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**‘Training the eye’: formation of the geocoding subject**

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## **‘Training the eye’: formation of the geocoding subject**

**Abstract:** From 2004 to 2007, a nonprofit organization in Seattle conducted over 25 street surveys in ten neighborhoods. Participants in these surveys collected geographic data about community ‘deficits’ and ‘assets’ using handheld devices, while walking around their local neighborhoods. These residents marked graffiti, litter, vacant buildings, and abandoned automobiles, as well as, ‘friendly’ business districts, appropriate building facades, and peopled sidewalks – all among their categories of interest, initially borrowed from a New York City foundation responsible for developing the handheld devices. Here, I analyze the geocoding protocol, ‘Training the Eye’, that was created by the New York City foundation and was adapted by the Seattle nonprofit. This technology of citizen engagement in governmental practice enacts an embodied cartographic vision that is productive of liminal subjectivities. These practices of geocoding, of assessing place in space, are intensely bodily, both in their messy enactment of digitally-extended vision and in their data-based imaginings of bodies at the margins. I draw upon theories of the cartographic gaze to discuss how technologies of vision constitute particular urban imaginations and discuss how subjects are formed through the discourses and practices of geocoding.

**Key Words:** geocoding, cartography, body, vision, objects, subjects

### **Introduction**

Communities have to learn the language of government.

(Ruth Olson<sup>1</sup>, The Fund for the City of New York, 2008)

Geocoding is a technical and cultural practice. It registers materially discursive significance in discursively material ways. Meanings are constructed, not only in the bits and bytes of computer memory, but also, in the palimpsests of spatial memory, form, and substance (Graham forthcoming, 2010). In one resonance, geocoding is inextricably tied to language; the coded texts produced

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<sup>1</sup> I use pseudonyms throughout.

provides one mechanism through which we can come to understand its effects, as the expression of power-knowledge (Foucault 1977). In another resonance, geocoding is iterative action; the practices engaged demonstrate power's instability (Butler 1993). These resonances draw attention to geocoding as a constituted textual practice, a practice and language engaged through moments of training.

From 2004 to 2007, the nonprofit organization Sustainable Seattle conducted over 25 street surveys in ten neighborhoods. Participants in these surveys collected geographic data about community 'deficits' and 'assets' using handheld devices, while walking around their local neighborhoods. In this paper, I discuss the training of these resident surveyors to understand the formation of geocoding subjects. This system of training was developed by a foundation called The Fund for the City of New York. Ruth Olson, an employee of The Fund, described the importance of this training exercise to me, quoted in the epigraph. Here, she recognizes the importance of the language of government in advancing neighborhood agendas, whether that be to crack down on litter and graffiti, or to target and halt the presence of homelessness and the drug trade on city streets. She recognizes the need for tools which will help community groups to "learn the language of government" (Olson 2008).

There are a number of ways to situate this type of training: as the work of urban revitalization or renewal, as participatory research, as new urban governance, as spatial decision-making, among others. Here, I interrogate the training of geocoding subjects as bodily work. As this special issue theme is 'the limits of the body', it bears noting that I shall discuss the mapping body not as that which has reached or exceeded its limit, but as the body which maps the limit at which an other body enters the mode of visibility. In other words, I'm interested in the moments of mapping in which the concept of 'the body' enters in, and the other moments of mapping when the body cannot be coded.

I examine the training procedure, called ‘Training the Eye’, used to constitute geocoding subjects for both the Seattle and NYC nonprofits, in an inquiry that bears on the broader question of geographic or cartographic training. I draw both on the training materials and my own field research as a participant observer during this four-year mapping program. In what follows, I document how these practices of geocoding, of assessing place in space, are intensely bodily, both in their messy enactment of digitally-extended vision and in their data-based imaginings. I ask, how are these geocoding practices and the training protocol embodied and how does this technological embodiment enable constructions of difference, of bodies at the margins? I address this in three sections. First, I draw on and extend the critical cartographic literature to discuss how the practice of geocoding is embodied and produces subjects. Second, I ground this literature in the actual survey practice -- in the data created and in the relationship between seeing and owning. Third, I examine the training protocol used by the organizations, Sustainable Seattle and The Fund for the City of New York, to inform a broader critique of this specific visioning practice and the ways in which certain bodies are made marginal.

### **Map makings**

A central aspect of the critical cartography and critical GIS literature is the recognition that maps are *made*, and that these *makings* are fundamentally important for reading the products created by these practices. Therefore maps have been analyzed both from the perspective of representation and the sense-abilities of the more-than-representational (Lorimer 2005), a distinction I enroll between emphasizing the map as a visual product (as both a sign and a symbol) and emphasizing the practices that permeate the map in its production and in its reading (or re-production). Here, I review work in geography that emphasizes the latter, to foreground the bodies and subjects that engage in mapping practices.

J.B. Harley wrote in *Deconstructing the Map*, that “it is better for us to begin from the premise that cartography is seldom what cartographers say it is” (1989: 1). Since this work, a sustained series of debates have characterized a re-narration of the various social implications of cartography and GIS. Within a growing field of ‘GIS and Society’ studies, scholars reflected on the growth of an automated geography (Dobson 1993; Pickles 1993; Sheppard 1993), the role of GIS in the broader discipline (Taylor 1990; Taylor and Overton 1991; Clark 1992; Openshaw 1991, 1992; Lake 1993; Smith 1992), the societal implications of geospatial technologies (Pickles 1995, 2006; Sheppard 1995) and the possibilities for a science of geographic information (Goodchild 2006; Wright et al. 1997; Pickles 1997). In many ways, however, critical geographers are still working on Harley’s project, to “search for the social forces that have structured cartography and to locate the presence of power -- and its effects -- in all map knowledge” (1989: 2). The question of *how to practice* this form of critical cartography is still being elaborated, a point that Crampton (2001) has made about the Harleian project.

More recent scholarship in critical cartography and GIS have considered the bodies involved in map-making. Feminist and queer geography has articulated such an embodied map practice (Kwan 2002b; Schuurman and Pratt 2002; McLafferty 2002, 2005; Brown and Knopp 2008). Here, bodily and subjective formations condition map-making while map-making enables the formations of certain bodies and subjects. Brown and Knopp (2008) discuss the epistemological collisions that occur when a project about queer oral histories becomes mapped. The constitutive politics of queer oral history -- as a politics of visibility through action -- collided with what the authors describe as:

life-like forms of positivism, realism, pragmatism, and Cartesian rationality that insinuated themselves into the algorithms, hardware, and ongoing interpretation of map production (2008: 48).

