

General Examination Statement

Submitted towards the Generals Examination in accordance with the requirements of the Doctoral Program in the Department of Geography at the University of Washington by

Ryan Burns

for

the Doctoral Committee

composed of

Sarah Elwood, Chair

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and

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November 17, 2011

Academic Background

I hold two degrees in Geography. My B.A. is from Eastern Kentucky University where I specialized in geotechnologies such as Geographic Information Systems (GIS) and remote sensing. I also wrote an undergraduate thesis that methodologically used GPS, GIS, and interviews to explore the ways globalization is influencing the cultural significance of bookstores in Ho Chi Minh City, Vietnam. In 2009 I earned a M.S. in Geography with a GIScience emphasis from San Diego State University. For my master's work I used geovisualization techniques to look at people's descriptions of San Diego neighborhoods.

I entered the Doctoral Degree Program in Geography at University of Washington in 2009. Since that time my interests have shifted away from geovisualization specifically and more toward the intersections of mapping technologies, urban geography, and critical geography. In addition to coursework in theories of technology, urban theory, and poverty/inequality, I have nearly completed requirements for the Simpson Center's Certificate in Public Scholarship. Since taking my Preliminary Review, I have taken a number of courses and directed readings to prepare me for my General Examination (listed below). Outside of coursework I have focused my independent readings on political economy, disaster relief, critical development, critical social theory, and research methodology. I have also composed a research proposal which has been submitted to the SSRC and the NSF. The following are the courses I have taken at UW, with post-Preliminary Review coursework marked with an asterisk:

GEOG 512 – History of Geographic Thought (Mitchell)
GEOG 578 – Theorizing Cities (Ellis)
COM 597 – Theorizing Technology & Society (Neff)
GEOG 521 – Critical GIS (Elwood)
GEOG 515 – Evidence & Explanation in Geography (Sparke)
GEOG 511 – Advanced Qualitative Methods (Herbert)
GEOG 542 – Reframing Poverty (Lawson)
GEOG 600 – Directed Readings on Geographic Technologies & Society (Elwood)
HUM 594 – Scholarship as Public Practice (Bartha; 2 credits)
HUM 595 – Poverty, Democracy, and Public Scholarship (Lawson, Mitchell; 1 credit)
CHID 499 – Object-oriented Ontology (OOO) Directed Reading (Thurtle)*
GEOG 600 – Technology and the City Directed Reading (Ellis)*
HUM 595 – Now Urbanism Seminar (Powe; 3.7 credits)*

GEOG 513 – Grant Proposals (Ellis)*
GEOG 577 – Urban Inequality (England)*

Proposed Dissertation Research Summary

My dissertation will explore recent shifts in mapping practices, and the ways these shifts influence institutions' urban redevelopment strategies and decision-making processes following natural disasters. Specifically, I am interested in the 'geoweb' (Scharl and Tochtermann 2007), an emerging set of web-based practices, artifacts, and software/hardware configurations that have an explicitly geographic element. An important component of the geoweb is the mode of mapping and data production it enables, characterized by low barriers to entry, dynamic collection and display of data, and commonly the generation of spatial data by laypeople or non-experts (Goodchild 2007a; Elwood 2010). It is exemplified in websites such as OpenStreetMap, a base map of the world generated by volunteers (Haklay and P. Weber 2008), and Ushahidi, a web service that maps georeferenced (containing locational data) SMS messages for use in disaster-struck areas (Okolloh 2009).

In recent years disasters have cast light on the geoweb as a useful response tool, since crowdsourcing spatial data production – that is, opening spatial data production to large numbers of uncoordinated contributors – is touted to be quicker, cheaper, and more egalitarian than traditional modes of mapping (Zuckerman 2009; Liu and Palen 2010; Zook, M. Graham, Shelton, and Gorman 2010; Starbird and Palen 2011; Poblet 2011). Furthermore, popular accounts of geoweb use in disaster contexts are growing rapidly, building on the academic hype (Currion 2010; Hesse 2010; Talbot 2011). These discourses center on claims of "participation", "equality", and "democracy" that suggest an equalizing force inherent in this mode of mapping.

