Alternative Cartographies
Building Collective Power

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A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Geography.

Chapel Hill
2012

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Abstract

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Alternative Cartographies Building Collective Power
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Maps have a significant legacy as tools of statecraft, imperialism and capitalism. Maps and map-making, however, can also be powerful methods of building community power. This thesis traces out the complexities of how a few particular "counter-," "critical," and "alternative" cartographies have worked.

Alternative Cartographies Building Collective Power serves as a tool-kit of sorts for alternative cartographic practice. Chapter 1 gives a brief history of critical cartography, summarizing what is meant by "Western state cartography," and giving a few illustrative examples of alternative cartographic practice. Chapter 2 explores what can happen when a group comes together to make a map or maps, with the intention of building new collective social formations through map-making. Chapter 3 draws on concepts from Community-Based Participatory Research to look at the interaction between a cartographer or group of cartographers (as "experts") working alongside other people who are not involved in map-making themselves but nevertheless have a stake in the maps and what they depict.

Acknowledgments

None of this work would have been possible without the other members of 3Cs: the Counter-Cartographies Collective. For going-on six years of researching, map-making and breaking bread together, thanks to: Maribel Casas-Cortes, Sebastian Cobarrubias-Casas, Craig Dalton, Liz Mason-Deese, Nathan Swanson, and Lan Tu (and of course John Pickles, Cecilia Durbin, Gabriel and Samari, and others). Hudson Vaughan and the other members of UNC-NOW and the Marian Cheek Jackson Center were and continue to be important collaborators. Thanks to Carla Norwood and Gabe Cumming not only for their leadership and mentorship on the Warren County mapping, but also for continually reminding me that it *was* possible to write a thesis.

Many folks reviewed drafts, were sounding-boards for ideas, and offered to sit and write with me: Allen Bell, Beth Bruch, Emily Buehler, Yolanda Carrington, Annelies Goger, Pavithra Kathanadhi, Tony Macias, Anna Lena Phillips. The ideas in this thesis were also refined through a Fall 2011 Counter-Mapping workshop, in which Vince Brown, Chris Courtheyn, Pavithra Kathanadhi and Haruna Suzuki participated. Lastly, and most especially thanks to all of my friends and family who were shoulders to cry on and cheerleaders throughout this process, and to Noah Rubin-Blose.

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Introduction

In the past two decades there has been an explosion of work naming itself "counter-cartography." Assuming that all maps *work* through complex and contingent assemblages of concrete practices and actors, this thesis traces out the complexities of how a few particular "counter-," "critical," and "alternative" cartographies have worked. I'm interested in the particular ways in which counter-cartographic practice is able to depart from mainstream cartography, and in so doing make, in small and large ways, a better world possible. My aim is to weave together theoretical accounts of counter-cartography with concrete detail of the day-to-day practice of bringing together different people and communities to make maps.

I hope that these chapters can serve as a tool-kit of sorts for alternative cartographic practice. "Tools," here encompass responses to particular logistical questions (for example, how to structure a project so that people with different skillsets can meaningfully contribute), as well as theoretical entry-points and real-world examples. I have organized these tools into two categories, based on commonly encountered situations. Chapter 1 lays the foundation for the rest of the thesis by giving a brief history of critical cartographic thought, summarizing what is meant by "Western state cartography," and giving a few illustrative and hopefully thought-provoking examples of

alternative cartographic practice. Chapter 2 explores a context common to many projects naming themselves "counter-cartography" – in which a group of heterogeneous actors (people or organizations) comes together to make a map or maps, and in so doing build a new collective social formation. This is the situation out of which so much of the theoretical writing on counter-cartography has arisen, and so I choose to continue using that language here. Chapter 3 looks at the interaction between a cartographer or group of cartographers (as "experts") working alongside a group of other people who are not involved in map-making themselves but nevertheless have a stake in the maps and what they depict. Drawing on literature from Participatory Research, I choose to label the parties in this relationship using the terms "cartographer," "GIS practitioner" or "researcher" on the one hand and "community member" or "layperson" on the other, and to call the approach I explore for "community mapping."

My intent in the last two chapters is not to argue for a strict line of division in which all alternative cartographies are either "community mapping" or "counter-cartography," nor to claim that one set of tools is better than or broader than another. It is simply that, in my own personal experience as an activist and map-maker, I have found that different situations bring different sets of questions (and different bodies of theory) to the foreground. In a project where I'm working as an individual in partnership with an existing neighborhood organization to make a set of maps supporting their work, I find myself thinking a lot about how to dismantle the hierarchies of power between myself as a

GIS user and map-maker and "community members." How can I present census data about historical racial trends to a community group without in so doing making implicit claims that the data I'm presenting is "more correct" than what community members know from their own experience? How, on the other hand, can I make maps which will be relevant and useful to folks who have a different set of experiences and knowledge than I do? These questions are focused on the relationship between a map-making process and its "outside." They lead me to the literature on community-based participatory research, indigenous cartography, activist anthropology, feminist GIS and public participation GIS.

On the other hand, when a group of five or ten people is coming together to all work collectively on a map, questions about internal process, group structure, subjectivity and affect become more immediate. If we move away from the strict labor divisions and hierarchical workflow of much traditional cartography, how do we organize the vast work of making a complex yet beautiful map? How can a group of people use the physical process of map design to analyze commonalities in their experiences and build solidarity? What sorts of alternatives are there to the representational, technicist aesthetic which has dominated 20th century cartography in the West? How can the maps we produce and our process of disseminating them remain open to new collaborators at every stage? These questions focus more on the internal map-making process, and they lead me to a set of theories drawing from militant research, the philosophy of Deleuze and Guattari, and migrant and precarious worker's movements.

Many of the alternative cartographic practices discussed in this thesis come out of seven years of my own work as a cartographer, alone and as a part of 3Cs: the Counter-Cartographies Collective. I hope here, by beginning to catalog and investigate some of our collective cartographic experiments, to inspire other scholars and activists to take up map-making and counter-cartography as a technique in their own work. In the words of Denis Wood, "cartography is dead. Long live map-making!"

Chapter 1: Maps, states and counter-cartographies

As Jeremy Crampton and John Krygier argue, critical and counter-cartography is a "one-two punch – a pervasive set of imaginative mapping practices and a critique highlighting the politics of mapping."[1] Counter-cartography encompasses both a critique of how maps work (which points towards the possibility of *other* maps), and proposals for new forms of research, collaboration and organization (which enable mapping *otherwise*). In this chapter I focus on both parts of the "one-two punch." First: how do maps work? In answering that question, I outline some of the main threads of critical thought on cartography. In so doing, I lay a ground for the discussions of alternative cartographic practice which form the rest of this work. Second: what "imaginative mapping practices" has this critique inspired? I give three examples of alternative cartographies grounded in the theory of critical cartography.

The question: "How do maps work?" can be answered in two ways. One is grounded in studies of psychology and perception which consider how it is that an individual map-reader connects arrangements of ink on a page or a screen with roads, mountain ranges, cities, demographic statistics, or national boundaries; and how and

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1   Crampton, Jeremy W. *Mapping: a Critical Introduction to Cartography and GIS*. (Chichester, U.K.; Malden, MA: Wiley-Blackwell, 2010), 2.

whether humans and other animals build mental maps of their surroundings as part of the process of way-finding.

Here, I concern myself with a second way of answering the question. As Denis Wood playfully points out in *Rethinking Maps*, work (to a physicist) is defined as the application of force over distance. "How maps work" is thus a question not about what goes on inside the brains of individual map authors and map-readers, but about power and the role of maps in society.[2] Along with many others, I take this as an empirical question. There can be no doubt that maps do work. In many cases they quite literally facilitate the application of force over distance. The question is not whether or not maps work, but "how they act, in what context, and what are their effects?"[3]

Critical cartography

Post-war roots of critical cartography

The fact that maps work became strikingly clear in the post-World War II context as mapping technologies facilitated (and continue today to facilitate) the ability of the United States to deploy terrifying destructive force over great distance. The second World War prompted academics to begin grappling with the question of maps and power in earnest. In his landmark 1942 paper "Map-Makers are Human: Comments on the

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2   Wood, Denis, John Fels, and John Krygier. *Rethinking the Power of Maps*. (New York: Guilford Press, 2010), 1-2.

3   Pickles, John. *A History of Spaces: Cartographic Reason, Mapping, and the Geo-coded World*. (London; New York: Routledge, 2004), 12.

Subjective in Maps," J.K. Wright argues that "maps are indispensable instruments of war," because of their role in deciding military strategy but *also* because of the way that "maps help to form public opinion and build public morale."[4] Wright is one in a line of academic cartographers who hold to a notion of scientific objectivity and authenticity in explaining the power of maps. Each and every map is "a reflection partly of objective realities and partly of subjective elements."[5] For Wright there is no question that maps work insofar as they accurately reflect objective realities. However, there is also a "more subtle and dangerous" power in the subjectivity of conscious or unconscious decisions made by the mapmaker.[6] Map makers (and map readers) can be judged on the basis of their judgment and scientific integrity, and their maps work accordingly for good or ill. Wright's notion of the map is pinned to his hopes for a post-war future in which scientific objectivity and neutrality, not propagandist subjectivity, rule the day.

Wright's work is an honest and thoughtful attempt to understand the power of maps to persuade, cajole and ultimately produce geographical fact. His analysis is rooted in a representational understanding of cartography, in which maps are reflections or representations of the surface of the earth, both terms in that relation (map and earth's surface) are ontologically secure, and the goal of cartography as a science and as a

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4   Wright, John K. "Map Makers Are Human: Comments on the Subjective in Maps." *Geographical Review* 32, no. 4 (October 1, 1942): 8.

5   Ibid.

6   Ibid., 12.

profession is to discover ways to more accurately and neutrally depict geographic fact. Diagrammatically, Wright takes maps as the thin line between two terms: terrain – map reader, while Barbara Petchenik and Arthur Robinson, exemplifying the model of map communication which took hold in the 1960s and 1970s,[7] focus on the map as a medium of communication, changing the terms to map author – map reader. In either case, however, the map itself is diagrammed as a neutral and objective linkage between two subjective terms. The representational framework thus restricts critique of maps to questions of questions of efficiency and accuracy, and aestheticizes the ideal map as weightless, minimalist, and value-free.