What began as a routine geocoding of these historical sites easily slipped into metanarratives about spatial form, correlation, and causation. How knowledge was mapped, regardless of the level of

devolved authority to those orating these narratives, was under the purview of those wielding the instrument for carto-graphing.

The mapping of these queer narratives encountered ‘the epistemology of the grid’, as conceptualized by Dixon and Jones (1998). The grid epistemology permeates cartographic practice and specifically spatial analysis. As a “way of knowing”, they write, the grid epistemology enrolls a procedure for systematically observing and ordering spatial phenomena, and it is this procedure that “eventually becomes inseparable from these processes it helps to understand” (p. 251). The ontological presence of mapping practices intersect these ways of knowing (Del Casino Jr. and Hanna 2005; Brown and Knopp 2008; Kwan 2002a; McLafferty 2002). Somewhat in spite of the grid epistemology, then, these authors contend that when the practice of mapping becomes embodied, the map produced may have a radical impact and produce spatial knowledges of difference. McLafferty (2002: 266) writes that the use of mapping technologies to connect women’s “personal experiences about health and illness to a wider social and political agenda” was pivotal in the creation of new spatial knowledges. Likewise, Kwan (2002b, a, 2007) demonstrates in her research a decoupling of epistemology from method, as a response to critique that GIS evokes logical positivism. And her asking of the question, “Is GIS for women?” (2002b), is emblematic of a move within critical GIS to allow for the openness of the technology, to insist that it is not deterministic. Therefore, the embodiment of mapping practices makes possible a reworking of the grid epistemology within cartographic work.

Other lines of critique draw out the connections between visibility and the map; vision itself is part of a prolonged history of Western thought (Jay 1993). The cartographic impulse is to treat that which is visible as that which is mappable. However, this impulse extends, as Haraway (1991: 188-196) writes, into the view from nowhere -- the god trick. That which is visible is viewed from the mobile eye, at a distance, an extension of fleshly seeing. However, the map-maker’s gaze must not be conceptualized as something preeminent to the cartographic technology itself. Instead it is

always already in relation with the technology and the context of its use. This is inline with Nash (1996: 156), who argues following Rose (1993) that “the power relations of pleasures in landscape and looking can only be addressed through specific images and contexts”. Furthermore, the general field of critical GIS, as constituted by Schuurman (1999), acts upon precisely this assumption: that the practice of mapping can intervene in the destructive and oppressive potentialities of the mapping technology -- a ‘techno-positionality’ (Wilson 2009b).

Therefore, I conceptualize the bodily gaze of the map-maker as potentially open. Drawing on Wylie’s (2006) re-reading of the gaze in landscape studies, I suggest that the gaze of the map-maker is not, phenomenologically, centralized to an embodied position within the world, where the world exists only through the ‘naturalized’ abilities of vision. It is also not *necessarily* Cartesian, from a position distanced from the pre-existent world, seen in three dimensions. Rather, following Wylie, the gaze of the cartographer is in relation with the immanence of the world, which is both distant and intimate. This gazing subject therefore includes the world just as the world includes the gazing subject (Wylie 2006). However, the slippages that enable the map-maker’s gaze to become cartographic are embedded in particular mapping practices.

### *Bodily gaze, gazed-upon bodies*

The cartographic gaze is something quite specific and central to the construction of the cartographic subject. Kathleen Kirby recognizes this gaze as the setting in which subjects are crafted, that the act of carto-graphing “institutes a particular kind of boundary between the subject and space, but is also itself a site of interface, mediating the relationship between space and the subject and constructing each in its own particularly ossified way” (1996: 47). To understand the training practices of this Seattle nonprofit, I shall consider the bodily gaze of the cartographer and the gazed upon bodies by this geocoding subject. As Massumi has argued, opening up the positional grid that dominates knowledge work requires a “shift to *affirmative* methods”, to integrate the

“thought-path of movement” (2002: 12, original emphasis). To do so, I invoke these spaces of training as cyborg geographies -- as spaces where hybrid knowledges are made (Wilson 2009a; Whatmore 2002). In what follows, I extend a bodily analytic within critical cartography that I use to understand the training of geocoding subjects.

As Pickles (2004: 80) defines it, the cartographic gaze is “the particular constellation of ways of seeing with its particular practices and institutions of mapping”. Here, I draw on this concept of the cartographic gaze as an assemblage of practices and institutions. Mapping has been increasingly re-thought as a set of these kinds of practices (Kitchin 2008; Kitchin and Dodge 2007; Elwood 2006): practices of “locating, positioning, individuating, identifying and bounding” (Harvey 2001 [2000]: 221). Pickles suggests that three aspects of the cartographic gaze motivates this western notion of vision: 1) the role of perspective, 2) the importance of projection, and 3) the issue of the construction of accuracy (2004: 77). The cartographic perspective makes space in two dimensions: x-y. This dimensionality is preeminent to space as it is understood cartographically. Projection enables the cartographic perspective to vision something from some-where-else. It is the placement of these sightings into *the* metanarrative: the world understood as a system of locations.

Furthermore, the cartographic gaze projects the mind’s eye from the grounded body, to project a vision from nowhere. Finally, accuracy is constructed such that the cartographic gaze is universally applied. The creation of spatial knowledge was thus a project in generating a map accuracy that was definable within the context of an emerging, scientific cartography. Taken together, these three aspects of the cartographic gaze entailed the inscription of Cartesian spatial logics onto the surface of the Earth. Pickles (2004) and Rose-Redwood (2006) argue that this inscription marks the emergence of the ‘geocoded world’.