My research will answer recent calls for more engagement with the "societal implications of the geoweb" (Elwood 2010, 350, also: Elwood 2008; Sui 2008; Gerlach 2010). It will explore the ways urban

inequalities may be (re)produced through the geoweb in moments of crisis mapping and disaster relief. Beginning from the assumption that technologies' implications are never evenly distributed, in my research my goal will be to nuance and unpack the common discourses of the geoweb, a reconsideration of the inter-relations between the geoweb and society. With this concern in mind, I am most interested in three bodies of literature: critical geographies of spatial technologies, urban geography, and poverty and inequality. Three research questions will guide my dissertation:

- 1)What kinds of digital spatial data are relief and redevelopment actors using, and from what sources are they gathering these data?**
- 2)How do geoweb modes of mapping influence the assessment of where resources are needed, the allocation of resources, and the decision-making processes that lead to such resource allocations within cities?**
- 3)How are problems, places and people represented in the emerging digital spatial data, and what inclusions or exclusions are implied?**

The following sections detail the three literatures above, as they inform my approaches to the three research questions. Within each broad section I will identify my specific primary areas of interest.

Critical Geographies of Spatial Technologies

Geographers have made significant contributions to understanding the mutual implications of technology and society. With this topic as the focus of my research interests, three subfields will inform my dissertation research. First, emerging literature on the geoweb has emphasized the need to understand the social implications of the geoweb. Instead, most literature tends either to be descriptive in nature, or to focus on measuring "accuracy". Second, the critical GIS literature maintains that technology and society are reflected in each other. Technology reflects social relations, norms, and political agenda; likewise, technology effects those relations and the societies in which they are developed. In a sense, they are co-constitutive. Third, the qualitative GIS literature has shown that there is a politics underlying the representations of knowledges. For instance, representational technologies

(such as GIS or the geoweb) often privilege certain ways of knowing, while marginalizing others. These politics have implications for the uses and effects of those representations.

Geoweb, VGI, Neogeography

Since the emergence of web-based geospatial services, in particular the release of Google Earth in 2005, geographers and geographic service providers have discussed this phenomenon in predominantly descriptive terms. Efforts have focused on how to characterize the geoweb and its entailed software and hardware, and where the geoweb diverges from traditional GIS (A. Turner 2006; Goodchild 2007b; Haklay, Singleton, and C. Parker 2008; Sui 2008; Schuurman 2009). The proliferation of descriptive terms for the geoweb is indicative of a struggle to capture what exactly the geoweb *is*, and the primary function(s) it serves (e.g., new types of data, new mode of mapping, new spatial media, or location-aware software) (Plewe 2007; Crampton 2009; Elwood 2009a; Sui 2008; Wilson 2011). A substantial amount of other work has sought to characterize the *accuracy* of data produced through the geoweb (Frew 2007; Goodchild 2007b; Jain 2007; Flanagan and Metzger 2008; Mummidi and Krumm 2008)¹.

Some critical evaluation has looked at which lessons from the GIS literature we can use to understand the geoweb. In other words, which conversations around GIS make sense in the context of the geoweb (Schuurman 2009)? To this end, Elwood (2008) has advocated exploring the societal effects of the geoweb in ways motivated by concerns from feminist, participatory, and critical GIS. This and other calls for understanding the societal implications of the geoweb have raised questions about privacy (Goodchild 2007b; Elwood and Leszczynski 2010), political economy (Leszczynski 2011), and the ways

¹ These conversations often uncritically take for granted particular notions of accuracy that privilege Cartesian ways of knowing. In contrast, a recurring assumption in my work is that the geoweb implicitly questions these assumptions of “accuracy” by allowing users to produce “accurate” data where Cartesian logic is undermined.

social relations are reflected and influenced through digital geographic technologies (Crutcher and Zook 2009; Perkins and Dodge 2009; M. Gilbert 2010; Halford and Savage 2010).