J.B. Harley, Maps and Critical Theory

In the 1980s, responding to developments in critical theory which turned attention to the materiality and discursive work of texts, map critics began to problematize the map form in itself. J.B. Harley, a map historian, wrote perhaps the first published papers which attempted to bring critical theory (specifically that of Michel Foucault and Jacques Derrida) to the study of maps. Prior to Harley, maps in the archive tended to be understood as historical records of geographic fact ("this was there," "this place was named this"). Harley's main innovation was to question the representational framework for cartography which had predominated in cartographic thinking, critical or otherwise. He argued that maps are better understood as texts, that they have an "apparent duplicity"

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7   Crampton, *Mapping: A Critical Introduction to Cartography and GIS,* 58.

which "lies at the heart of cartographic representation." Maps were not only made up of signs which needed to be 'decoded', but were themselves "metaphors or symbols of the world." Moreover, "rhetoric permeates all layers of the map ... each map argues its particular case."[8]

Harley argued for a methodology of reading maps "between the lines," and reading for silences on the map. He argued that "a hidden agenda has to be teased out from between the lines of the map"[9] and that analysis of maps should proceed through a search for silences. These silences might come from external controls imposed on cartographers (by the state, by wealthy patrons) or from internal "ideological filtering."[10] For example, seventeenth-century surveyors working for English land-holders often excluded native Irish cabins from their surveys of Ireland in order to please their English clients, in a more explicit filtering of what appeared on the map. From the internal or implicit side, Harley gives the example of John Rocque's *A Plan of the Cities of London and Westminster*, in which the cartographer "has produced an idealized view of the city which emphasizes the gracious rurality of the main squares but fails to convey urban squalor."[11] Rocque's view of the city does not explicitly censor urban slums; rather the image of rurality it conveys

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8 Harley, J. B. (John Brian), Center for American Places, and Paul Laxton. *The New Nature of Maps: Essays in the History of Cartography.* (Baltimore, Md.: Johns Hopkins University Press, 2001), 36.

9 Ibid., 45.

10 Ibid., 67.

11 Ibid., 69.

results from contemporary conventions of cartography in which they simply were not objects of mapping in the first place.

In proposing a critical methodology for reading maps as texts, Harley also understood maps as thoroughly rooted in and inseparable from their contexts. He suggested that map scholarship should proceed by analyzing three contexts: the context of the cartographer, the context of other maps, and the context of the map within society. As texts, and in contexts, maps were thus potential objects for critical theory. Harley's own critical work focused on maps in the 17th and 18th century British context and in particular the role of maps in the colonization of the Americas.

The implications of his work were much broader. Prior to Harley, map scholarship was largely bound to a representational ideal of maps as mirrors of reality. Maps could be more or less accurate reflections of 'the world', and the picture they offered could be more or less well-understood by map readers, but these contextual concerns were external to the map form itself, and studies in cartographic methodology were aimed at purging them as much as possible from the map-making process. There was a world of geographic knowledge 'out there' – one paper by Robinson and Petchenik included a diagram of this "milieu."[12] Maps were understood to work insofar as they accurately portrayed some subset of the milieu. Critics within the representational framework held that no map was able to perfectly represent 'reality', but they held on to the ideal of perfection all the same.

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12 Robinson, Arthur H., and Barbara Bartz Petchenik. "The Map as a Communication System." In *The Nature of Cartographic Communication*, edited by Leonard Guelke. (Toronto: B. V. Gutsell, 1977), 100.

Harley's work opened up the possibility of understanding that a 17th-century British map of North America which omitted Native settlements was, in fact, working quite well. He made it possible to begin to understand how maps, map readers, and the mapped territory were entangled in co-constitutive relationships; and that maps worked by *co-producing* the territory as mapped.

Denis Wood: maps and the state

Harley left open the question of how, if not representationally, maps worked. Writing at about the same time as Harley, Denis Wood offered a set of answers. Wood, based in Raleigh, North Carolina, published a series of papers through the 1980s examining maps and mapping from a critical perspective. He argued that maps worked by making a set of claims, or postings, of the form "*this* is *there*," and that the this'es and there's thus posted became linked to each other, and through the map, tied into systems of law, police regulation, property ownership, and so forth. One of Woods' core contributions was a methodology of reading maps which made it possible to unpack how even the most mundane-seeming map functioned as part of a system of myth. Wood drew on theories of semiotics to explain the relationships between signs and meaning on maps.

Woods' second contribution was to show how the map as a form is linked to the modern state. While contending that nearly all people share an innate mental capacity for mapping – they are able to draw a map *when the situation necessitates it,* Wood argues that the modern ubiquity of map-making (that is the printing, distribution, and legal and

administrative use of maps) is "an unusual function of specifiable social circumstances arising only within certain social structures."[13] Map-making fulfills a particular "discourse function" which becomes important only in specific kinds of societies at particular historical moments. One such moment is a roughly 500-year period starting in 15th or 16th century Europe, in which the administrative form of the modern nation-state takes birth and comes to prominence.

What are the circumstances which, starting in the 16th and 17th centuries, drove maps to such prominence for Western European states and their colonies? Wood argues that there are several factors which make map-making in the modern Western scientific tradition uniquely suited to the demands of the modern Western state. First, it was only in the 16th and 17th centuries that states came to have fixed and clear borders. In France, for example, about half of 16th-century maps showed no boundaries at all, while by the 17th century maps displayed in detail the divisions between new military units of government (with fixed borders) that replaced feudal arrangements. In the 20th century, political maps of the world showed the entire land surface of the earth as divided into distinct and fixed administrative units, naturalizing modern Western notions of territoriality and borders. In the late 20th-century indigenous peoples in Australia and the Americas began to

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13 Wood, Denis. "The Fine Line Between Mapping and Map Making." *Cartographica: The International Journal for Geographic Information and Geovisualization* 30, no. 4 (October 1, 1993): 50.

contest this notion of state territory, in many cases framing their contestation through maps.[14]

Second, as a form of graphic art, the mapped shape of nation-state boundaries helped to solidify national identity. Benedict Anderson, discussing the role of maps in the development of Southeast Asian states, calls this the "map-as-logo." Imperial British maps of the region marked British colonial regions with red dye, French areas purple-blue, Dutch areas yellow-brown, and 'native' territory white. The aesthetic of these maps made individual colonies appear detachable from their surrounding, like pieces of a jigsaw puzzle. Soon each separate colony, as a "puzzle piece," could be "wholly detached from its geographic context."[15] Detached from neighboring countries, in jigsaw shape the map entered "an infinitely reproducible series, available for transfer to posters, official seals, letterheads, magazine and textbook covers, tablecloths and hotel walls," which then, in Southeast Asia, formed "a powerful emblem for the anti-colonial nationalisms being born."[16] In some cases, the strength of feeling produced by the map-as-logo allowed geographical weirdnesses hatched in the map-drawing imaginations of European imperialists to continue into nationalist movements. For example, a Dutch claim for West New Guinea (defined entirely in terms of the map as all the area lying west of longitude

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14 Wood, *Rethinking the Power of Maps*, 27-30.

15 Anderson, Benedict R. O'G. (Benedict Richard O'Gorman). *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Rev. and extended ed., 2nd ed. (London; New York: Verso, 1991), 175.

16 Ibid.

140 W) brought the detached shape of the left-hand side of the island into the map-logo for Indonesia, causing Indonesian nationalists to fight bitterly for control of the region, despite the fact that "no nationalists ever saw New Guinea with their own eyes until the 1960s."[17]

Third, the aesthetic of Western scientific cartography allowed states to present themselves as if they had always existed in their current form. By placing historically important sacred sites and monuments on their own maps, imperial states presented themselves as part of an unbroken chain of state-hood. By objectifying as static the current state of borders which were in fact often in a process of flux and had been the subject of much struggle and bloodshed, imperial maps in Southeast Asia (and, for example, maps of the growing United States of America) projected the current form of state boundaries backwards through history as if it had existed unchanging in perpetuity.

What Thongchai Winikachul calls the "geo-body" of the modern state (as a bordered, fixed entity) came into being alongside modern (Western) cartography. "Maps blossom in the springtime of the state" is how Denis Wood puts it,[18] although neither term in that relation determines the other. Maps of state borders, of property ownership, or of military movements coalesce in a complex and multi-directional interaction between aesthetic conventions (themselves linked with new developments in printing technology),

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17 Ibid., 176.

18 Wood, *Rethinking the Power of Maps*, 15.

scientific practice, law, military power, national identity, and so forth. This co-constitutive

relationship is precisely how they work.

If, as for Denis Wood, maps arise within specific situations, then what we know as

scientific cartography is only one particular and historically contingent way-of-seeing. My

re-telling of Wood's understanding of "how maps work" glossed over a significant

epistemological shift: from cartography as the science of accurately representing the

surface of the world on paper to *map-making* as a cultural practice like writing, painting

or dancing, of which modern Western scientific cartography is one particular instance.

For Wright, Robinson and Petchenik, and others, map-making as it is practiced within the

academy sits at the pinnacle of a two millenia-long linear history of progressively more-

accurate and less-biased graphic modes of representing the earth's surface. Wood's

assertion that "nothing behind the map guarantees it"[19] motivates acknowledging the

other part of Crampton's "one-two punch": a pluriverse of map-like and non-map-like

graphics, which arise in different contexts and work in different ways. Moreover, as John

Pickles reminds us, amongst these there is not a single dominant Western modernist

cartographic gaze, but rather multiple modernities, masculinities, capitalisms, and with

them multiple ways of seeing. What became institutionalized as academic cartography in

the mid-to-late 20th century was, as maps have always been, a *bricolage*, bearing the traces

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19 Wood, "Fine Line Between Mapping and Map Making," 53.

of "past mapping practices, local systems of representation and internally contradictory forms."[20]

Contingent, contradictory, and complex though it is, it is crucial to acknowledge the lasting dominance of the formation I call Western state cartography. The focus of this work is not a detailed account of the role of maps in the history of the modern nation-state, or of the peculiarities of mapping practice as it developed in Western Europe as opposed to elsewhere. Because "Western state cartography" is a term that I refer back to throughout this work, however, I here summarize a few of the characteristics of that particular formation of map-making theory and practice.[21] As I use the term, "Western state cartography" refers to some or all of the following:

- A **technical and representational aesthetic**, in which lines on the page are presented as if they corresponded directly with lines on the ground. This aesthetic is backed up by a network of representational practices which continually re-inscribes the "facticity" of Western state maps.[22]

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20 Pickles, *History of Spaces*, 88.

21 Here I build on Margaret Pearce's definition of "Western cartography" as "an assemblage of ideas about representation and reality encompassing an 'all seeing' perspective, a fixed scale, and mathematical projection from sphere to developable surface." Pearce, Margaret Wickens. "Framing the Days: Place and Narrative in Cartography." *Cartography and Geographic Information Science* 35, no. 1 (January 21, 2008): 18.

