoughts on Volunteered (geo) Slavery.” <http://www.ncgia.ucsb.edu/projects/vgi/participants.html>.
- Ondrejka, Cory. 2007. “Collapsing Geography (Second Life, Innovation, and the Future of National Power).” *Innovations: Technology, Governance, Globalization* 2 (3): 27–54.
- Outram, Dorinda. 1999. “On Being Persus: new Knowledge, Dislocation and Enlightenment Exploration.” In *Geography and enlightenment*, ed. David N

- Livingstone and Charles W. J Withers, 281–294. Chicago: University of Chicago Press.
- Parham, Angel Adams. 2004. “Diaspora, Community and Communication: Internet Use in Transnational Haiti.” *Global Networks* 4 (2) (April): 199–217. doi:10.1111/j.1471-0374.2004.00087.x.
- Park, SungBok, Ha Sung Hwang, and Myungil Choi. 2009. “The Experience of Presence in 3D Web Environment: An Analysis of Korean Second Life.” In *Human-Computer Interaction. Interacting in Various Application Domains*, ed. Julie A. Jacko, 5613:387–395. Berlin, Heidelberg: Springer Berlin Heidelberg. [http://www.springerlink.com/index/10.1007/978-3-642-02583-9\\_43](http://www.springerlink.com/index/10.1007/978-3-642-02583-9_43).
- Parks, L. 2002. “Satellite and cyber visualities: Analyzing ‘digital earth’.” In *The visual culture reader*, ed. Nicholas Mirzoeff. London; New York: Routledge.
- Parr, H. 2012. “Emotional Geographies.” In *Introducing Human Geographies, Second Edition*, ed. P. Cloke and P. Crang. Hodder Education. <http://books.google.com/books?id=85q8PE0SUekC>.
- Pavlovskaya, Marianna, and Kevin St. Martin. 2007. “Feminism and Geographic Information Systems: From a Missing Object to a Mapping Subject.” *Geography Compass* 1 (3) (May): 583–606. doi:10.1111/j.1749-8198.2007.00028.x.
- Peake, Linda, and D. Alissa Trotz. 1999. *Gender, ethnicity and place: women and identities in Guyana*. London; New York: Routledge.
- Pearce, N. 2000. “The Ecological Fallacy Strikes Back.” *Journal of Epidemiology & Community Health* 54 (5) (May 1): 326–327. doi:10.1136/jech.54.5.326.
- Philip, L J. 1998. “Combining Quantitative and Qualitative Approaches to Social Research in Human Geography -- an Impossible Mixture?” *Environment and Planning A* 30 (2): 261–276. doi:10.1068/a300261.
- Pickles, John. 2004. *A History of spaces: cartographic reason, mapping, and the geocoded world*. New York: Routledge.
- Pinder, D. 1996. “Subverting Cartography: The Situationists and Maps of the City.” *Environment and Planning A* 28 (3): 405–427. doi:10.1068/a280405.
- Pink, Sarah. 2011. “Sensory Digital Photography: Re-thinking ‘moving’ and the Image.” *Visual Studies* 26 (1) (March 15): 4–13. doi:10.1080/1472586X.2011.548484.
- Portes, A. 2000. “Globalization from below: the rise of transnational communities.” In *The ends of globalization: bringing society back in*, ed. Don Kalb, Chapter 15. Lanham, MD: Rowman & Littlefield Publishers.
- Power, Martin J., Patricia Neville, Eoin Devereux, Amanda Haynes, and Cliona Barnes. 2012. “‘Why Bother Seeing the World for Real?’: Google Street View and the Representation of a Stigmatised Neighbourhood.” *New Media & Society*. <http://nms.sagepub.com/content/early/2012/12/06/1461444812465138.abstract>.
- Pratt, Mary Louise. 2008. *Imperial eyes: travel writing and transculturation*. London; New York: Routledge.
- Presner, Todd. 2009. “The City in the Ages of New Media: From Ruttmann’s Berlin: Die Sinfonie Der Großstadt to Hypermedia Berlin.” In *After the Digital Divide: German Aesthetic Theory in the Age of New Media*, ed. Lutz Koepnick and Erin McGlothlin, 229–251. Camden House.
- . 2010. “Digital Geographies: Berlin in the Ages of New Media.” *Amsterdamer Beiträge Zur Neueren Germanistik* 75 (1): 447–469.