The critical cartographic literature has discussed the motivations of geocoding, emphasizing the ways in which bodies are figured within the calculative regimes of the state (Crampton 2010;

Crampton and Elden 2006, 2007; Huxley 2006). These regimes particularly invoke surveillance<sup>2</sup>, where the constitutive actions of the state around populations and individuals are literal mappings -- or geocodings -- of fleshly lives (Graham 2005; Graham and Wood 2003; Rose-Redwood 2006). In Rose-Redwood's (2006) study of American city directories of the late 18th and early 19th centuries, this cartographic gaze functioned to lay down a system to produce a space of enumeration. Likewise, Brown and Knopp (2006) analyze more contemporary forms of governmentality in products like the *The Gay and Lesbian Atlas*, which produces the visibility/invisibility of queer space. Representation through these cartographic techniques enable these calculative and enumerative spaces.

How are bodies enrolled in this gaze? How do bodies map and what are the limits to recognizing mapped bodies? If geocoding is a practice that constitutes subjects, what are the implications for mapping bodies, both the bodies that map and the mapped bodies? As Olsson (1991: 138) writes, "To form subjects is consequently to form bodies, especially to redraw the boundaries of the body." For Olsson, this redrawing of the body happens through language, specifically through a language of distancing -- of the action that language creates in practices of identifying and naming. He continues,

And thus it is that the tremulous body is a means of meaning. The eye and the index finger become metaphors for grasping the distancing inherent in all subject formation. (p. 143)

The geocoding subject is both constituted by the perspective, projection, and accuracy of the cartographic gaze -- which invests it with the conditions of a specific vision -- and by the bodily reconfiguration of worldly contact. Mapping practices invoke this subjectification as spatial knowledge is recorded, depicted, and expressed. And while research in critical cartography and critical GIS have documented the *outcomes* and *products* of cartographic practice, less research has

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<sup>2</sup> Here, I invoke Foucault's work on surveillance in *Discipline and Punish* (1995 [1977]), particularly as surveillance studies has been re-invigorated with the English translation of his 1977-1978 lectures, *Security, territory, population* (2007). As helpfully pointed out by one reviewer, these kinds of surveillant calculations also provide openings for multiple contestations and resistances.

discussed the moments of spatial knowledge acquisition -- the moments of capture within the mapping machine. In the following sections, I trace the production of geocoding subjects in a community mapping effort in Seattle and interrogate the training exercise enrolled to code urban spaces and bodies in distanced ways.

### **Surveying Seattle: seeing, tracking, owning**

Sustainable Seattle recognized that a key opportunity for sustainable development was the need to connect the concerns of community members to grounded change in their neighborhoods.

Previously, the organization had been involved in a series of regional sustainability reports during much of the 1990s (Holden 2006b, a). These reports, while gaining international recognition and becoming the model for other regional sustainability efforts, were felt by some in the organization to lack strategies for creating change in the greater Seattle area. By engaging residents in mapping their own neighborhoods with regards to sustainability, Sustainable Seattle believed they could create actionable indicators.

In partnership with The Fund, Sustainable Seattle organized community residents to walk and code objects on their neighborhood streets, using software called ComNET (Computerized Neighborhood Environment Tracking) on a mobile device, see Figure 1. This surveying of city streets enacts a specific geocoding subject that takes as its objects, the neighborhood street and sidewalk. Here, I suggest how visibility becomes data during these surveying practices, and how this transformation motivates a discourse of ownership and responsibility.

[Figure 1 here.]

While Wood's (1992) now classic text notes the power that maps wield, more recent analyses document the map as form through which knowledge-power operates (Crampton 2001; Crampton

and Elden 2007). From this perspective, maps enable the flow of power in directions that are both potentially enabling and disabling. This becomes clearer as Martha Pitzen, the program manager at Sustainable Seattle, discusses how service-learning projects in university-community partnerships enabled a new way of thinking about the urban. One student group worked to map trends and presented specific overlays to community members:

And GIS can be really useful, because, in fact, last year the [student] group mapped out the indicators for trend analysis in the International District: [things like] pedestrian safety and public health, litter, graffiti. ... And then they talked to some people in the neighborhood, [asking] “Do you see anything profoundly interesting here?” Virgil Dominion, [a community member] from the public safety group, actually said, “Well, there’s crime here. So there’s a spike of litter and other elements of cleanliness, and some safety concerns, because there’s drug dealing going on in that block area.” So, I thought that was interesting, actually... [that] from the maps, we could see that. (Pitzen 2007)

Fundamentally, the practice of mapping constitutes the visual language within which specific relationships between subjects and objects are made imaginable. As Pitzen describes above, the maps enabled the organization to ‘see’ and construct particular relationships. The maps constituted the supposed relationship between crime and cleanliness, and the GIS created a visual language that furthered this assumed causality. Granted this causality is logically specious, but the spectacle that is generated, nevertheless, holds. Data become, in this sense, inextricably tied to visuality.

By surveying their neighborhood streets, residents were linking their perspective to data -- their vision was linked to code. This connectivity became precisely what Sustainable Seattle was seeking to establish -- that what residents saw and became concerned about on the streets could be turned into data that could inform municipal government. Jennifer Roberts, the first program manager of the survey project in Seattle, discusses the initial attraction to the ComNET technology:

I think neighborhood folks were really psyched about going out, tracking stuff on the street with technology, and having data that they could sort of take to people in city government

and say, “Hey, here are a bunch of things in our community that we want help with, or need fixed.” (Roberts 2008)

Roberts reflects with me about the initial excitement of using handheld technologies with community residents to gather data which would be used to address their concerns about neighborhoods. This was also clear in discussions with community residents. Tonya Oriega, an intern with Sustainable Seattle, also shared this understanding:

I think this is pretty much how the data goes. You know presenting what you’ve collected, it helps the city to see what’s going on in the neighborhoods, things that are being collected. (Oriega 2007)

The city was aided to ‘see’ the neighborhoods in this constructed (assumed legitimate) way. The gaze of the concerned resident therefore linked ‘seeing’ with data. The handheld device and the data model it advances extend (and in this case focus) the vision of the concerned resident. The geocoding subject works through such cyborgian visioning.