The geoweb has increasingly been used to facilitate crisis mapping, the production of spatial data in areas hit by disasters. Inline with the predominantly descriptive nature of geoweb literature, particular qualities of the geoweb have been purported to be useful in disaster response and redevelopment situations, including its “reduced development time and improved usability” (Liu and Palen 2010, 86; citing Haklay, Singleton, and C. Parker 2008, 2034), which increases *map production* speed and efficient use of resources (Okolloh 2009; Zook, M. Graham, Shelton, and Gorman 2010). What is underlying many of these themes comes out more explicitly elsewhere: that the “democratic” – or “distributed” – nature of the geoweb is its primary strength in crisis mapping contexts (Heinzelman and Waters 2010; Talbot 2011; Roche, Propeck-Zimmermann, and Mericskay 2011; Starbird and Palen 2011).

Critical GIS

My critique of the geoweb will inevitably be influenced by the critical GIS research program. The critical GIS research program emerged in the 1990s in response to charges that GIS is an inherently quantitative, positivist, and reductionist technology (Pickles 1995a; Sheppard 1995; Schuurman 2000; F. Harvey, Kwan, and Pavlovskaya 2005; O’Sullivan 2006; Pavlovskaya 2006). Through a variety of “engagements with and through GIS” (Leszczynski 2009, 585), the critical GIS research program explored the social dimensions of GIS, as well as its ontological foundations (Pickles 1997; Wright, Goodchild, and Proctor 1997; Chrisman 1999; Kwan 2002b; S. L. McLafferty 2002; Chrisman 2005; Zook 2005; Leszczynski 2009). This research primarily oriented around three theoretic influences: feminist critiques of knowledge and technology, post-structuralist concern for the epistemological foundations of

knowledge, and discussions of inclusion and empowerment coming from the participatory GIS (PGIS) agenda.

Borrowing from Haraway's (1991) notion of 'situated knowledges', feminist critiques of knowledge and technology argued that all knowledge is partial, and thus geographic technologies always represent one of many ways of knowing the world (Kwan 2002a, 2002b; Schuurman and Pratt 2002; Sara McLafferty 2005; M. R. Gilbert and Masucci 2006; Pavlovskaya and Martin 2007). Similarly, post-structuralist theory influenced the critique of GIS through an overall focus on the epistemological foundations of knowledge in GIS (Taylor 1990; Lake 1993; Aitken and Michel 1995; Pickles 1995b, 1997). These critics argued that GIS necessarily entails a return to positivism, the empiricist endeavor that relies on objective, value-free knowledge. This claim was disputed by some GIS scholars (e.g., Goodchild 1991; Openshaw 1991; Leszczynski 2009)), but others sought to address the concern by developing a critical social theory of GIS (Sheppard 1995; Curry 1997; Openshaw 1997; F. Harvey and Chrisman 1998; Kwan 2002a; Schuurman 2002; Chrisman 2005; Sheppard 2005) and by developing critically-motivated methodologies (Knigge and Cope 2006; Pain, MacFarlane, K. Turner, and Gill 2006; Schuurman and Leszczynski 2006; Dunn 2007; Elwood 2009b). P/PGIS literature contributed to the critique of GIS through an emphasis on the technical barriers, power dynamics, and social networks that influence the ways people interacted with, are represented in, and come to utilize, spatial technologies (Trevor Harris, Daniel Weiner, Warner, and Levin 1995; Trevor Harris and Daniel Weiner 1996; T. Harris and D. Weiner 1998; Elwood and Ghose 2001; J. M. Corbett and Keller 2005; Sieber 2006; Elwood 2006b).

These three sets of critiques opened the possibility for multiple knowledges to be represented in GIS, and for a critical examination of the inherent privileges and politics afforded by spatial technologies (borrowing ideas from STS, e.g., Winner 1985; Latour 2000; Nakamura 2002). Indeed, much research on the critical geographies of spatial technologies now maintains that spatial technologies and society are

mutually implicated, that one can “read” society in these technologies and that the technologies in some ways shape geographies (Chrisman 2005; Rose-Redwood 2006; Crampton 2009; Uprichard, Burrows, and S. Parker 2009; M. Gilbert 2010; Kitchin and Dodge 2011).