22 Sometimes with absurd results. For example, Roger Kain and Elizabeth Baigent describe the use of "paper surveys" in 1840s Australia, in which land was divided into parcels and roads planned before the land itself was physically surveyed. This practice resulted in roads which an anonymous satirist described in verse as "nicely planned on paper \ and ruled without remorse \ over cliffs, and spurs and gullies, \ with a straight and even course \ Which precluded locomotion \ on part of man or horse." Kain, R. J. P. (Roger J. P.), and Elizabeth Baigent. *The Cadastral Map in the Service of the State: a History of Property Mapping.* (Chicago: University of Chicago Press, 1992), 320.

- Maps which **purport to be objective, value-free, and/or "expert"** and in so doing often claim to supersede the experiences and knowledges marginalized communities.

- A **state-ist and capitalist viewpoint**, such that national and sub-national boundaries and private land ownership are taken as the primary categories for organization of mapped land areas.[23]

- A disembodied, masculinist **"view from above"** made possible through the apparatus of modern techno-science but which hides the bodies, machines, and labor which makes that viewpoint possible.**[24]**

- An understanding of cartography as both an **empirical science and a technical craft profession** whose aim is ever-increasing levels of accuracy in representing the surface of the earth and clarity in communicating geographic fact to map-readers.[25]

In this chapter, and throughout the thesis, I employ a useful simplification: that an entrenched form of state cartography dominates land and people, and counter-

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23 For more on the relationship between maps and the state, see Wood [2010], 15-38. Kain and Baigent give a detailed history of the co-evolution of modern Western mapping practice and the private ownership of land.

24 This particular aspect of cartography has been thoroughly discussed over the years. Haraway's 1988 *Situated Knowledges* is a foundational text, but see also the early debates around GIS, summarized in Crampton, *Mapping: A Critical Introduction to Cartography and GIS,* 98-111. Pickles' *History of Spaces* gives a detailed lineage of this "cartographic gaze," 75-91.

25 On the professionalization of cartography in the 20th century, see Wood's "Fine Line between Mapping and Map-making."

cartographic practices attempt to make new relationships between spaces, maps and communities. As John Pickles argues, Western state cartography is certainly "far less fettered than we have perhaps acknowledged."[26] A full account of the complexity of the development of cartographic practices (mainstream or otherwise) over the past two-hundred years is far beyond the scope of this work. My purpose here is to situate and describe a few examples of alternative cartographic practice, in hopes that they can be useful in inspiring future work. In naming certain practices as "Western state cartography" and others as "counter-cartography," I'm strategically choosing to simplify matters in order to highlight the very trauma marginalized communities have experienced at the hands of map-wielding states. I'm also following a methodological commitment to engage with the stories that practitioners tell about their own work.

Three alternative cartographies

Critically analyzing the ways in which particular maps do work in the world is one part of Crampton's "one-two punch." The other, rooted in an understanding of the symbiotic relationship between cartography and the modern imperial state, is a practice which attempts to make particular maps which work *otherwise*. Over the past several centuries, the political consequences of what Pickles calls "the cartographic gaze" have almost always been the extension and defense of capitalism, imperialism, private property and real estate development, and the state. It stands to reason that the most inspiring

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26 Pickles, *History of Spaces*, 194.

examples of counter-cartographic practice stem from First Peoples movements, autonomist labor organizing, queer and feminist movements, and neighborhood organizing.

The remainder of this chapter explores three alternative cartographies, which are illustrative of some of the ways maps can work *otherwise*. Each of the three examples moves beyond the boundaries of Western state cartography. Each example demonstrates a different response to a particular configuration of the relationship between maps and power. The Detroit Geographical Expedition, for example, is situated in the context of a Fordist organization of space where distinct geographical neighborhoods (as well as workplaces) become the foundation for organizing. *Precarias a la Deriva* (Precarious Women Adrift), forty years later, use map-making to find a common territory for organizing in the context of the *dissolution* of the same Fordist geographic fixity and boundedness of home and workplace. 3Cs: the Counter-cartographies Collective stands in between these two approaches in this respect, mapping a fixed territory (the university) in order to elaborate commonalities between a heterogeneous set of movements and participants. Taken together, these three examples demonstrate how counter-cartographic approaches vary depending on context and situation. They also give an initial illustration of projects within the two main contexts which I examine in more detail in the second and third chapters. Bill Bunge's Detroit Geographical Expedition can be thought of as an example of community mapping (Chapter 3), in which maps are used to build power and

accomplish political goals in a pre-existing community – in this case the neighborhood of

Fitzgerald. Precarias a la Deriva and 3Cs are different instances of the use of counter-

cartography (Chapter 2) to build new political and social formations through a collective

process of external and internal orientation.

The Detroit Geographical Expedition

In the post-War 1950s and 60s, graduate students at a a small but influential set of

graduate geography programs within the United States sparked what's now known as the

"quantitative revolution" in human geography. Adopting statistical methods such as

regression and correlation, the "space cadets" pushed forward a notion of geography as a

body of universal spatial theory, modeled largely after Newtonian physics. This methods

of the space cadets were deeply mathematical, but as Peter Gould explains "it was not the

numbers themselves that were important, but a whole new way of looking at things

geographic."[27] In the "mangle"[28] of Cold War military-academic interaction, these ways of

seeing, along with techniques for remote sensing, data storage and visualization later

would blossom into the cartographic gaze known as GIS. The history of cartography has

always, however, been full of "contradictory moments," of lines of flight and possibilities

27 Gould, Peter, and Forrest Ralph Pitts. *Geographical Voices: Fourteen Autobiographical Essays.* 1st ed. (Syracuse, N.Y.: Syracuse University Press, 2002), 140.

28 Barnes, Trevor J., and Matthew Farish. "Between Regions: Science, Militarism, and American Geography from World War to Cold War." *Annals of the Association of American Geographers* 96, no. 4 (2006): 807–826.

for mapping-otherwise.[29] The work of Bill Bunge and the Detroit Geographical Expedition is one such offshoot, one example of what a GIS rooted in neighborhood organizing and popular education, rather than Cold War military funding might resemble.

Bill Bunge's 1962 *Theoretical Geography* was a landmark text in the quantitative revolution. The year of its publication, Bunge took up a position at Wayne State University in Detroit, and six years later he and Gwendolyn Warren founded the Detroit Geographical Expedition. The Expedition (envisioned as the founding project of a new Society for Human Exploration), was an extraordinarily multifaceted project; unfortunately a large part of its published work is out-of-print and resides in mimeographs in the file cabinets of a few scholars who were active at the time and prescient enough to keep them. One way to introduce the project is to cite a few paragraphs from an early report made about it to the Association of American Geographers, describing its work using statistical analysis to fight racism in school redistricting plans:

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29 Pickles, *History of Spaces*, 194.

In 1968, under the guidance of Bill Bunge, a group of ghetto residents began to explore and map the geography of the city. They combined geographic concepts and methods with personal hypotheses and definitions of problems. The result was a series of innovative studies of health hazards, income flows, traffic flows, death rates, and other variables of concern to the students. Faculty from the University of Michigan geography department participated; college credit was arranged. ... The educational enterprise appears to have become a kind of experimental community college, in which geography is one component.[30]

The Expedition's major published work is a 250-page, hardcover atlas of Fitzgerald, a community (at the time) of 4,240 families in Detroit. *Fitzgerald: Geography of a Revolution* weaves oral histories, archival photographs and interviews with current residents together with maps and mathematical models. As described in its preface "the book is science: its data are maps, graphics photographs and the words of people. But the book also makes a value judgment – the desirability of human survival – and thus transforms itself into a steel-hard hammer of humanism."[31]

"Direction of Money Transfers in Metropolitan Detroit" (Figure 1) is one map from the Fitzgerald atlas which exemplifies the imaginative mapping practices of Crampton's "one-two punch." On the one hand the map is thoroughly rooted in the mathematics of the quantitative revolution. Its aesthetic is generally technical, with iso-lines and upper-case sans serif lettering; the lower-right corner even holds a three-dimensional graph of a spatial model for land rent (likely developed by Bunge) which uses

30 Ad Hoc Committee on Relations with the Detroit Geographical Expedition, 1-3. Cited in Wood, *Rethinking the Power of Maps*, 166.

31 Bunge, William. *Fitzgerald; Geography of a Revolution*. (Cambridge, Mass., Schenkman Pub. Co.; distributed by General Learning Press, Morristown, N.J., 1971), preface.

population density, maintenance costs, and commuter transportation costs to locate the

highest rate of rental profit per square mile (and hence the highest land rent) at the center

of Detroit. The map, however, appropriates the technical aesthetic of post-War

quantitative geography and uses it to picture *as geographic fact* narratives from the lived

daily experience of slum residents – job discrimination, police payoffs, insurance fraud

committed by white landowners, slow bus transportation, and so forth. It asks readers to

invert conventional perceptions of land value and wealth to argue that "paradoxically ...

the wealthy cannot afford to live in the slums. They cannot afford the rent, for although as

individuals they pay much higher rent, per acre of land they pay much lower."[32]

Geographically, the map links money to the slums and slum residents, and thus throws

into question the distribution of wealth with which Fitzgerald residents are faced.