These mapping bodies are subjects produced through these mapping practices – a collaborative effort of university, nonprofit, and community entities. They are asked to take stock of their neighborhood streets, to own and become responsible for what is around them. As Brenner and Theodore (2002) suggest, these interactions with the urban underscore the neoliberalization of cities more broadly, as the discourses of ownership and responsibility trickle through the projects of neighborhood assessment by quality-of-life indicators. Furthermore, the mere prospect of this kind of public-private partnership is in step with the devolution of state services more broadly. Janice Nelson, the then executive director of Sustainable Seattle, demonstrates how this neoliberalizing discourse enters into the discussion of resident training and the furthering of the organization’s mission:

The part about training citizens to walk their neighborhoods, to observe what’s around them, to kind of take ownership for what’s around them, for broken sidewalks, for streetlights, and

what-not, made it much more aligned with what we were trying to do, and made this program much more valuable to the organization. (Nelson 2008)

It is remarkable how these things of the urban built environment -- sidewalks and streetlights -- quickly become objects belonging to a responsabilized citizenry. For Nelson, the training of residents to see their concerns in the objects of the neighborhood street, is also a training of responsible citizens.

Geocoding subjects assume ownership through their coding practices. Kathy Caruthers, program director at the International District Housing Alliance, comments on the importance of the activity of documenting and owning data:

To us, it isn't just data collection, but that there is an action that can physically come out of that. And the action of documenting itself, is such an empowering component of civic participation. It's these people owning their data. So, I think that aspect is something that really appealed to us. And, obviously, that's also true for ComNET, right. It's the same idea. (Caruthers 2008)

The taking of responsibility for the objects of the urban scene leads to ownership of one's concerns, manifested in the form of data. Sandy Weng, the director of the Department of Neighborhoods at the City of Seattle and previous partner with Sustainable Seattle, expands this concept of ownership to include the broader community:

Ownership of communities is a very important thing in the success, the sustainable success, of the community, so it just makes sense that geographical tools would really be the best thing to use in reinforcing people's sense of place and sense of ownership of that place. (Weng 2008)

The linking of neighborhood concerns to municipal action is actualized through code; however, the practice of codework itself is what further ties individuals to "place" and reinforces discourses of ownership and personal responsibility. Geocoding subjects are thus constituted through the linkages between the act of 'seeing' and its materialization in the form of data and through these ownership

discourses. In the next section, I discuss the training exercise itself to better understand the formation of bodies that see, track and own, and the specified ways in which this formation implicates data-based, marginalized bodies.

### **Mapping bodies: ‘training the eye’**

They learn the vocabularies... Like, when I do the ComNET [survey] now, I can look at something and, um, already sort of know what feature it would go under. (Oriega 2007)

According to training materials designed by The Fund, the ComNET process “enables communities to serve as ‘extra eyes’ for government, by introducing easily operated mobile devices with synchronized digital cameras to community organizations, so that troublesome street level conditions can be recorded and tabulated quickly, easily and accurately” (The Fund for the City of New York 2008: 9). These “extra eyes” require training, and as Oriega discusses in the above quote, these well-trained geocoding subjects are able to read their streetscapes using the vocabularies of the ComNET system. They “learn the vocabularies”, just as Olson at The Fund prescribed in the epigraph. Extending my previous discussion of the motivations for this kind of surveying activity, in this section, I examine the training materials used by this Seattle nonprofit, to explore the formation of mapping bodies.

The training protocol that used ComNET was iteratively developed over four years of surveying in Seattle, involving ten neighborhoods, with three main trainers: Martha Pitzen and Jennifer Roberts, quoted above, and, later, Flora Muñoz, quoted below. Each survey was facilitated by Sustainable Seattle, and included neighborhood residents, representatives from neighborhood organizations including chambers of commerce, and other volunteers and staff members from Sustainable Seattle. Trainees were selected by Sustainable Seattle on recommendation from partner neighborhood groups and from other local community-based organizations. Training sessions mainly occurred during the workday, to allow, according to Sustainable Seattle, an accurate

measurement of street activity. Of course, this made it difficult for those with less flexible work schedules to attend these surveys.

As was typical in these roughly half-hour training exercises, a member of the Sustainable Seattle staff would use a PowerPoint presentation to describe the survey, overview the handheld technology used, detail the roles of the members in each survey team, and train the members on “how to look” at the city street. The neighborhood surveys were conducted by teams of two or three people walking pre-defined routes through the neighborhood. Figure 2 displays a slide from this presentation used to describe the survey team. Each team member had a predefined role: a ‘recorder’ who was responsible for running the handheld device, an ‘observer’ who was responsible for directing the team to look in particular ways at particular ‘things’, and a ‘verifier’ who was responsible for checking that the way the recorder entered data into the handheld reflected the team’s interest. Each team would be assigned either an ‘asset’ route, mapping what was felt to be the ‘nice’ things about the neighborhood, or a ‘deficit’ route, mapping what the organization often described as ‘opportunities’ for improvement.

[Figure 2 here.]

The teams used a handheld computer to enter features and the condition of that feature into the device, and assign it to a particular address or intersection. ‘Features’ and ‘conditions’ become the lexical categorizations of this technology. Figure 3 displays an example of these feature-condition sheets that the team member’s verifier would carry during the survey. Many of these ‘features’ include objects of the built environment: streetlights, signposts, benches, etc. Among these objects of the street, however, other ‘features’ stand out (enlarged in Figure 3): ‘Persons in Need’, which is a feature marked by the conditions of visible ‘panhandling’, ‘persons sleeping in public’, and ‘public inebriation’; ‘Suspicious Activity’, which is a feature marked by the conditions of

‘abandoned shopping cart’, ‘alcoholic beverage containers’, ‘condoms’, ‘drug paraphernalia’, and the presence of ‘urine or feces’; and, appearing on the reverse of this sheet, ‘Vehicle’, which is a feature marked by the conditions of ‘abandoned’, ‘appears to be lived in’, and ‘broken windows’.

[Figure 3 here.]

These represent something quite different from the other feature-conditions. These categories in the ComNET data model are not specifically of the built environment. Streetlights, benches, sidewalks, curbs, alleys, etc., are all physical features of the urban; all are things that fall into disrepair and require some governmental entity to either fix or replace. I argue that these three other feature-conditions indicate directly or indirectly the presence of certain bodies as features which require governmental intervention. Furthermore, the feature-condition called ‘People’, also codes bodies, but in a qualitatively different way. Here the ‘conditions’ of People are positively flagged in bold and italics – as ‘civically engaged/activism’ and ‘active/healthy’. This qualification of certain bodies as ‘assets’ or ‘deficits’ needs underlined: that in the mapping of objects of the city street, urban bodies are also mapped.