Qualitative GIS

Recent work has sought to open up the representational capacity of GIS, specifically working to make representing qualitative data easier. This research area aims to challenge masculinist, impersonal, and “god’s-eye” ways of knowing, by representing qualitative information such as emotions, narratives, ethnographic data, and memory (Matthews, Detwiler, and Burton 2005; Knigge and Cope 2006; Pain, MacFarlane, K. Turner, and Gill 2006; Elwood 2009c; Jung 2009; Wilson 2009; Jung and Elwood 2010). These developments take place on the levels of software and methodologies.

Another approach to these broad political goals is to argue that even standard GIS is already open to interpretations in favor of feminist politics and diverse narratives (Kwan 2002b, 2007; Elwood 2006a, 2006c, 2009c). This approach centers on the under-representation of marginalized groups and how GIS can ameliorate that under-representation (Timander and S. McLafferty 1998; S. L. McLafferty 2002), or how interpretation can serve as a vehicle for politicizing GIS representations (Elwood 2006a, 2009c). In short, GIS is not inherently limited to singular politics; rather, it, like spatial technologies more broadly, is contested and re-appropriated in favor of diverse politics.

Urban Geography

My research borrows from urban geography’s interest in redevelopment, gentrification, and cybercities. I define ‘redevelopment’ here as the processes that bring services and infrastructure back to a city following a disaster (Birch and Wachter 2006). It involves the inflow of resources from other locations –

these resources could include building materials, medical services, or increased quality or capacity for spatial data infrastructures. It also involves, to borrow from Fraser (1988), *need interpretation*, or the determination of where needs exist and the ways in which those needs can be addressed. As these processes entail the inflow and circulation of resources, as well as the uneven prioritization of needs (evading the issue of legitimization, for now), we can understand redevelopment as working according to a logic similar to gentrification. Here I'm borrowing from Fainstein *et al* (1983), who productively blur the boundary between gentrification and urban redevelopment by pointing to dynamics shared by both, including the material and discursive "reconstruction" of places and their highly uneven nature. Space, however, is always a "condition of possibility" (D. Harvey 2009) for urban redevelopment, as the dialectics between places, people, and capital always occur *somewhere* for particular reasons worth investigating (D. Harvey 1973). Furthermore, redevelopment can be conceptualized as occurring across several scales, reflecting the notion that the global sits in relation to, and is comprised through, the local (Massey 2007).

Urban redevelopment requires preliminary planning and decision-making practices in which particular urban spaces are singled out for resource distribution. Redevelopment commences through these institutional frameworks, and is based on metrics of need such as 'blight' and 'damage'. However, as Fraser (1988) makes clear, the politics behind *needs claims* are fraught with politics at several levels. First, needs are not straightforward but subject to interpretation. Second, those interpretations are strongly influenced by the person interpreting needs. Third, expressing needs and interpreting needs are subject to available public discourses. Fourth, the interpretation of needs occurs by particular actors embedded within social relations, privileging some need-interpretations over others. Finally, Fraser deftly notes that needs are often depoliticized by being relegated to the 'domestic' economic sphere, meaning that the needs are discursively placed outside the 'political', and hence not addressable

through restructuring of the political economy. The questions raised, then, are in regard to the ways in which particular groups' needs become implicated in redevelopment. Whose needs are satisfied, by whom, and using what discourses?

Scholars writing about gentrification have shown that this process tends to privilege the more powerful and well-represented populations. Gentrification has been shown to lead to increasingly exclusionary urban spaces through the privatization of public space, and that the inflow of capital to particular neighborhoods marginalizes and in some cases relocates populations previously living there (Davis 1992; Pulido 2000). This can encourage legislative measures intended to protect newcomers to a neighborhood, compromising the legitimacy of long-term residents' access to these urban spaces (Smith 1996). The effects of gentrification and urban redevelopment are experienced differently across different identities; in most cases, people of color (and other minorities) bear the brunt of the negative changes that occur with gentrification, including increased residency costs, misrepresentations by the public, and cultural displacement (Cahill 2007).