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32 Ibid., 132.
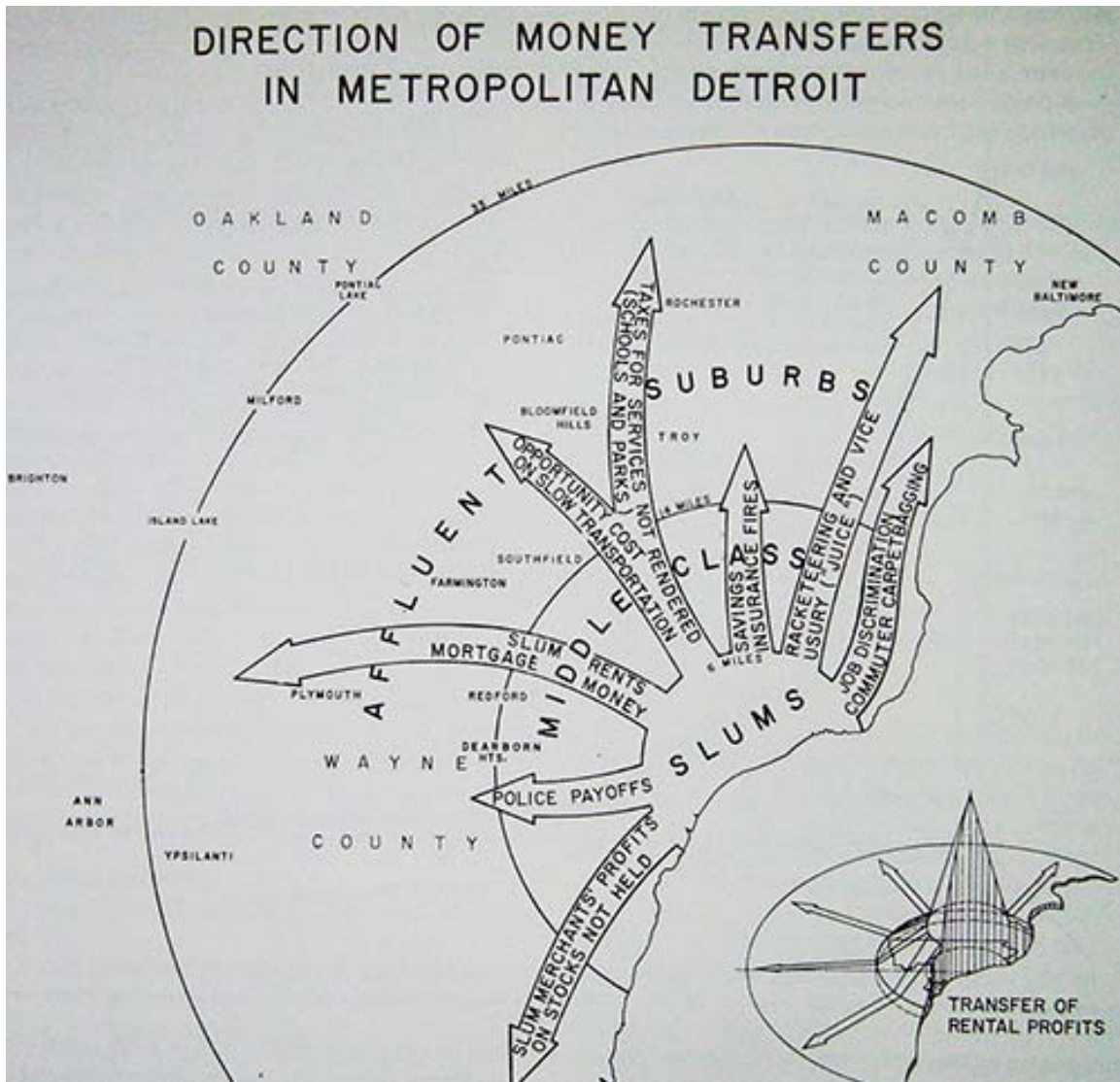
Figure 1: "Direction of Money Transfers in Metropolitan Detroit." Fitzgerald: Geography of a Revolution, *134.*

Folded inside the front cover of the atlas is a completely different map. "Fitzgerald District: Farm Era 1900 - 1925" (Figure 2) measures 16 by 22 inches at a scale of one inch to 400 feet. In neat hand-lettering, historical cartographer George Shankar has compiled 25 years of local history, from the seemingly mundane ("Johann Engel never went to market; raised cattle and sold milk") to the more significant ("Thousands of Klan

marched North on Livernois in early 1920's"). A page of accompanying text describes the

data-gathering process and how "cross-correlation" was used in "verifying specific

geographic features of the historic landscape."[33] Similar to "Direction of Money Transfers,"

this map thus uses the language and methods of scientific geography to picture

community narratives as fact. What makes it worth separate mention, though, is the way

that Shankar's design for the map employs typographic conventions to redefine the realm

of "geographic features." Small italic characters with normal letter-spacing but exaggerated

word-spacing, for example, are used for classic geographic categorizations of land-cover

("brush and weeds," or "cleared pasture"), but also for "squirrel hunting" grounds, areas of

"plain old brush," and specific garden crops ("potatoes, corn … no berries"). Shankar's map

is a thoroughly scientific presentation which nevertheless rings with the echoes of

individual memories and community stories. It would have been possible to erase those

voices in the data-gathering process and still produce a map of garden crops, historical

property ownership and land-cover One of the distinguishing features of this map is its

polyvocality and flat epistemology which brings multiple knowledges into conversation

with each other while privileging none of them.

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33 Ibid., 247.
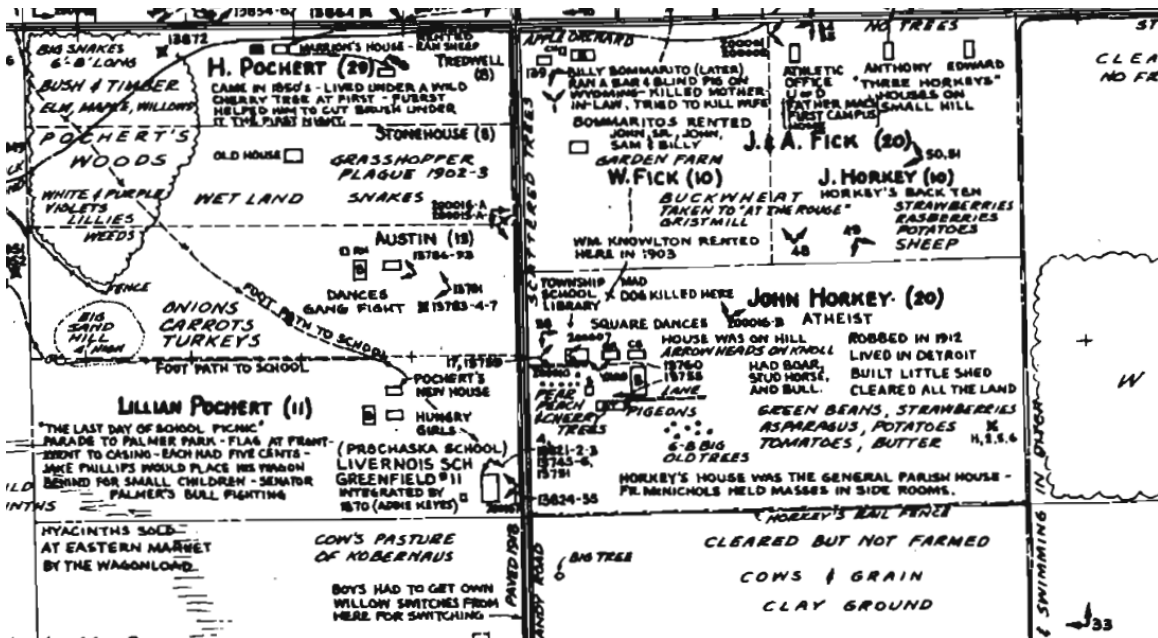
Figure 2: Detail from "Fitzgerald District: Farm Era 1900 – 1925." Fitzgerald: Geography of a Revolution*, inside front cover.*

The Detroit Geographical Expedition operated in a single neighborhood – Fitzgerald, a bounded, contiguous area of land. The maps build on an understanding of territory and place which, as Denis Wood points out, is peculiarly modern. This way of understanding place slips and slides along lines of equivalence between Fitzgerald as a location of stories and histories, Fitzgerald as a geographic neighborhood (that you can walk around), and Fitzgerald as the region bounded by a line drawn on a piece of paper. Modern cartography is built on an equivalence between place, space and map, which the Fitzgerald project ascribes to. Indeed, part of the work of neighborhood organizing projects, like the Expedition, is making those lines of equivalence concrete – moving from block-level canvassing maps (lines on paper) to walking the neighborhood and knocking

on doors to building one-on-one relationships and larger organizations. The Expedition

was thus productive of (and produced with) a conception of the neighborhood of

Fitzgerald which links space, place and map.

Precarias a la Deriva

At other times and in other places, these lines of equivalence are produced

differently. In Western Europe and the United States, neoliberalism, precarity and a post-

Fordist economic regime have brought with them the dissolution of the factory and the

neighborhood as the key sites of production and reproduction, respectively. With them

the lines of equivalence of modern cartography have also begun to dissolve. *Precarias a la*

Deriva (precarious women adrift or drifting) is a feminist militant research collective,

based in Madrid, which investigates and attempts to intervene in the spatiality of post-

Fordism. Most of the Precarias aren't cartographers in a traditional sense. However, even

though it's not centered on the drawing of lines on paper, their project is explicitly one of

mapping – "producing a cartography of the precarized work of women based on the

exchange of experiences."[34] I'm including their work here because of the way that their

research, writing and organizing assume the dissolution of lines of equivalence between

map and territory and attempt to weave new ones.

One part of Precarias' militant research takes the form of drifts or *derivas*.

Precarias' use of the drift is inspired by the Situationist *dérive* of the 1960s. Members of

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34 Precarias a la Deriva. "First Stutterings of Precarias," 2002.

the Situationist International, an conglomeration of artists and activists in Paris,

developed the dérive as a tool for investigating the psychogeography of cities. Small

groups would take an entire day to wander through Paris without specific itinerary, letting

themselves be drawn by the city itself. Guy Debord and Asger Jorn published two maps as

a result of their dérives, the *Guide Psychogéographique de Paris: Discours sur les passion de*

l'amour and *The Naked City.* [35]

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35 Wood, *Rethinking the Power of Maps*, 173-174.

Debord and the situationists saw the *dérive* as a precise tool for "the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals."[36] For Precarias a la Deriva, the drift is a method of observation also, but more than that a tool for producing new emotions and new behaviors, through the drawing of lines of connection between disparate geographical sites and subjects. They write:

> Our situations are so diverse, so partial, that it is very difficult to find common denominators from which to elaborate alliances and irreducible differences with which to mutually enrich ourselves. ... We need to communicate the lacks and the excesses of our working and living situations in order to escape from the neoliberal fragmentation which separates and debilitates us, turning us into victims of fear, of exploitation or of the individualism of 'each one for herself.
>
> ... When proposing the 'drifts' we particularly emphasized not only passing through the past and present workplaces of our guides but also the possibility of linking the spaces and, once on the road, to see what would come up. Thus we ended up including in our routes streets, houses, businesses, public transportation, supermarkets, bars, shops, union offices, health centers, etc. We opted for the method of the drift as a form of articulating this diffuse network of situations and experiences, producing a subjective cartography of the metropolis through our daily routes.[37]

As a project, Precarias a la Deriva first public action took place on June 20, 2002. UGT and CCOO, the two major Spanish trade unions had called a general strike (the first in eight years) in protest of changes to the structure of government unemployment

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36 Wood, Denis. "Lynch Debord: About Two Psychogeographies." *Cartographica: The International Journal for Geographic Information and Geovisualization* 45, no. 3 (2010): 186.