During the training exercise, neighborhood residents would typically ask about particular feature-conditions, and gain clarification on particular instances that might cross several categories. However, during my participant observation of these sessions, not a single resident would inquire as to these other feature-conditions that clearly code certain bodies of the street. Instead, the trainers shifted their focus to the handheld device, displayed in Figure 4. The object of the street, in this case a damaged fire hydrant, is being coded. This gaze assembles space and characterizes it through code: feature and then condition, followed by location. The geocoder in this training example has geocoded; the Sustainable Seattle staff member continues the training exercise.

[Figure 4 and Figure 5 here.]

After describing the terminology and the technology, the actual gaze of the surveyor is trained. The residents are told they will walk a particular route (pre-coded into the ComNET handheld devices), and that only certain aspects of the street are within the boundaries of accepted coding practices: namely, the sidewalk, the part of the street nearest the sidewalk, and the facades of adjacent buildings. Figure 5 depicts where the surveyors are to direct their gaze. The spaces of the street that are to be surveyed have been delineated. Then, using a series of photographs, the resident surveyors are ‘tested’. A photograph of a street scene is displayed, as in Figure 6, and the residents are asked to use the vocabulary of ‘features’ and ‘conditions’ to describe what is ‘wrong’ in the scene. After spending about two minutes on the scene, the staff member would advance the presentation to identify all the things that needed coded, as well as the specific language that should be used to describe the objects. It is at this juncture that the residents become surveyors, having practiced the terminology of the handheld device, to identify objects of the street using the language of government.

[Figure 6 here.]

### *Street objects and street subjects*

Geocoding subjects are formed by this training exercise. As cyborgs, the efforts of these hybrid subjects to code their landscapes are both desirous and calculating. Their call to make a difference, to diffract, is multiply motivated, to both reclaim their neighborhood streets in the ownership that comes with data collection and to follow orders from their centralized data model. However, cyborgs are resistant to standardization. These geocoding subjects have a body, and as such they embody their cyborgian apparatus differently. The surveyors who participated in the ComNET

program were of different ages, ethnicities, and socio-economic backgrounds. Their concerns about the city street differed, although these differences were less reflected in the data model of the handheld devices. Their subjectification meant that their bodies were to become altered -- their way of seeing and interacting with their neighbors and their government was to be challenged.

For these geocoding subjects, bodily engagement with the urban street was internalized through the categories and terminologies of the ComNET technology. The act of engaging the street and the neighbor becomes retooled through the handheld device and its technologies of assessment. This survey protocol relies upon bodily response, an action, a temporary halting of the urban voyage to enter a record, to observe and encode the affective register of place. As such, movement down the street becomes a series of stops and starts, for moments of visual inspection and data entry. The place-based narratives and grounded experiences of everyday urban living were funneled through the ComNET system. The categories served to abstract the differentiated, nuanced concerns on the streets into discrete points of data.

Learning the vocabulary of the technology itself was inscribed in bodily ways. Kathy Caruthers, program director of the International District Housing Alliance's youth program, describes how these terminologies were internalized:

Because our youth are a limited English-speaking... before they actually did the ComNET survey, I think we were training for four weeks on just vocabulary. So you know, youth who had been in the country less than six months, could use the word 'bollard', but they couldn't use anything else. They came out with a very strange vocabulary, I will say." (Caruthers 2008)

The terminologies of the handheld device become part of the language of these young surveyors. The performative aspect of this survey practice, what Butler (1993) has described as power in its "reiterated acting", constitutes these geocoding bodies. This technology of assessment becomes implicated in their visioning of the urban scene.

This use of the citizen body is well inline with the objectives of local government. For some at the City of Seattle, this move to place these assessment technologies in the hands of residents worked to shift citizens away from complaint systems and into reporting systems. Sandy Weng, director at the Department of Neighborhoods, describes how this reporting system might work, drawing on her experience with the ComNET survey:

If we had ComNET equipment at the neighborhood service centers that community members could pick up, when they do their walk around the neighborhood, [they] could download it at the neighborhood service center into a city computer, so that the city could actually use the information and track the information geographically... It means that if there's a regular reporting, it's not about being angry about something. And the city has the information to be able to respond to it, that's not based necessarily on a complaint. Reports are just a much better way to do partnerships, than complaints. (Weng 2008)

According to this narrative, community residents would incorporate neighborhood assessment as part of their weekly routine. While they walk around their neighborhood, residents could also be generating data that would be uploaded into a central computer. For Weng, this is about citizens as regular reporters of information, as partners with the city. Their digitally-extended vision become part of the vision of the state, a cyborgian enhancement that is not without a looming sense of unease.

The possibility for discussing the bodies of the urban street were foreclosed, captured by an objectifying glance at 'abandoned' shopping carts and graffiti tags. As a result, in this formation, people can become street objects. It is precisely how these kinds of assessments code and classify urban space that I suggest should give geographers and GIScientists some pause. Ian Hacking describes this process:

We think of many kinds of people as objects of scientific inquiry. ... They are moving targets because our investigations interact with the targets themselves, and change them. And since they are changed, they are not quite the same kind of people as before. The

target has moved. That is the looping effect. Sometimes our sciences create kinds of people that in a certain sense did not exist before. That is making up people. (2006: 2)

The coding of street objects, to create data about objects, constitutes “kinds of people”. In the ComNET survey, kinds-of-people are made as objects of inquiry. These are bodies that cannot be coded, nor discussed, but can only be referenced through the objects of their daily actions. These are the houseless body, the loitering body, and drunkard and the druggie. These bodies cannot be discussed during the geocoding process, as per the formation of the geocoding subject -- the objective observer, tracker, and owner. These kinds of discussions would complicate the objective surveying practice, and were carefully avoided during survey training sessions. Nonetheless, people become objects through what cannot be said, the required silence within the surveying machine.

While they cannot be coded into the ComNET system, these bodies are marked. I discussed this with Flora Muñoz, a staff member at Sustainable Seattle, on the topic of the feature, ‘suspicious activity’:

Muñoz: “So, if you see drug paraphernalia... and then the abandoned shopping cart, which never made any sense to me... honestly...”

Wilson: “Why did they keep it?”