Redevelopment is an inherently spatial process, as capital materializes and manifests in the built environment *in particular places* (D. Harvey 1973; R. Weber 2002). This dynamic may be intensified in disaster relief contexts when there may be a stronger impetus to attract capital for rebuilding efforts. Decisions must be made regarding the *places* requiring the most attention, *where* to establish temporary housing, and the frameworks through which redevelopment will commence (establishing public versus private ownership of infrastructure, long-term versus short-term effort strategizing, etc.). Moreover we can look at the contexts from which aid comes, to observe another spatial logic: are redevelopment efforts spearheaded by the global North *for* the global South? What institutions, public or private, are redeveloping, and what implications does this have on the strategies and outcomes?

Increasingly geographers are beginning to note that technologies influence these flows of capital in the city (S. Graham 2005; M. Graham 2010). Technology factors into redevelopment and gentrification in three ways: by constituting an economy itself, and by providing geographic locations of needs. First, much attention has focused on building technology infrastructures. Due to the often very high cost of technology infrastructure, some places are 'plugged in' before others. In most cases these are wealthy urban spaces of the global North (Zook 2005), but in other cases cities are planned to be centers of technology from their beginning (Bunnell 2004). Second, technology is increasingly informing capital investment and resource distribution (Uprichard, Burrows, and S. Parker 2009). In the case of redevelopment, the geoweb has enabled the production of huge amounts of data that redevelopment actors may use to inform their response strategies (Zook, M. Graham, Shelton, and Gorman 2010). The geoweb can be used to bring spaces of the global South into market relations (Goeckermann 2011), or to address various kinds of urban problems (International Institute for Environment and Development 2009). My dissertation research focuses mainly on the latter, exploring the *specific* ways the geoweb influences redevelopment processes.

Poverty and Inequality

The discourse surrounding the geoweb often entails terms such as "empowering", "enabling", "democratic", and "participatory". In contrast, I am interested in looking at the inequalities that may be (re)produced in the geoweb. To that end I engage with ideas from the poverty & inequality literatures. Like these, I start from the perspective that social interventions such as welfare policy, technological development, and "natural" disaster have highly unequal effects across populations. The inequalities of the geoweb, while always present, emerge quite strongly and clearly in the moment of crisis mapping. In these moments the geoweb may influence urban redevelopment practices following disasters. Crisis

mapping involves four processes² that make it an inherently unequal endeavor: the enrollment of power relations, political economy, representations of knowledges, and urban redevelopment processes. In this section I first define inequality, and then situate the four processes in relation to my research.

Three intertwined approaches to poverty and inequality inform my research: discourse, political-economy, and lived experience. The first, poverty and inequality as discourse, is exemplified in O'Connor's (2002) argument that knowledge and claims about poverty are highly political and always contested. For example, discourses about "welfare state failure and moral decline" (2002, 5), while simplistic and challenged by poverty scholars, held strong political sway in the early 1990s and led to the Personal Work and Responsibility Act of 1996. The second approach to poverty and inequality is to focus on political economy. Harvey's (1982) adaptation of Marx's (1977) *Capital* and discussion of neoliberalization (2005; see also Peck and Tickell 2002) are particularly useful for this goal. Harvey introduces the concept of *accumulation by dispossession* (2003), where formerly public assets are made public and brought into capitalist relations. Neoliberalization, the current expression of capitalism, entails this devolution of state functions to the private sector, increased discourses of "personal responsibility", and increased reliance on free markets through free trade agreements. The final approach to inequality and poverty is to explore the ways these influence one's lived experiences, political horizons, and engagement. For Gurstein & Vilches (2010, 431–432) this relates to questions of a "just city": equality needs to "enable a broad spectrum of engaged citizenship... The unjust city is one of impediments: lack of adequate welfare rates, lack of affordable and secure housing, lack of childcare, impoverished social networks and food insecurity...". The distinctions I have made here are mostly for