37 Precarias a la Deriva, "First Stutterings."

benefits. The members of Precarias, women mostly working as temporary, contract or flexible workers, gathered to question what involvement in a general strike meant for workers in their situation and sectors, where production was organized "in such a way that to stop working for a few hours (or even twenty-four) does not necessarily effect the production process, and when our contract situation is so fragile that striking today means risking the possibility of working tomorrow."[38] In addition to their own inability to strike in the traditional sense, the Precarias were frustrated by the fact that traditional trade unions were not taking up issues relevant to precarious or immaterial workers (particularly women and migrants), and by their own lack of theoretical vocabulary or organizational models to articulate political demands. On the day of the strike itself, members of Precarias took the call for a strike as an opportunity to organize their own "survey-picket." They traveled the streets with tape recorders, cameras and notepads in order to "open a space of exchange between some of the women who were working or consuming during that day and with those who were moving in the streets."[39]

The chance encounters of that initial one-time "survey-picket" developed into the methodology of drifting. The members of Precarias drifted along with women (some members of the group, some not) who worked in what they identified as the "paradigmatic feminized sectors of precarious work." The subject of each drift led group members through a selection of their everyday places (workplaces, home, supermarkets,

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38 Ibid.

39 Ibid.

parks, yoga classes). In these sites, and in transit between them, group members engaged in dialogue and data-gathering with the aim of building points of common language around their diverse individual experiences of precarious work. It's important to remember here, that precariousness is not an objective characteristic under which diverse women's experiences of labor could be brought under equivalence. Rather, the drifts drew lines of connection (not equivalence) between group members, and in doing so Precarias attempted to produce a common language and subjectivity, as *precarias*, which would weave across geographical, temporal and cultural divisions.

The Precarias didn't drift in order to discover a pre-existing commonality across their everyday trajectories, nor to produce a representation which would accurately reflect the diversity of their lived experiences. Rather, they drifted in order to build, both in text and in daily practice a common ground of subjectivity, and ultimately to transform their everyday spaces. Participating in the drift opened up a space for women to question their everyday spaces along a number of axes, and ultimately made possible new kinds of solidarity, as what had been individual encounters with bordering institutions, capitalist logics, exhaustion, etc. became (for at least the short time of the drift) a collective investigation. Once opened, those spaces became forever transformed. "There is no going back; once you get home from a drift your head keeps buzzing until the next one."[40]

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40 Ibid.

In producing new spaces through mapping them, the cartography of Precarias a la Deriva is doing just what critical analyses of cartography have held that maps always do. I want to stress here, though, that the Precarias project is explicitly intended as non-representational. "It does not aspire to 'reproduce' or approach daily experience … but rather to produce simultaneous movements of approaching and distancing, visualizing and defamiliarizing, transit and narration," with full cognizance of the *productivity* of mapping, walking, photographing, interviewing, and late-night bar conversations. This impulse – acknowledging the inability of maps to objectively represent anything at all, and mapping precisely because of that – is at the heart of counter-cartography.

3Cs: the Counter-Cartographies Collective

The Detroit Geographical Expedition mapped multiple aspects of a fixed territory (the neighborhood of Fitzgerald), while Precarias use mapping to build a common territory. 3Cs: the Counter-Cartographies Collective (3Cs) is, in a sense, a hybrid project: mapping multiple perspectives of a fixed territory in order to elaborate common struggles. 3Cs originated in 2005 at the intersection of several reading group and working groups at the University of North Carolina at Chapel Hill (UNC). As graduate students, undergraduates (including myself) and faculty members reading about social movements and alternative economies, the initial members of 3Cs shared a frustration with a divide between activism and academia which located real political work "out there" (outside the university) and discouraged critical scholarship about the university itself. This frustration

was matched with excitement at learning about some of the counter-cartographies arising within social movements in Europe.[41]

Framing their inquiries around the Precarias' "what is our strike?" 3Cs members combined research into the economic functioning of the university with activism. The first public 3Cs activity was a "stationary drift," inspired by the drifting technique of Precarias a la Deriva. On Labor Day, 2005, the UNC administration had declared that classes should continue as normal while administrative staff had a holiday. The administration's actions suggested that faculty, graduate student teaching assistants, and lecturers were not truly "laboring," and brought to the forefront for 3Cs the question of what types of labor were taking place on the university campus, what sorts of value was being produced, and who was reaping the surplus. In a first attempt at investigating this question, and taking advantage of the Labor Day holiday spirit, members of the collective stationed themselves at one of the most-traveled parts of their campus and asked passersby "What's your labor like, today and everyday?"[42]

The organizing energy and research questions generated from this initial research-action led 3Cs to initiate a larger-scale project to produce a "disorientation map" to their

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41 Including Precarias a la Deriva, as well as Hackitectura (in the next chapter), and Bureau d'Etudes. Bureau d'Etudes uses cartography as a tool for researching the structure of global legal, economic and political actors. They produce richly detailed (and sometimes overwhelming) maps, and use them in workshops with counter-globalization movements. See Cobarrubias, Sebastian. "Geographies by the Multitude." AAG Annual Meetings. Denver, Colorado, 2005.

42 Cobarrubias, Sebastian, and Maribel Casas-Cortes. "Drifting Through the Knowledge Machine." In *Constituent Imagination: Militant Investigations, Collective Theorization*, edited by Stevphen Shukaitis and David Graeber, (AK Press, 2007), 110.

university. *disOrientations*, the final outcome of that project, is a large-format printed map which examines UNC from multiple perspectives (Figure 3). One side of the page is a map collage organized around three major themes: a Marxian analysis of economic value in the university, especially through its role in corporate research ("UNC is a factory"); an examination of the ways in which UNC is materially embodied and has concrete impacts on the environment ("UNC is a functioning body"); and an exploration of how coursework and study abroad opportunities help to produce students as geographic subjects with a particular worldview ("UNC is producing your world").[43] The other side lists local businesses, nonprofits and social movements while also delving into an analysis of the racialized and gendered divisions of labor on campus.

Figure 3: Front page of disOrientations. *3Cs, 2006.*

narratives (perhaps each corresponding to a particular issue or identity-based student organization) and present evidence to support those narratives. Reading many of these publications, we were inspired by their level of factual detail and the ways they integrated the perspectives of many multiple issues and identities. However, we also found ourselves frustrated by an overwhelming preponderance of text, which for the most part stated facts rather than opening questions.[44]

From the beginning of the *disOrientations* project, 3Cs members made a commitment to experiment with something different – a way of making maps which would, at every turn, undermine their own ability to tell a consistent and objective story. Our attempt in *disOrientations* was to make a map which said, through a proliferating multiplicity of competing voices: the university *is* an ivory tower, and it is also a factory, and it is also a hotel, and it is also a workplace, and it is also producing your world, and, and, and. Both in our research process and in the design of the printed map, we attempted to move beyond the linear, oppositional narrative of many such activist publications and instead open up a multiplicity of questions and possibilities for organizing. Rather than having a strict visual hierarchy in which each element reinforces a central message,

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44 One notable exception (and it's a map!) *Cultures of Technology at Bowling Green State University*, was produced by a feminist collective calling itself subRosa. The map asks "What do university students, knowledge workers, factory farmers and migrant workers have in common? How is a university like a factory farm? What is Biopower? Why should you give a moo about poo?" and, like *disOrientations*, presents a multiplicity of potential connections between what takes place on-campus at Bowling Green and resistance movements. Unlike *disOrientations*, however, the Bowling Green map focuses specifically on one analytical lens – that of biopower. subRosa collective. "Mapping Project: Cultures of Technology Connections," 2002.

disOrientations is "anti-hierarchical," reproducing "the methodology and multiple voices of the collective."[45]

Further, like Precarias a la Deriva and the Detroit Geographical Expedition, the Counter-Cartographies Collective views our work as combining geographical investigations and knowledge-production with struggling for political change and producing alternative ways of life. 3Cs calls this "autonomous cartography," arguing that it illustrates "how mapping can function as a form of militant research, producing new knowledges and subjectivities, while also investigating and instigating political change … this means not only producing new maps, but also creating new forms of social organization within and beyond the collective."[46] 3Cs Labor Day drift was one example of this combination. As a researchers, we were gathering data about labor on campus. But by asking participants to question their own definitions of work and in some cases re-consider themselves *as* workers, our research questions also contributed to a critical discussion of working conditions on campus and the possibilities for solidarity between students, faculty, janitorial staff, cafeteria workers and administrators. This combination of research and action made it hard for passersby to situate the drift. We were asked "is this a protest or a research project?" Like the Precarias' drifts, it was both.

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45 Lize Mogel. "Disorientation Guides: Cartography as Artistic Medium." In *Geohumanities: Art, History, Text at the Edge of Place*, edited by Michael Dear, Jim Ketchum, Sarah Luria, and Douglas Richardson, 187–195. (Routledge, 2011), 190.

46 Dalton and Mason-Deese, "Counter (Mapping) Actions," 16.

Later 3Cs work has continued using the process of map-making as a way to create new forms of social organization. In the next chapter I explore some of the ways in which map-making, in particular, can facilitate the creation of new collectivities and movements. For 3Cs, this creation has taken place both within the collective and outside. Working collectively on large map projects and public events has built solidarity amongst collective members, and has helped us incorporate each others stories into a shared narrative of struggle within and against the university system. This has been particularly important over the years as new members with their own histories of experience within the university system become integrated into the collective. Each successive mapping project thus brings its own analytical lens, informed by the experiences of the collective members at that time. Moreover, through personal encounters over the years, the counter-cartographies of 3Cs have cross-pollinated with those of Precarias a la Deriva and other groups mentioned in the next chapter.[47]

Summary

Exploding the representational framework of early (and continuing mainstream) cartographic thought, and incorporating the critical insights of J.B. Harley, Denis Wood and others, I've told a story about the relationship between maps, spaces and power. I've argued that a particular formation known as Western state cartography became entrenched over the past two or three centuries, and explored the links between that

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47 Ibid., 14-15.

formation and the modern nation-state. I then gave three examples of work which

attempts to move beyond this formation. The Detroit Geographical Expedition used the

language and aesthetic of scientific geography in order to lift up marginalized voices from

one particular neighborhood. In so doing it is an early example of community mapping,

and in particular of the combination of Participatory Research with GIS and cartography

which I discuss in Chapter 3. Precarias a la Deriva and 3Cs: the Counter-Cartographies

Collective each use map-making as a way of "producing new knowledges and

subjectivities,"[48] in contexts where no pre-given identity is available to serve as a

foundation for organizing. For both of those groups, then, maps function as a way to "find

common denominators from which to elaborate alliances"[49] within a new collective. In

Chapter 2, I discuss this use of counter-cartography, exploring some of the particular ways

in which mapping can help the process of the formation of a collective subjectivity and

links of commonality and sociality.

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48 Ibid, 16.

49 Precarias a la Deriva, "First Stutterings."

References

3Cs: Counter-Cartographies Collective. "disOrientations: (y)our Guide to the University of North Carolina at Chapel Hill," 2006. http://www.countercartographies.org/disorientation-guide-mainmenu-31/.