- Project Glass. 2012. "Project Glass - Google+." <https://plus.google.com/+projectglass/posts>.
- Von der Pütten, Astrid M., Jennifer Klatt, Simon Ten Broeke, Roderick McCall, Nicole C. Krämer, Richard Wetzel, Lisa Blum, Leif Oppermann, and Johannes Klatt. 2012. "Subjective and Behavioral Presence Measurement and Interactivity in the Collaborative Augmented Reality Game TimeWarp." *Interacting with Computers* 24 (4) (July): 317–325. doi:10.1016/j.intcom.2012.03.004.
- Ratti, Carlo. 2004. "Space Syntax: Some Inconsistencies." *Environment and Planning B: Planning and Design* 31 (4): 487–499. doi:10.1068/b3019.
- Rawls, John, and Erin Kelly. 2001. *Justice as fairness : a restatement*. Cambridge, Mass.: Harvard University Press.
- Ribe, Robert G. 1982. "On the Possibility of Quantifying Scenic Beauty — A Response." *Landscape Planning* 9 (1) (July): 61–74. doi:10.1016/0304-3924(82)90011-9.
- Rich, Meghan Ashlin. 2009. "'It Depends on How You Define Integrated': Neighborhood Boundaries and Racial Integration in a Baltimore Neighborhood." *Sociological Forum* 24 (4) (December): 828–853. doi:10.1111/j.1573-7861.2009.01138.x.
- Rose, Gillian. 1993. *Feminism and geography : the limits of geographical knowledge*. Minneapolis: University of Minnesota Press.
- . 2000. *Visual methodologies : an introduction to interpreting visual objects*. London; Thousand Oaks: SAGE.
- . 2003. "On the Need to Ask How, Exactly, Is Geography 'Visual'?" *Antipode* 35 (2) (March): 212–221. doi:10.1111/1467-8330.00317.
- Rose, Gillian, Monica Degen, and Begum Basdas. 2010. "More on 'big Things': Building Events and Feelings." *Transactions of the Institute of British Geographers* 35 (3) (April 15): 334–349. doi:10.1111/j.1475-5661.2010.00388.x.
- Rose, Mitch. 2002. "Landscape and Labyrinths." *Geoforum* 33 (4) (November): 455–467. doi:10.1016/S0016-7185(02)00030-1.
- Rubin, Barbara. 1977. "A CHRONOLOGY OF ARCHITECTURE IN LOS ANGELES\*." *Annals of the Association of American Geographers* 67 (4) (December): 521–537. doi:10.1111/j.1467-8306.1977.tb01159.x.
- Rundle, Andrew G., Michael D.M. Bader, Catherine A. Richards, Kathryn M. Neckerman, and Julien O. Teitler. 2011. "Using Google Street View to Audit Neighborhood Environments." *American Journal of Preventive Medicine* 40 (1) (January): 94–100. doi:10.1016/j.amepre.2010.09.034.
- Sassen, Saskia. 2001. *The global city : New York, London, Tokyo*. Princeton, N.J.: Princeton University Press.
- . 2004. "Agglomeration in the digital era?" In *The cybercities reader*, ed. Stephen Graham, 195–198. London; New York: Routledge.
- Savage, Mike. 2000. "Walter Benjamin's Urban Thought: A Critical Analysis." In *Thinking space*, ed. Mike Crang and N. J. Thrift. London; New York: Routledge.
- Saxenian, Annalee. 2002. "Transnational Communities and the Evolution of Global Production Networks: The Cases of Taiwan, China and India." *Industry & Innovation* 9 (3) (December): 183–202. doi:10.1080/1366271022000034453.
- Sayer, R. Andrew. 2000. *Realism and social science*. London; Thousand Oaks, Calif.: Sage.