² Crisis mapping is of course more complex than this; these are simply the four processes of interest to my research.

analytic purposes; the approaches are in practice closely intertwined. Goode & Maskovsky (2001, 4) pick up on my distinction by characterizing the "new poverty" as caused by "economic polarization, political demobilization, and market triumphalism". It is at the confluence of these three approaches that I find most productive for my own work.

Lawson, Jarosz & Bonds (2008) provide an empirical case at this confluence. Reporting on a research project in rural Washington, Idaho, and Montana, they note the tension between political economic causes of poverty and the contradictory representations and knowledges of it. They first document multiple scales of economic restructuring experienced by these communities. For instance, NAFTA resulted in decreased produce prices and thus slashed profits, national- and state-level welfare reform plummeted many poor people further into poverty, and a "large food-processing company closed its manufacturing operation, ... eliminat[ing] 1,000 jobs in a town of 10,000 and creat[ing] huge revenue and livelihood shifts in its wake" (2008, 741). Yet many leaders in these areas (e.g., commissioners, mayors, and job service coordinators) rely on discourses of choice, arguing that those in poverty have made a conscious decision to remain so. These 'undeserving poor' are implicitly - and often explicitly - "contrasted with the 'upstanding citizen and enterprising individual'" (2008, 750).

Technology factors into this general discussion by functioning as a metaphor and by shifting relations of inequality. First, technology has become a cultural metaphor for understanding poverty and the impoverished. Watkins (1993) argues that technological development is now equated with socioeconomic "development", and that those who fail to keep up with it are "behind-the-times", or "technological throwaways". Social or state assistance can do nothing to remedy these social cripples, since poverty is a symptom of personal failures to stay "up to date". Second, technology can be conceptualized in complex relations with inequality, in some ways perpetuating existing inequalities, in other ways opening new sites for inequality to worsen, or even perhaps decreasing overall inequality

(M. Gilbert 2010). This final conceptualization is arguably the most common in discourses of the geoweb.

The geoweb enrolls three processes that make it an inherently unequal phenomenon, and that influence processes of urban redevelopment: unequal power relations, political economy, representations of knowledges. First, unequal power relations allow people from the global North to map the global South. This phenomenon raises concerns regarding what is knowable by those working remotely, and the impact this limitation might have on redevelopment processes. The OpenStreetMap (OSM) interface captures this problematic: for OSM, "the map" consists of Cartesian and absolutely defined objects such as roads, buildings, fire hydrants, electric poles, and refugee camps. This is all important for disaster relief, but the North-South power relation that enables mappers to know these places (i.e., access to satellite imagery on which to trace, the expendable time with which to get involved, the ability to "feel good" by "helping", etc.) also derives its legitimacy from the very forces that produced the global North (Cartesian logic, scientific infrastructure to enable satellites, political superiority, and so on). Ushahidi sits in interesting relation to this discussion: not only was it developed in the global South, but it requires local knowledges – people on the ground reporting needs. In other words, it depends on a different power relation. However, not only is there a politics in needs claims, but also in need interpretation (Fraser 1988). Ushahidi further enables political and social recognition (Fraser 1997), but on whose terms (this can mean the software level, the institutional level, or the social level)? In other words, what are the terms on which this recognition is achieved?