Anderson, Benedict R. O'G. (Benedict Richard O'Gorman). *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Rev. and extended ed., 2nd ed. London; New York: Verso, 1991.

Barnes, Trevor J., and Matthew Farish. "Between Regions: Science, Militarism, and American Geography from World War to Cold War." *Annals of the Association of American Geographers* 96, no. 4 (2006): 807–826.

Bunge, William. *Fitzgerald; Geography of a Revolution*. Cambridge, Mass.: Schenkman Pub. Co.; distributed by General Learning Press, Morristown, N.J., 1971.

———. *Theoretical Geography.* Lund, Dept. of Geography, Royal University of Lund [1962]: Dept. of Geography, Royal University of Lund, 1962.

Cobarrubias, Sebastian, and Maribel Casas-Cortes. "Drifting Through the Knowledge Machine." In *Constituent Imagination: Militant Investigations, Collective Theorization*, edited by Stevphen Shukaitis and David Graeber, 108–122. AK Press, 2007.

Cobarrubias, Sebastian. "Geographies by the Multitude." Denver, Colorado, 2005. http://countercartographies.org/component/docman/doc_download/12-geographies-by-the-multitude-the-cartography-of-bureau-detudes.

Craig Dalton, Liz Mason-Deese, and Counter-Cartographies Collective. "Counter (Mapping) Actions: Mapping as Militant Research." *ACME: An International E-Journal for Critical Geographies* (forthcoming).

Crampton, Jeremy W. *Mapping: a Critical Introduction to Cartography and GIS.* Chichester, U.K.; Malden, MA: Wiley-Blackwell, 2010.

Crampton, Jeremy W., and John Krygier. "An Introduction to Critical Cartography." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 11–33.

Gould, Peter, and Forrest Ralph Pitts. *Geographical Voices: Fourteen Autobiographical Essays*. 1st ed. Syracuse, N.Y.: Syracuse University Press, 2002.

Harley, J. B., Center for American Places, and Paul Laxton. *The New Nature of Maps: Essays in the History of Cartography.* Baltimore, Md.: Johns Hopkins University Press, 2001.

Harris, Leila M., and Helen D. Hazen. "Power of Maps: (Counter) Mapping for Conservation." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 99–130.

Kain, R. J. P. (Roger J. P.), and Elizabeth Baigent. *The Cadastral Map in the Service of the State: a History of Property Mapping.* Chicago: University of Chicago Press, 1992.

Mogel, Lize. "Disorientation Guides: Cartography as Artistic Medium." In *Geohumanities: Art, History, Text at the Edge of Place*, edited by Michael Dear, Jim Ketchum, Sarah Luria, and Douglas Richardson, 187–195. Routledge, 2011.

Pearce, Margaret Wickens. "Framing the Days: Place and Narrative in Cartography." *Cartography and Geographic Information Science* 35, no. 1 (January 21, 2008): 17–32.

Pickles, John. *A History of Spaces: Cartographic Reason, Mapping, and the Geo-coded World.* London; New York: Routledge, 2004.

Precarias a la Deriva. "First Stutterings of Precarias," 2002. http://www.sindominio.net/karakola/antigua_casa/precarias/balbuceos-english.htm.

Robinson, Arthur H., and Barbara Bartz Petchenik. "The Map as a Communication System." In *The Nature of Cartographic Communication*, edited by Leonard Guelke. Toronto: B. V. Gutsell, 1977.

subRosa collective. "Mapping Project: Cultures of Technology Connections," 2002. http://www.cyberfeminism.net/biopower/bp_map.html.

Wood, Denis, John Fels, and John Krygier. *Rethinking the Power of Maps*. New York: Guilford Press, 2010.

Wood, Denis. "Lynch Debord: About Two Psychogeographies." *Cartographica: The International Journal for Geographic Information and Geovisualization* 45, no. 3 (2010): 185–189.

———. "Cartography Is Dead (Thank God!)." *Cartographic Perspectives* 45 (Spring 2003): 4–7.

———. "The Fine Line Between Mapping and Map-Making." *Cartographica: The International Journal for Geographic Information and Geovisualization* 30, no. 4 (October 1, 1993): 50–60.

Wright, John K. "Map Makers Are Human: Comments on the Subjective in Maps." *Geographical Review* 32, no. 4 (October 1, 1942): 527–544.

Chapter 2: Doing counter-cartography

In the last chapter, I introduced a set of critiques of Western state cartography. 'Western state maps are able to continually reproduce themselves as 'true' not because they are accurate or objective representations of the surface of the earth but because they sit inside networks of institutions, machines, inscriptions and bodies which work hard to maintain chains of representation linking maps, territories, bodies and spaces. Western maps present themselves as ahistorical and inevitable, when they are contingent and must be "re-made" in each encounter. They present themselves as disembodied and weightless, hiding the work done and blood shed in struggles over territorial boundaries and categories.

The next two chapters delve into the possibilities of mapping otherwise. Building on the examples from Chapter 1, I investigate how a critical understanding of Western state cartography becomes a critical *practice* of making maps in ways which heal rather than do violence, which build power for marginalized communities rather than silencing and erasing them, and which open a multitude of trajectories rather than making it seem that a singular future builds inevitably from a singular past. I use a set of experiments in counter-cartography to explore how maps can be otherwise. If not through a rigid logic of spatial representation, how else can marks on a page relate to institutions and territories?

How can maps be produced, other than a hierarchical map-making process which erases the bodies and machines behind the map? Moving away from thinking of maps as a medium of communication for geographic fact, how can the relationship between map-makers and map-readers be structured?

The answers to these questions are rooted in the context of each particular alternative cartography. The experiments in this thesis fit into two different contexts, roughly corresponding to the two sets of examples discussed above. In the first context, counter-cartography is the process by which a group in formation orients themselves, elaborating how they relate to each other (a plane of commonality) and charting a common course of action within that plane.[1] In the second context, map-making is used by an existing community or movement in order to build collective power or to accomplish specific political goals.

In this chapter, I investigate the possibilities of the first context. Understanding the power of maps, counter-cartography attempts to "do mapping differently," in order to "do power differently."[2] No counter-cartographic project is completely outside the hierarchical modes of power or representational logic of Western state cartography. The attempt to "do

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1 Buë Rubner-Hansen, one of the participants in Counter\Mapping Queen Mary University, relates this to Kant's idea of orientation. To Kant, orientation combines both an objective aspect (locating oneself within the world) with a subjective aspect (developing a concept of oneself as a being in the world). He argues that Western, scientific maps presuppose a particular subjectivity (Haraway's "view from above"), whereas one of the key components of counter-cartography is the collective development of subjectivity. Buë Rubner-Hansen, in discussion with Mara Ferreri and the author, January 2012.

2 This particular language, as well as many of the concepts in this chapter, come from keynote addresses given by me and other members of 3Cs in 2010 at the University Consortium on GIS summer conference and the North American Students of Cooperation annual Institute.

mapping differently" requires continual experimentation, and is highly dependent on context. Here I explore some ways in which counter-cartographic projects have managed to elaborate new commonalities and build nascent movements. Each section of the chapter starts from a particular aspect of a critique of Western state mapping and explores the alternative practices which it inspires and how those practices can contribute to a collective process of orientation. My explorations are centered around one particular experiment in counter-cartography, the Counter\Mapping Queen Mary University collaboration, which took place in the summer and fall of 2010.

Counter\Mapping Queen Mary University

In late 2009, a group of graduate students at Queen Mary University (QMU, part of the University College of London) began to dream about ways of taking action against their increasingly precarious situation as international students in the United Kingdom (UK) university system. British higher education had been completely free of charge for UK citizens as late as 1998, but Parliament used a UK budget shortage and the global financial crisis as justification to begin imposing, and then increasing, tuition fees for all students. Charging tuition fees to foreign students had long been viewed as a source of revenue to subsidize university budgets. As budgets tightened in the early 2000s foreign students were therefore the first to feel the impacts of increased tuition. Simultaneously, UK immigration policy was in the middle of a shift towards a "points-based" system. Advertised as a more neutral and transparent method for making decisions about which

visa applicants to admit, the Points-Based Immigration System (PBIS) assigns points to applicants for meeting criteria such as English-language proficiency or meeting income thresholds.

The cohort, mostly first-year students in the Business & Management program at QMU began to feel urgently the importance of developing a collective analysis around the interaction between the UK university system and the UK Border Agency (UKBA). They had experience with the day-to-day operation of the PBIS as they crossed borders and filed visa applications, and had developed their own ways of navigating the combined hardship of increasing tuition fees and existing immigration policy which limited work hours or denied entirely the opportunity to work (legally) to student visa-holders.

Drawing from their organizing experience, from their contact with other counter-mapping initiatives, and from a growing movement amongst students across London universities, the QMU students saw the utility of setting aside time for a counter-mapping project. The idea was to develop a shared analysis of their situation as students and produce materials which could engage graduate and undergraduate students at Queen Mary and other universities in a widening conversation and movement[3]. Students contacted members of 3Cs: the Counter-Cartographies Collective, and invited us to participate in a counter-mapping collaboration. The project would build on 3Cs existing work mapping immigration policy in the US as it related to universities and trace in more

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3   The Business & Management program at QMU also required that graduate students organize a collective conference or other project during their second year.

detail the filtering and disciplinary[4] function of the UK Border Agency, checkpoints, and immigration prisons as they related to foreign students.