Muñoz: “[laughter] I have no idea! I don’t think anyone ever made a motion to remove it... And that was something I think was generated out of New York, and um... and so I have no idea why it was kept on there... I don’t think it ever got [marked]. Or I think if it did, people were like, ‘oh, let’s track that cause there’s an abandoned shopping cart’, you know, for just like the novelty of it versus because it really means anything.” (Muñoz 2007)

Several moments intersect in this discussion excerpt. The objects of the street themselves allow Muñoz to avoid the messy discussion of who those objects represent: the street subjects. The relationship between ‘suspicious activity’ and the ‘abandoned shopping cart’ is drawn. The coding of ‘abandoned shopping cart’ as ‘suspicious activity’ is read as a “novelty” in the game of geocoding. For Muñoz and many of the geocoders, that it is a novelty offsets that its coding holds any meaning.

These are the data-based bodies that cannot be coded (and yet are marked, through the objectification of their lives lived on the street).

This is in contrast to the bodies that can be coded, and are unmarked. These are bodies that are explicitly coded within the ComNET system: the shopping body, the body in or with stroller, and the diverse body. The organization's interest in counting these bodies of the streets is indicative of a particular limitation, around *which* bodies matter. These were called 'assets', and several communities participating in the surveys were interested in collecting this kind of data -- about these kinds of bodies.

## Conclusions

For, I both see and am seen; my body belongs to both the order of vision and the order of visibility. (Wylie 2006: 525)

Further, I argue that in the present political climate, *not* being registered, *not* making it into certain databases, can have its own potentially quite profound negative consequences.

Indeed, we may be witnessing the emergence of a new and very important social distinction between the normally visible and the 'underscrutinized.' (Hannah 2008: 302, original emphasis)

The ways in which a neighborhood resident comes to interact with her government is formed in these moments of mapping. In the above quote, Wylie underlines the visual function of the body -- both to see and to be seen. Here, I have considered mapping foremost a visual practice, and therefore an embodied practice. To see and be seen is the dual function of the map. Along these lines, I have reviewed the critical cartography literature for the ways in which mapping is bodily work. I have drawn a distinction between the cartographic gaze and the gaze of the cartographer -- the former a grid epistemology of vision and the latter the instantiated visioning of a mapmaker, which is not necessarily reducible to the former. By situating this literature in a discussion of a

training session whereby Seattle residents learn to map their neighborhoods, I have traced the formation of geocoding subjects, of mapping bodies that see, track, and own.

In this study of the training of geocoding subjects, being seen is significant. Not being seen and therefore not being coded -- what Hannah describes above as being 'underscrutinized' -- has its own consequences. Interrelated with the formation of the geocoding subject, I have discussed the explicit coding of certain bodies and the implicit, non-coding of other bodies in this four-year survey of ten neighborhoods in Seattle. In doing so, I have highlighted the importance of language in mapping practices, specifically as these practices constitute people as data-based objects. I have also documented the ways in which mapping logics become inscribed into bodily vision, focusing specifically on the training protocol used to train residents to code their neighborhoods.

[Figure 7 here.]

The training of geocoding subjects happens in moments where community residents interface with handheld technologies and neighborhood assessment endeavors. The photograph in Figure 7 captures one of these moments in the makings of urban space. The resident in the back of the room, scratches his head. To his left, another resident shifts to her side to better see the speaker, the trainer. In front of her, a resident leans forward to read the PowerPoint presentation; the lights in this conference room make it hard to see the survey routes and the diagram of the handheld computer. This is the training of geocoding subjects. These are the moments that constitute urban space.

More research should continue to look to these everyday moments of geocoding -- particularly where the question of representability motivates its practice. As this code work becomes more mobile, interconnected, and ubiquitous, geographers will be responsible for tracing these new maps, made not by us, but through new mapping practices. Our analyses of these

cartographies requires our attention to the various present absences, the spaces between the spaces, and those that are forced to inhabit them.

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## Figures



Figure 1. Two concerned residents, one with a clipboard of the ComNET data model and the other with the ComNET handheld device, inspect the ‘abandoned shopping cart’. (Sustainable Seattle 2004)

**Team Roles**

**Recorder**

**Verifier**

**Observer**

**Observers (everyone)**

- Have basic knowledge of problem types.
- Scan along route for problem types and point them out to Recorder.
- Watch out for safety of team members focused on other duties.
- Wear lavaliere with the printed list of Street Features for easy reference.

The diagram features a photograph of three people on a sidewalk. One person is labeled 'Recorder' and is looking at a clipboard. Another person is labeled 'Verifier' and is pointing at a chalkboard with a drawing. A third person is labeled 'Observer' and is looking towards the camera. The background is a blue wall with a chalkboard.

Figure 2. During the “Training the Eye” presentation, surveyors would review their roles on the survey team. (Sustainable Seattle 2004)



Computerized Neighborhood Environment Tracking (ComNET™)  
International District Features & Conditions List, Seattle, 2004-2005