- Schein, Richard H. 1993. "Representing Urban America: 19th-century Views of Landscape, Space, and Power." *Environment and Planning D: Society and Space* 11 (1): 7–21. doi:10.1068/d110007.
- . 1997. "The Place of Landscape: A Conceptual Framework for Interpreting an American Scene." *Annals of the Association of American Geographers* 87 (4) (December): 660–680. doi:10.1111/1467-8306.00072.
- . 2003. "Normative dimensions of landscape." In *Everyday America*, ed. Chris Wilson and Paul Groth. Berkeley: University of California Press.
- . 2006. *Landscape and race in the United States*. New York: Routledge.
- . 2009. "Belonging Through Land/scape." *Environment and Planning A* 41 (4): 811–826. doi:10.1068/a41125.
- . 2010. "A METHODOLOGICAL FRAMEWORK FOR INTERPRETING ORDINARY LANDSCAPES: LEXINGTON, KENTUCKY'S COURTHOUSE SQUARE." *Geographical Review* 99 (3) (April 21): 377–402. doi:10.1111/j.1931-0846.2009.tb00438.x.
- Schutz, A. 1954. "Concept and Theory Formation in the Social Sciences." *The Journal of Philosophy* 51 (9): 257–273.
- Semetko, Ha, and Pm Valkenburg. 2000. "Framing European Politics: a Content Analysis of Press and Television News." *Journal of Communication* 50 (2) (June): 93–109. doi:10.1111/j.1460-2466.2000.tb02843.x.
- Sharp, J. 2009. "Geography and Gender: What Belongs to Feminist Geography? Emotion, Power and Change." *Progress in Human Geography* 33 (1) (February 1): 74–80. doi:10.1177/0309132508090440.
- Shelton, Taylor, Matthew Zook, and Mark Graham. 2011. "The Technology of Religion: Mapping Religious Cyberscapes." *The Professional Geographer* (October 20): 111020090140008. doi:10.1080/00330124.2011.614571.
- Shohat, E, and R Stam. 2002. "Narrativizing Visual Culture. Towards a polycentric aesthetics." In *The visual culture reader*, ed. Nicholas Mirzoeff, 27–49. London; New York: Routledge.
- Sidaway, James D. 2009. "Shadows on the Path: Negotiating Geopolitics on an Urban Section of Britain's South West Coast Path." *Environment and Planning D: Society and Space* 27 (6): 1091–1116. doi:10.1068/d5508.
- Sparke, Matthew. 1998. "A Map That Roared and an Original Atlas: Canada, Cartography, and the Narration of Nation." *Annals of the Association of American Geographers* 88 (3) (September): 463–495. doi:10.1111/0004-5608.00109.
- Stohl, C., and G. Cheney. 2001. "Participatory Processes/Paradoxical Practices: Communication and the Dilemmas of Organizational Democracy." *Management Communication Quarterly* 14 (3) (February 1): 349–407. doi:10.1177/0893318901143001.
- Sullivan, Danny. 2007. "Google Kills Bush's Miserable Failure Search & Other Google Bombs." *Search Engine Land*. <http://searchengineland.com/google-kills-bushs-miserable-failure-search-other-google-bombs-10363>.
- Sultana, F. 2007. "Reflexivity, Positionality and Participatory Ethics: Negotiating Fieldwork Dilemmas in International Research." *ACME* 6 (3): 374–385.
- De Sutter, Michiel. 2011. "Efteling En Rabobank Lanceren 'augmented Reality Game' - Pretparken.be." *Pretparken*.