The map is titled *counter\mapping: finding your way through borders and filters.* One page of the map links narratives of struggle across scale to explore the connections between student migration to the UK, the UK Border Agency's system of detention facilities and the histories of resistance within those facilities, the system of monitoring and control of higher education through the UK national government, the race and gender dynamics of students, faculty and staff on the QMU campus, and the way power is organized across different workers on the campus. The right-hand side of the map shows the top seven countries from which students come to study at Queen Mary University and the location of visa application offices within those countries. White-and-pink dotted flow lines, populated by foreign students, administrative staff, faculty and commodified knowledge, traverse the space between the right-hand side of the map and the left-hand

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4 Here as elsewhere, I draw on Foucaultian notions of the disciplinary and population-management (or filtering) modes of power. In the disciplinary mode, institutions enforce norms on individual behavior which, in the ideal, eventually become internalized within individual subjects. In this context, disciplinary power includes: surveillance and reporting mechanisms in immigration law, legal requirements about how much one can work as a student, law prohibiting spouses who enter the country on their partner's student visa from working (and thus codifying a gendered norms of family life). As Dean Spade argues in *Normal Life*, population-management, or what we called "filtering" power in the QMU map, consists in "purportedly neutral" programs that distribute life chances across a population. In the population-management mode, institutions "operate in the name of promoting, protecting, and enhancing the life of the national population, and, by doing so, produce clear ideas about … which societal 'others' should be characterized as 'drains' or 'threats' to that population" (110). In this case examples include: a tiered immigration policy which characterizes entire populations by country as more or less threatening, and differential tuition fees for foreign vs. UK citizen students. Spade, Dean. *Normal Life: Administrative Violence, Critical Trans Politics, and the Limits of Law.* Brooklyn, NY: South End Press, 2011.
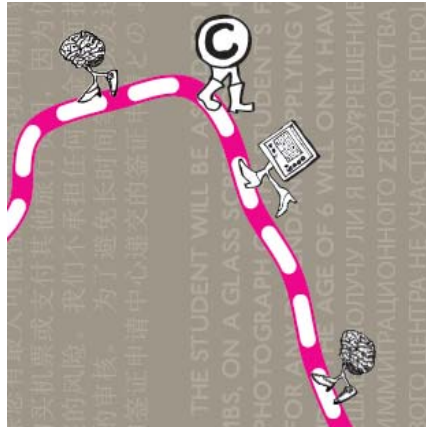
Illustration 1: Student brains and an administrative staff person walk from China to the UK, while copyrighted information heads in the other direction. Note the Sea of Bureaucracy in the background. QMU Counter\mapping Collective. "Counter\mapping: Finding Your Way Through Borders and Filters," September 2010.

side. The left hand side of the map is defined in the background by the outline of south-east England, on which are shown the location of major airports and immigration detention facilities. Near the location of London on the outline of England, a larger map shows different offices of the British higher education administration and the flows of money within them, locating them as well as they are situated within London with respect to the Thames and the QMU campus. The upper-right corner of the map is dominated by an inset at the scale of the campus itself, on which workers at different levels of the university interact with each other and with the spectre of Simon Gaskell, the university's principal.

Like the campus inset, the entire map is populated by a cast of characters (walking brains, walking computers running Microsoft Office and wearing high heels, people in janitorial uniforms, walking copyright symbols and pound signs, security guards,
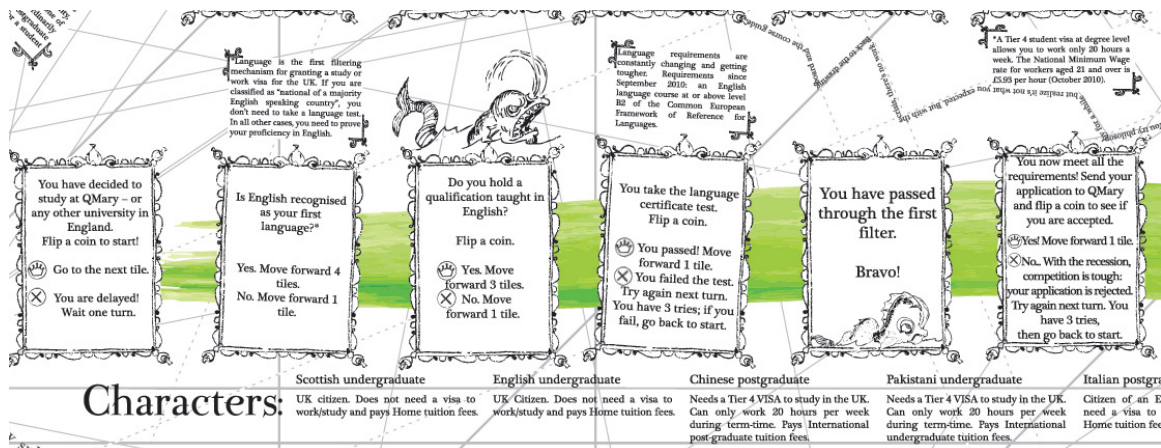
Illustration 2: Detail from the counter\mapping game showing the first few tiles and the list of possible characters. Ibid.

lecturers, etc.) which interact with the different scales of the map in different ways. For example, brains travel to the UK on planes, trains and ships from the different countries from which foreign students come to study at Queen Mary University; on the scale of the University itself large groups of computers, brains and cleaning workers are gathered outside the gates of the university waiting to go to work (or are they on strike?).[5] Designing the characters was also a way for us as a mapping collective to develop an analysis around questions of subjectivity, race and gender on campus. By asking ourselves how foreign students should look on the map, for example, we came to argue that after passing through the filters of visa applications and the border itself, and because of prohibitions on work or extracurricular travel outside the country, migrant students were seen by the UK Border Agency as walking brains (Illustration 1).

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5   The inclusion of individual characters, as well as our use of hand-drawn buildings and figures, and sea monsters and angels (on the game side of the map), were inspired by maps which members of the collaboration encountered at the *Magnificent Maps* exhibit at the British Library.

The other side of *counter\mapping QMU* is taken up by a game (Illustration 2)

which explores the different subjectivities and trajectories of foreign students studying at

Queen Mary, and tries to give players first-hand experience of the functioning of filtering

mechanisms. The game takes players through the experience of a foreign student from

initial desire to study in the UK through the end of their first semester of study. The rules

are simple: players move forward by one tile on the board each turn. At each tile, however,

players confront filtering and disciplinary institutions. Each player chooses one of seven

potential characters to play through the game – characters have different nationalities and

language backgrounds which condition their ability to progress through the filtering tiles.[6]

Passage through these tiles is determined either based on nationality and language ability

or randomly through a coin flip (since population-management distributes life *chances*

and not necessarily outcomes). Players playing as UK citizens, for example, can skip past

the first 5 tiles (a language-assessment process), but still have to apply to the university

and have a coin-flip land heads to indicate that they have been accepted.

Not all games are maps, but as a group of counter-*cartographers*, we designed a

game board which could also be read as a map. Part of this was an intentional choice to

use design elements from early Renaissance European ocean maps in the game design. We

had been looking at these maps for design inspiration in part through happen-stance

6 Players can make up their own characters, but the five examples listed on the board are: Scottish and
   English undergraduates (both UK citizens who do not need visas and pay low rates for tuition and fees),
   Chinese and Pakistani post-graduate students (who must pay higher International post-graduate tuition
   rates, need a visa to study, and can only work 20 hours per week), and an Italian post-graduate student
   (who does not need a visa to study, as an EU resident).

(because of encountering them at a special exhibit at the British Library). For us they also exemplified a fascinating potential in Western cartography before a technical aesthetic came to dominate map design. With its sea monsters, angels, compass rose, and rhumb lines, the game is designed to look like an sea-faring map (Illustration 3). In addition to being played as a game, it can also be read as a map of the legal hurdles required to successfully study as a foreign student at a UK university.

Illustration 3: One of the cherubim or angels from the counter\mapping game. These were placed at the four corners of the map after Renaissance European maps in which angels representing the four winds were placed in the map corners. Ibid.

In contrast to some more didactic versions of the "game of life" there is enough random chance to keep things interesting – for periods of the game a player playing as a non-English speaking Pakistani student might be able to hold the lead against someone playing as a UK citizen, even if on the whole the board is much easier to traverse for the latter. In response to discourse around immigration which posits immigrants as consistently victims, and a right-wing response which argues that immigrants and people

of color receive "special treatment," playing a game which is rigged by design, but in which nobody is guaranteed to lose, helps players to understand how individual experiences of success and failure are different from population-management institutions which make it much easier for certain categories of people to succeed and much harder for others.

Even with our attempts at including chance elements, in actual game play it was easy to become overwhelmed with the hardship of foreign student life and feel discouraged about taking action. After the initial draft, then, we went through several cycles of revision in which we added different "ways out," reflecting real-life experiences of creatively and quasi-legally navigating the oppressive immigration regime. Some of these escape routes were built into the game itself (on several of the tiles players are able to get in a sham marriage in order to get a student visa), but others are written on the game board outside the linear structure of the tiles themselves – encouraging players to think past the deterministic structure of the game and towards transformative organizing in their game-playing, and more importantly in the rest of their lives.

Counter\Mapping QMU brought together a group of collaborators from five different continents (each speaking their own flavor of English). Members of the project team were situated differently within Queen Mary University (as short-term Masters students, long-term PhD students, and visitors), had different work and family situations, and differing political commitments. This heterogeneous group came together with the intention not just to produce a printed map but to "invent a space for research, analysis,

politics and collective collaboration that … [would] carry beyond the project in some way." Although we chose to call it counter\mapping in this case, our process, like the Precarias example in Chapter 1, was an experiment in the use of counter-cartography to elaborate a plane of commonality: amongst group members ourselves, but also "in a space that has come to be not just that of individual institutions and projects, but also that of a 'movement.'"[7]

Our counter\mapping 'experiment' at Queen Mary University honed in on a set of ways of making maps and of thinking about the counter-cartographic process which we found it particularly rewarding to do "otherwise." Specifically, we focused our efforts around:

- thinking critically about the ways in which our maps would travel outside of the collective, and ways to structure that process towards the building of a broader movement

- experimenting with non-representational techniques in the graphic design process of the map, as a way to tie knowledge-production and graphic production together

- structuring the map-making process itself in ways which would invite collaboration, build ties of solidarity amongst participants, and dissuade hierarchies from emerging within the group

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7   QMU Counter\mapping Collective. "Countermapping the University." *Lateral* (forthcoming): 3-4.

- taking seriously the affective and emotional dimensions of map-making and map-
  reading

- incorporating play and performance into the process of map production and data-
  gathering.

- centering the importance of self-care and care for others in the collaboration;
  thinking of child-care, food emotional support as part of the cartographic process
  and not secondary to it

In this chapter, I expand on the first three of these focus areas: the ways in which maps
travel, the implications of a non-representational cartography, and the ways in which
map-making process can invite collaboration.

Maps travel

Maps fascinate. Drawn large and hung on a wall, they can draw a crowd of on-
lookers to join a discussion. Folded up and laid out on a table, they disappear quickly into
the hands of passers-by. The initial encounter between a fascinated onlooker and a new
map is just one moment in what Scott Kirsch calls the "second circuit of cartography –
that is, the practice of agents writing on and reworking the content of the map."[8] Kirsch's
use of the phrase here refers literally to agents of the colonial Phillippine state marking up
their progress on maps in red ink. As Rob Kitchin and Martin Dodge argue, however, the
practice of map-reading is always a process of "reworking." Maps are "brought into being

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8   Scott Kirsch. "The Invention of Territory." In *Territory and Cartography: Politics, History, Techniques II.*
    Las Vegas, Nevada, 2010.

through practices (embodied, social, technical), *always* remade every time they are engaged with."[9]

Scientific models of cartographic communication treat the encounter with a map as an outcome of: the information graphically encoded in the map, the presuppositions contained in the map-reader's mind, and a random error term. Within this model once a map is printed, all of the *cartography* is locked-in, and becomes the initial conditions for a random process, any instance of which unfolds linearly through time. Understanding maps as continually reworked, as Kitchin and Dodge argue for, means that printed map production is only one step in a continuing, contingent process of encounter between everyone connected through a map. I return to Dodge and Kitchin's processual understanding of maps in Chapter 3. In the context of the "second circuit" of (counter-)cartography, their argument highlights the importance of map distribution and use as an integral part of a counter-cartographic project.