<p><b>Alley</b> Dumping (Large Items) Litter Other</p> <p><b>Animal</b> Dead Feces Other</p> <p><b>Banner</b> Other Torn Decorative</p> <p><b>Bench</b> Dissipair Graffiti Other Ewof</p> <p><b>Building</b> Artswork/Historically Signs/signage Fluors/Stickers Posted Graffiti Other Safety Hazard Vacancy- Commercial Vacancy- Residential Unsecured</p> <p><b>Bus Stop, Bench</b> Dissipair Graffiti Other</p> <p><b>Bus Stop, Shelter</b> Fishing Fluors/Stickers Posted Graffiti Litter Other</p>	<p><b>Bus Stop, Trash Can</b> Damaged Fluors/Stickers Posted Graffiti Other Overflowing</p> <p><b>Business</b> Specialized Other Popular</p> <p><b>Crosswalk/ Intersection</b> Crosswalk Missing Lines Faded Litter Other Uneven Pavement</p> <p><b>Curb</b> Damaged Not Level with Sidewalk Other Paint Faded</p> <p><b>Curb Ramp</b> Damaged Missing Not Aligned Other</p> <p><b>Driveway</b> Not in Use Other Uneven Pavement</p> <p><b>Dumpster</b> Clean/Proper Disposal of Garbage Graffiti Needs Repair/ Replacement Odor Other Overflowing</p>	<p><b>Grate/Inlet</b> Clogged/Ponding Grate Broken Litter Not Level with Roadway Other</p> <p><b>Historic Structure</b> Artswork/Historically Significant Culturally Significant Design Dissipair Other Well Maintained/ Under Renovation/ Construction</p> <p><b>Kiosk Directory</b> Dissipair Other Used</p> <p><b>Lot, Vacant</b> Dumping (Large Items) Fence Broken Graffiti Invasive Plants Litter Other</p> <p><b>Mailbox</b> Graffiti Other</p> <p><b>No Conditions Found</b></p> <p><b>Other</b> Other</p> <p><b>Parking</b> Double Parked Cars Illegal Parking Other</p>	<p><b>Parking Meter</b> Damaged Graffiti Other</p> <p><b>Pay Station</b> Damaged Graffiti Other</p> <p><b>People</b> Civically engaged/Activism Active/Healthy Other</p> <p><b>Persons in Need</b> Other Panhandling Persons Sleeping in Public Public Inebriation</p> <p><b>Planter</b> Blooming/Greenery Damaged Empty Graffiti Litter Other Weeds</p> <p><b>Planting Strip</b> Asphalt/Concrete Should be Removed Greenery Invasive Plants Litter Not Level with Sidewalk Other Rotted Weeds</p> <p><b>Pollution</b> Air Noise Other</p>	<p><b>Public Art</b> Damaged Dirty Educational Fluors/Stickers Posted Graffiti Needs Repair/Replacement Other</p> <p><b>Public Toilet</b> Damaged Graffiti Other</p> <p><b>Publication/ Distribution Box</b> Broken Excessive Number of Boxes Fluors/Stickers Posted Graffiti Impeding Walkway Other</p> <p><b>Roadway</b> Bike Lanes Needed Litter Other Pothole Under Construction /Repairs Uneven Pavement</p> <p><b>Roadway Utility</b> Cover Broken Missing Not Level with Roadway Other Under Construction/ Repairs</p>	<p><b>Sidewalk</b> Bolted/Damaged Crack(s) Dumping (Large Items) Hole Invasive Plants Litter Other Pavers Cracked /Damaged Pavers Missing Under Construction/ Repairs Uneven Pavement Vegetation Obstructing Sidewalk</p> <p><b>Sidewalk Utility</b> Cover Broken Missing Other Not Level with Sidewalk Under Construction/ Repairs</p> <p><b>Sign, Bus</b> Damaged Graffiti Not Readable Obscured Other Sign/Pole Fallen</p> <p><b>Sign, Other</b> Damaged Educational/ Decorative Graffiti Not Readable Obscured Other Sign/Pole Fallen</p>	<p><b>Sign, Parking</b> Damaged Graffiti Not Readable Obscured Other Sign/Pole Fallen</p> <p><b>Sign, Streetname</b> Damaged Graffiti Not Readable Obscured Other Sign/Pole Fallen</p> <p><b>Sign, Traffic</b> Damaged Graffiti Not Readable Obscured Other Sign/Pole Fallen</p> <p><b>Streetlight</b> Base Plate Missing Decorative Damaged Pole Exposed Wiring Fluors/Stickers Posted Graffiti Not Functioning Properly Other Peeling/Scraped Paint/Rusted</p> <p><b>Suspicious Activity</b> Abandoned Shopping Cart Alcoholic Beverage Containers Condoms Drug Paraphernalia Other Urine/Feces</p>
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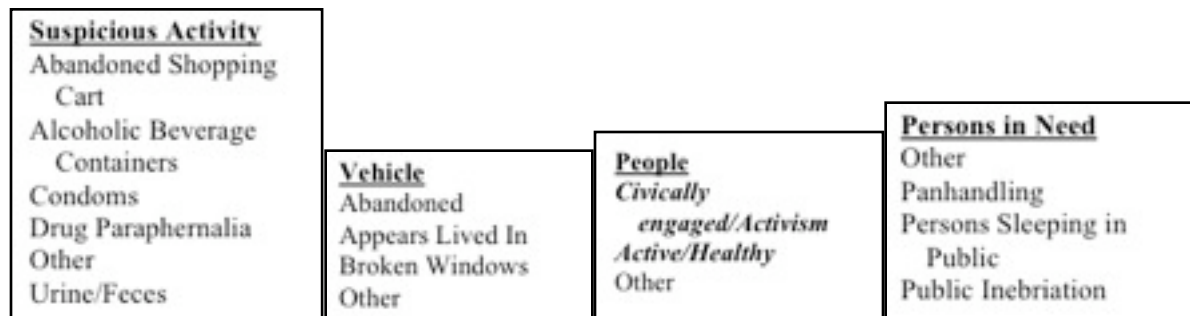


Figure 3. The “feature-conditions” sheet used during the surveying of Seattle neighborhoods functioned as the data model for the ComNET system. (Sustainable Seattle 2004)



Figure 4. The ComNET handheld device. (Sustainable Seattle 2004)