- <http://www.themeparkvision.net/NL/article/1021/Efteling%20en%20Rabobank%20lanceren%20%E2%80%98augmented%20reality%20game%E2%80%99>.
- Swindle, David. 2011. "How the Left Conquered Wikipedia, Part 1 | FrontPage Magazine." *FrontPageMag*. <http://frontpagemag.com/2011/david-swindle/how-the-left-conquered-wikipedia-part-1/>.
- Talen, E. 2005. "EVALUATING GOOD URBAN FORM IN AN INNER-CITY NEIGHBORHOOD: AN EMPIRICAL APPLICATION." *JOURNAL OF ARCHITECTURAL AND PLANNING RESEARCH* 22 (3): 204–228.
- Talen, E., and S. Shah. 2007. "Neighborhood Evaluation Using GIS: An Exploratory Study." *Environment and Behavior* 39 (5) (July 18): 583–615. doi:10.1177/0013916506292332.
- Taylor, Peter. 2012. "GaWC - Globalization and World Cities." Accessed August 31. <http://www.lboro.ac.uk/gawc/>.
- Tester, Keith. 1994. *The Flâneur*. London; New York: Routledge.
- Thien, Deborah. 2005. "After or Beyond Feeling? A Consideration of Affect and Emotion in Geography." *Area* 37 (4) (December): 450–454. doi:10.1111/j.1475-4762.2005.00643a.x.
- Thomas, Mary E. 2005. "Girls, Consumption Space and the Contradictions Ofhanging Out in the City." *Social & Cultural Geography* 6 (4) (August): 587–605. doi:10.1080/14649360500200320.
- Thrift, Nigel. 2011. "Lifeworld Inc—and What to Do About It." *Environment and Planning D: Society and Space* 29 (1): 5–26. doi:10.1068/d0310.
- Thrift, Nigel, and Shaun French. 2002. "The Automatic Production of Space." *Transactions of the Institute of British Geographers* 27 (3) (September): 309–335. doi:10.1111/1475-5661.00057.
- Trudeau, Daniel. 2006. "Politics of Belonging in the Construction of Landscapes: Placemaking, Boundary-drawing and Exclusion." *Cultural Geographies* 13 (3) (July 1): 421–443. doi:10.1191/1474474006eu3660a.
- Tuan, Yi-fu. 1990. *Topophilia: a study of environmental perception, attitudes, and values*. New York: Columbia University Press.
- Turnbull, David. 2006. "Maps and Power." *Metascience* 14 (3) (February 27): 469–472. doi:10.1007/s11016-005-3454-0.
- Uricchio, William. 2011. "The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image." *Visual Studies* 26 (1) (March 15): 25–35. doi:10.1080/1472586X.2011.548486.
- Urry, John. 2002. "Mobility and Proximity." *Sociology* 36 (2) (May 1): 255–274. doi:10.1177/0038038502036002002.
- . 2012. "Social Networks, Mobile Lives and Social Inequalities." *Journal of Transport Geography* 21 (March): 24–30. doi:10.1016/j.jtrangeo.2011.10.003.
- Vanderbeck, Robert M. 2006. "Vermont and the Imaginative Geographies of American Whiteness." *Annals of the Association of American Geographers* 96 (3) (September): 641–659. doi:10.1111/j.1467-8306.2006.00710.x.
- Walzer, Michael. 1983. *Spheres of justice: a defense of pluralism and equality*. New York: Basic Books.
- Wardrip-Fruin, Noah, and Pat Harrigan. 2010. *Second person: role-playing and story in games and playable media*. Cambridge, Mass.: MIT Press.