The full effects of the geoweb's political economy have yet to be theorized. Leszczynski (2011) has effectively 'situated' the geoweb in political economy, arguing (as I imply above) that the geoweb's emergence in many ways reflects our particular capitalist moment. Political economy is essentially a socioeconomic relation in that it involves a mode of production, economic (re)distribution, and flows of

capital. One can observe the geoweb's political economy, for example, in the large amounts of venture capital invested in location-based services and geographic software/hardware such as iPhone apps, geographically-enabled search engines, and Google Maps APIs. Crisis mapping introduces interesting dynamics to political economy. First, OSM has been discursively contrasted with traditional GIS for its purported qualities such as 'efficiency', 'speed', and low use of resources. However, OSM works according to market logics by allowing Bing Maps use of its base map in exchange for OSM's use of Bing Maps aerial imagery (Leszczynski 2011). Another crisis mapping platform, Google's MapMaker, is proprietary and Google owns all data contributed to it. For places defined as 'crisis zones' where MapMaker is used - the Kibera slums of Nairobi, the people outside capital relations in the Amazon, etc. - mapping is undertaken in order to bring these spaces into market relations. Lastly, mapping platforms such as OSM and Ushahidi operate in the economic 'third sector' of non-profit. In a sense they represent the devolution of state government-led initiatives to individuals and to the non-profit sector, reflecting the discussion of neoliberalization.

The third way inequality is implicated in the geoweb is through representations of knowledges. For my research I am interested in the politics underwriting these representations in disaster relief contexts. Geographers have long discussed the politics of knowledge representation (S. L. McLafferty 2002; Kwan 2002a; J. Corbett and Rambaldi 2009; Jung and Elwood 2010), and I adapt these ideas for my context. What gets mapped in disaster contexts can be conceptualized as needs. I make this rhetorical turn both as a useful analytic lens, but also because it draws connections to Fraser's (1988) discussion of needs claims and interpretations. For Ushahidi, one can inquire into the terms on which needs are expressed, in other words, the discourses that are available for users to express needs, and the social groups that set these terms. What is an 'acceptable' need? On a software level this could mean questioning the pieces of data Ushahidi must receive in order to map the need. On a social level it could mean

questioning the limitations set on *which* needs are able to be expressed, and *how* the needs must be expressed. More broadly, this is a question of which knowledges are considered legitimate for which purposes. OSM focuses on "permanent" Cartesian knowledges to the exclusion of relational and interpersonal ways of knowing (i.e., roads are mapped, but not memories)³. In contrast, Ushahidi maps relational knowledges (i.e., police abuses, medical needs, etc.), but still must make exclusions for practical reasons.

Fourth, inequality manifests in the geoweb's influence on urban redevelopment. Urban redevelopment involves the distribution of resources and restoration of services, both of which are increasingly influenced by the geoweb. Like inequality, technology, and the three factors mentioned above, urban redevelopment is an inherently uneven process. The processes involved in determining the distribution of aid are fraught with complexities that mean some urban spaces will be redeveloped differently than others. The geoweb influence these processes, but how, specifically, is the topic of my dissertation research. At this preliminary point, though, I expect to see that urban redevelopment processes have shifted due to the availability of geoweb modes of mapping and data production. The geoweb mobilizes various forms of inequality that necessarily manifest in redevelopment contexts.

Closing Comments

I have prepared this statement to outline my approach to my dissertation research. In this statement I have outlined the three bodies of literature from which I borrow, and situate my interests in relation to them. I am most interested in how geoweb modes of mapping and data production influence the ways

³Interestingly, some Occupy Wall Street tents are being mapped in OSM, which raises a whole set of new questions related to this discussion. What are the politics behind mapping arguably "temporary" Euclidean spaces in OSM?

cities are redeveloped after disasters. In order to address this problem, I borrow from 1) geoweb and critical GIS literatures, 2) urban geography's interest in redevelopment, gentrification, and cybercities, and 3) the literatures on poverty and inequality. I have outlined the current state of literature in each of these, pointing to gaps that my research hopes to address. Specifically, I will make three primary contributions in my research. First, I will contribute to the geoweb literature by looking at how the geoweb influences the processes leading to and imbricated in urban redevelopment processes. Second, I will contribute to the urban geography literature by looking at the forms of urban redevelopment that emerge due to the geoweb, and the new inequalities that manifest in the urban landscape. Third, I contribute to the poverty and inequality literature by looking at the ways the geoweb (re)produces particular inequalities.

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