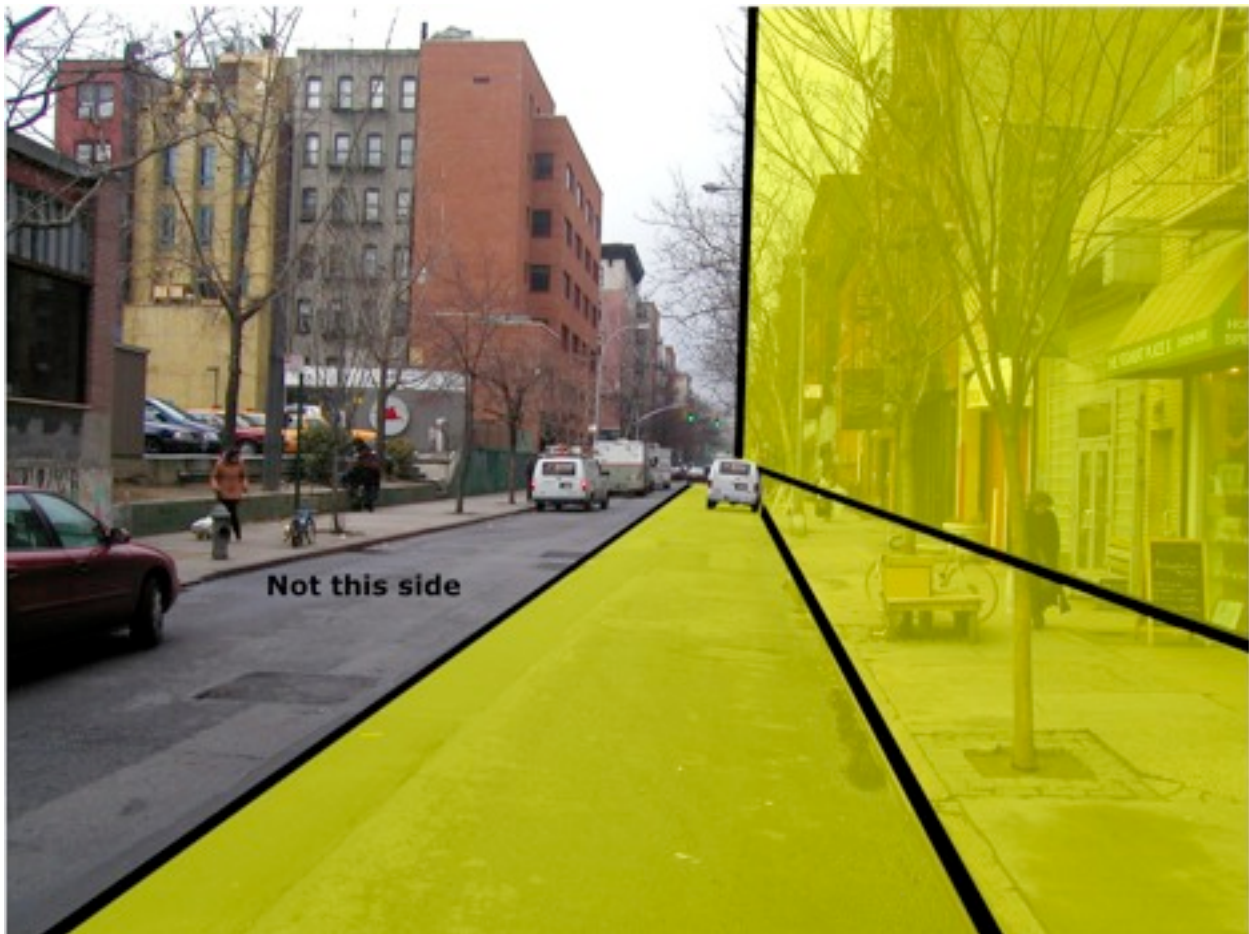


Figure 5. This training slide sought to direct the surveyor's gaze during their walked survey route. (Sustainable Seattle 2004)

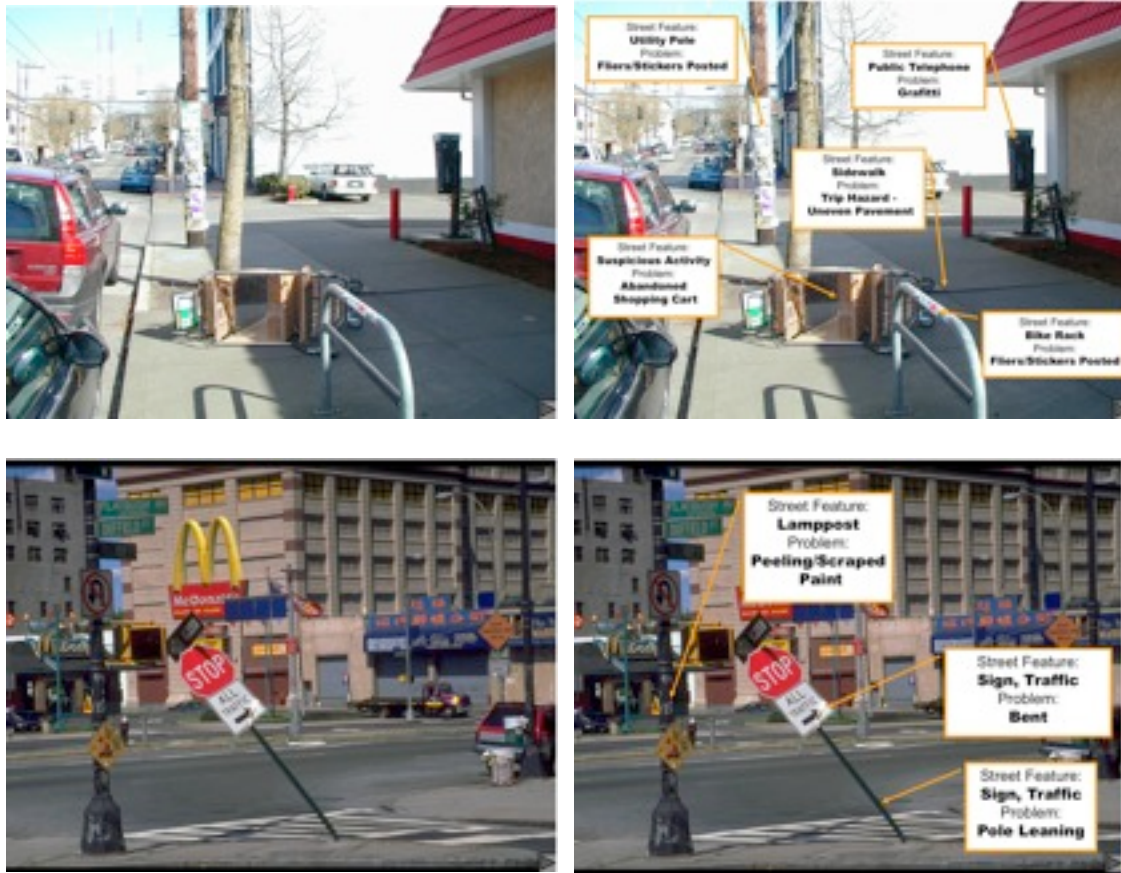


Figure 6. Residents would be asked to use their feature-conditions sheets to practice identifying things in the urban scene that need recorded in the handheld device. (Sustainable Seattle 2004)



Figure 7. The training of geocoding subjects. (Sustainable Seattle 2004)

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