- Williams, Jack F., and Stanley Brunn. 2004. "Cybercities of Asia: Measuring Globalization Using Hyperlinks (Asian Cities and Hyperlinks)." *Asian Geographer* 23 (1-2) (January): 121–147. doi:10.1080/10225706.2004.9684116.
- Wilson, Matt. 2010a. "More-than-Human Contact, Conspicuous Mobility, and the Digital Frontier." In .
- . 2010b. "Life After GIS: More-than-human Contact, Conspicuous Mobility, and the Digital Frontier." *Life After GIS*. <http://lifeaftergis.blogspot.com/2010/11/more-than-human-contact-conspicuous.html>.
- . 2011. "'Training the Eye': Formation of the Geocoding Subject." *Social & Cultural Geography* 12 (04): 357–376.
- . 2012. "Location-based Services, Conspicuous Mobility, and the Location-aware Future." *Geoforum* (April). doi:10.1016/j.geoforum.2012.03.014. <http://linkinghub.elsevier.com/retrieve/pii/S0016718512000747>.
- Wood, Denis, John Fels, and John Krygier. 2010. *Rethinking the power of maps*. New York: Guilford Press.
- Wylie, John. 2002. "An Essay on Ascending Glastonbury Tor." *Geoforum* 33 (4) (November): 441–454. doi:10.1016/S0016-7185(02)00033-7.
- . 2005. "A Single Day's Walking: Narrating Self and Landscape on the South West Coast Path." *Transactions of the Institute of British Geographers* 30 (2) (June): 234–247. doi:10.1111/j.1475-5661.2005.00163.x.
- Yamabe, Tetsuo, and Tatsuo Nakajima. 2012. "Playful Training with Augmented Reality Games: Case Studies Towards Reality-oriented System Design." *Multimedia Tools and Applications* (January 12). doi:10.1007/s11042-011-0979-7. <http://www.springerlink.com/index/10.1007/s11042-011-0979-7>.
- Yiannoutsou, Nikoleta, Ioanna Papadimitriou, Vassilis Komis, and Nikolaos Avouris. 2009. "'Playing with' Museum Exhibits." In , 230. ACM Press. doi:10.1145/1551788.1551837. <http://portal.acm.org/citation.cfm?doid=1551788.1551837>.
- Žižek, Slavoj. 1991. "Grimaces of the Real, or When the Phallus Appears." *October* 51: 44–68.
- Zook, Matthew. 2005. *The geography of the Internet industry : venture capital, dot-coms, and local knowledge*. Malden, MA: Blackwell Pub.
- . 2007. "The Geographies of the Internet." *Annual Review of Information Science and Technology* 40 (1) (September 28): 53–78. doi:10.1002/aris.1440400109.
- . 2010. "Visualizing Digiplace." *Floating Sheep*. <http://www.floatingsheep.org/2010/09/visualizing-digiplace.html>.
- Zook, Matthew, and Mark Graham. 2007a. "Mapping DigiPlace: Geocoded Internet Data and the Representation of Place." *Environment and Planning B: Planning and Design* 34 (3): 466–482. doi:10.1068/b3311.
- . 2007b. "The Creative Reconstruction of the Internet: Google and the Privatization of Cyberspace and DigiPlace." *Geoforum* 38 (6) (November): 1322–1343. doi:10.1016/j.geoforum.2007.05.004.
- Zook, Matthew, Mark Graham, Taylor Shelton, and Sean Gorman. 2010. "Volunteered Geographic Information and Crowdsourcing Disaster Relief: A Case Study of the



Haitian Earthquake.” *World Medical & Health Policy* 2 (2) (January 21): 6–32.  
doi:10.2202/1948-4682.1069.

Zube, Ervin H. 1984. *Environmental evaluation: perception and public policy*.  
Cambridge [etc.]: Cambridge University Press.

## 11. Vita

### *Education*

**MA** 2009, Geography, University of Kentucky. Advisor: Sue Roberts (with Patricia Ehrkamp and Tad Mutersbaugh). Paper title: “Education for Development, CD for Peace: producing the ‘globally competitive’ child”.

**BSc** 2006, Geography, University of Bristol. Advisor: Wendy Larner. Dissertation title: “‘Shock’n y’all’: country music, the War on Terror, and the politics of popular geopolitics”.

### **Professional Positions**

2011. Web Producer, Center for Rural Development, Somerset, KY.

2011-present. Designer, Summit 7 Systems, Huntsville, AL.

### **Publications**

(\*denotes equal authorship in jointly authored work)

Graham, M., Zook, M. and **Boulton, A.\*** (2012). “Augmented Reality in Urban Places: Contested Content and the Duplicity of Code.” *Transactions of the Institute of British Geographers*. (doi: <http://dx.doi.org/10.1111/j.1475-5661.2012.00539.x>)

**Boulton, A.** (2011). “Property and aesthetics in an ordinary American landscape.” *Geographical Review* 101(2), 224-42

Devriendt, L., **Boulton, A.\***, Brunn, S., Derudder, B., and Witlox, F. (2011) “Searching for cyberspace: the position of major cities in the Information Age.” *Journal of Urban Technology* 18(1), 73-92

**Boulton, A.** (2010). Guest editorial—“Just maps: Google’s democratic map-making community?” *Cartographica* 45(1), 1-4

**Boulton, A.** (2010). Education for development, CD for Peace: producing the ‘globally competitive’ child. *Geoforum* 41(2), 329-36

Brunn, S., Devriendt, L., **Boulton, A.**, Derudder, B., and Witlox, F. (2010). Networks of European cities in worlds of global economic and environmental change. *FENNIA: International Journal of Geography* 188(1), 37-49

**Boulton, A.** (2008). The Popular Geopolitical Wor(l)ds of Post-9/11 Country Music. *Popular Music and Society* 31(3), 373-87

*Book chapters and reviews*

**Boulton, A.** and Zook, M. (forthcoming). “Landscape, Locative Media and the Duplicity of Code”. In Johnson, N., Schein, R., and Winders, J. eds., *Companion to Cultural Geography*. Wiley-Blackwell.

Brunn, S., **Boulton, A.** and Devriendt, L. (forthcoming) “Assessing the Impacts of the Global Financial Crisis on Major and Minor Cities in South and Southeast Asia.” In Dutt, A., ed., *Regional Resources and Urban Perspectives in the 21st Century: A Felicitation to Professor Baleshwar Thakur*. Cambridge University Press

**Boulton, A.**, Brunn, S., and Devriendt, L. (2012). “Cyberinfrastructures and ‘smart’ world cities: physical, human and soft infrastructures.” In Taylor, P., Derudder, B., Hoyer, M., and Witlox, F., eds., *International Handbook of Globalization and World Cities*. Edward Elgar

**Boulton, A.** (2011). “Engineering and the architecture of economic recovery: TARP, the New Deal and the evolving landscapes of crisis.” In Brunn, S., ed., *Engineering Earth: Megaengineering Projects*. Springer

**Boulton, A.\***, Devriendt, L., Brunn, S., Derudder, B., and Witlox, F. (2011). City networks in cyberspace and time: using Google hyperlinks to measure global economic and environmental crises. In Firmino, R., Duarte, F., and Ultramari, C., eds., *Mobile and Ubiquitous Urban Infrastructures: Surveillance, Locative Media and Global Networks*. Hershey, PA: IGI Global

**Boulton, A.** (2010) Book Review: ‘Making Poverty: A History’. *Journal of International Development* 22, 1052–3

Devriendt, L., **Boulton, A.\***, Brunn, S., Derudder B., and Witlox, F. (2009). Major cities in the Information World: monitoring cyberspace in real-time. *Globalization and World Cities Research Bulletin* 308. Available at <<http://www.lboro.ac.uk/gawc/rb/rb308.html>>

**Boulton, A.** (2008) “Book Review: ‘The Making of Global City Regions: Johannesburg, Mumbai/Bombay, São Paulo, and Shanghai’.” *Urban Geography* 29(8), 835-6