The Beehive Collective, a graphic design group based in Macias, Maine, spends almost as much time thinking about how their map-like graphics travel as designing them themselves. Beehive maps are lavishly detailed, pen-and-ink map-like illustrations which use insect and animal characters to share stories and open movement-building conversations. The Beehive organizes their work around multi-year campaigns, each focusing on a particular issue such as United States military intervention in Colombia or

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9   Kitchin, R., and M. Dodge. "Rethinking Maps." *Progress in Human Geography* 31, no. 3 (June 1, 2007): 335.

the impact of coal mining the Appalachian region of the United States. Campaigns start

with extensive consultations in the communities most impacted by the issue being

mapped. Collective members (called bees) travel along with sketch versions of the map,

visiting communities and activist groups in what is often a transcontinental circuit. Even

as the map is in production, its traveling functions to share stories and connect

communities into a broader movement. After returning to their "hive" in Maine to do

final production on a map, the bees go back out on tour. At this stage, however, they still

consider the map to be unfinished – each presentation has the potential to "inspire new

stories that implant themselves into the graphic. From there, they can be carried into the

next community to be shared."[10] This careful consideration of the entire circuit of their

maps is one of the biggest strengths of the Beehive's approach, and it allows them to

replicate in their production process the kinds of decentralized alter-globalizations which

their maps depict.

One of the goals of the Counter\Mapping Queen Mary University collaborative

was similarly to produce a map which would help knit "individual institutions and

projects" into a "movement."[11] In our first planning meetings, members of the

collaboration begin to discuss how to structure the print map so that it could facilitate

engagement, not just with other graduate students, but also with the many undergraduate

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10 Bee, Lara, and Ander Reszcynski-Negrazis. "Drawing Common Ground: An Interview with Lara Bee of
     the Beehive Design Collective." *Upping the Anti*, no. 13 (April 2011): 55.

11 QMU Counter\mapping Collective, "Countermapping the University," 4.

students at Queen Mary to whom members served as teaching assistants or instructors. One of the goals of the map would be to develop amongst undergraduate students more of a day-to-day familiarity with the UK immigration system.

With this in mind, one side of the map was developed as a board game. We decided that developing part of the map as a board game would accomplish our dual goals of making a map that would travel and could be used as a teaching tool, and building familiarity with the day-to-day disciplinary and filtering operations of the UK Border Agency. In order to make the game/map as travel-ready as possible, we determined that it would have to be playable without any special equipment (so that we could distribute just the paper map itself), have quickly understandable game-play, and also have a game board which simultaneously functioned as a readable map (e.g. there should be no significant aspects of the game which could be apprehended only through playing it).

It was also important that our version of the game of life also function as a teaching tool. Therefore, both the entire trajectory of the game and each individual tile were based on the real experiences of members of the collaboration, as well as our research into the technical structure of UK immigration law. In order to keep game-play from being slowed down by too much detailed reading, while still creating a design which was information-dense enough to be useful for reading on its own, we decided to include "footnotes" for many of the tiles which delve further into relevant law and policy.

Cartographies beyond the representational

Maps are not, have never intended to be, exact mirrors of the Earth's surface. Simplification, generalization and data refinement are key tools in the process of Western scientific cartography. It is at the same time important to understand that traditional cartography still functions very much through a logic of representation. Map icons, for example, may or may not be designed in order to resemble, but they consistently are designed in order to represent. Representational maps work because they function as part of (material) chains of resemblance which co-constitute the territory which they claim to represent. This logic of representation is what makes it possible to point at a map and say something like: "this is Raleigh," "that is the Ferry from Hatteras to Ocracoke," or "the darker purple areas have a higher median income." These statements depend on institutions, practices, relationships, bulldozers, annexation lawsuits, and census forms which discipline both spaces and people. Representational cartography attempts to make invisible the institutions, practices, relationships, and people who do the work necessary to keep chains of representation smoothly functioning.

The institutions, practices, technologies and bodies underlying representational cartography claim, in Donna Haraway's language, "the power to see and not be seen, to represent while escaping representation."[12] What escapes representation is oftentimes the object of counter-cartography – the ways these systems function to maintain and increase

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12 Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (October 1, 1988): 581.

a hierarchical distribution of wealth, how they distribute life chances in ways which make it harder for marginalized communities to exercise autonomy, how they violently impose the territorial will of the few on the many, and their "perverse capacity – honed to perfection in the history of science tied to militarism, capitalism, colonialism, and male supremacy – to distance the knowing subject from everybody and everything in the interests of unfettered power."[13] Counter-cartography, growing out of social movements which situate themselves in opposition to the unfettered power of individual states, of multinational corporations, of border regimes, neoliberalism or capitalism, opposes both the material of chains of representation and the "this-is-that-is-there" logic of maps which they make possible.

Where representational cartography makes statements about a defined territory, non-representational[14] *counter*-cartography aims to ask questions and open conversations. A non-representational map is not a map which says nothing, nor is it one which has no connection with any outside. Rather, non-representational mapping uses relations of what Foucault calls similitude.[15] Graphic objects on the map plane have relations of similarity with material objects, but also with other graphic objects, with words and with ideas.

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13 Ibid.

14 "Non-representational theory" has its own meaning within certain subfields of geography, particularly through the work of Nigel Thrift. In this section, I'm using non-representational cartography strictly to refer to a way of thinking about map design which moves beyond and against traditional conventions of cartographic representation and scale.

15 "... similitude circulates the simulacrum as an indefinite and reversible relation of the similar to the similar." Foucault, Michel. *This Is Not a Pipe*. (Berkeley: University of California Press, 1983), 44.

Similitude explodes the unidirectional real → representation arrow of the Western map into a multitude of connections both within and outside the map plane.

The Counter\Mapping Queen Mary University project attempted to use a non-representational approach to cartographic design in order to multiply connections of solidarity and struggle. This led us to a design principle of productive juxtaposition in the graphic plane of the map. The issues we faced were multi-scalar in nature, and hence the printed map contained four distinct scales: the Queen Mary University campus, UK government agencies (mapped on the scale of the city of London), South-Eastern England, and the global space of flows of labor, knowledge and capital. In order to design a map which represented the geographies of these four scales, we might have chosen to use one base map at the world scale, with insets zooming in on the UK, the city of London and the Queen Mary University campus (in that order). Each inset would have needed to be properly situated within the larger scales as well, perhaps using a rectangle to indicate the extent of the larger-scale (zoomed-in) insets on the smaller-scale base-map.

Instead of attempting to hold onto a rigid scalar relationship, we designed a map page on which graphic objects function less as stand-ins for geographical facts and more as objects in their own right. Our decisions about placing characters, country outlines, and flow lines on the printed page were governed by the graphical logic of the page itself and by the meanings that might inhere in the interactions between objects on the page, not by a representational logic of reference to any "real-world" counterparts. The four
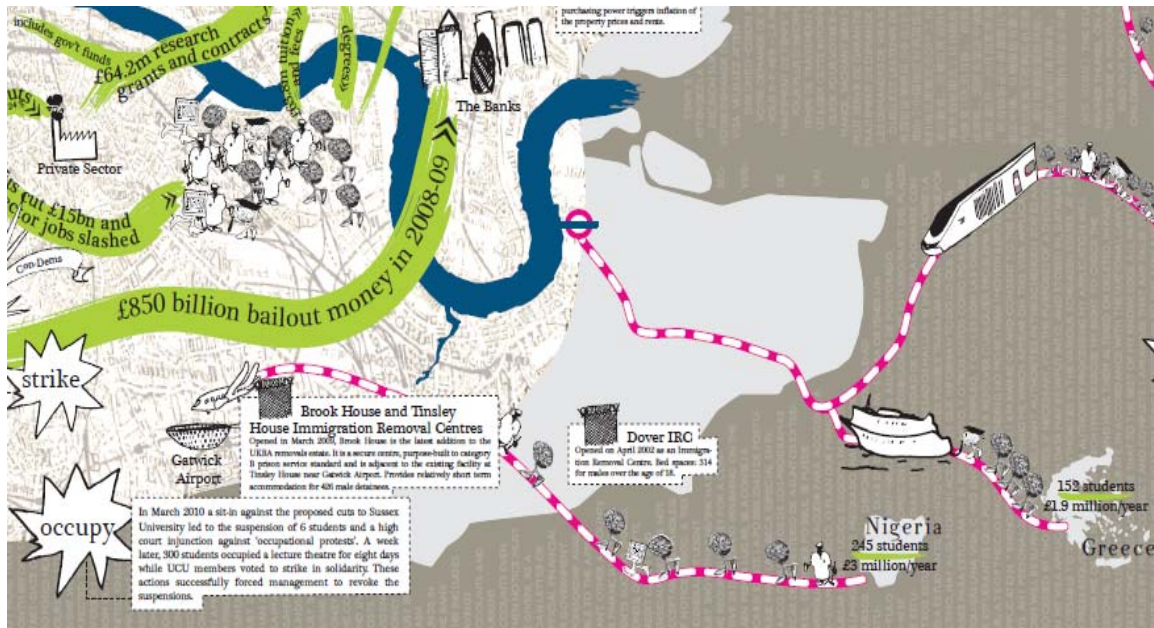
Illustration 4: Detail showing both the global, Southeastern UK and London scales. QMU Counter\mapping Collective. "Counter\mapping: Finding Your Way Through Borders and Filters."

scales are arranged in such a way that they flow into, out of and on top of each other. A set of characters – among others "walking brains," service, and administrative staff – traverse the entire map across scales, traveling from the countries from which most QMU foreign students travel, through the airports and immigration facilities of south-eastern England, into major student housing neighborhoods in London, and finally amassing at the gates of the University itself. Along with the characters, comic bang icons for key moments of resistance also disrupt the consistency of the map at all scales. The Department of Business, Innovation and Skills (a United Kingdom counterpart to the United States Department of Education) extends a robotic arm to surveil Queen Mary's campus, enacting on the page a similar relationship to the institutional relationships we had

discovered through research. The "Sea of Bureaucracy" is a geographical impossibility (bordering the United Kingdom, India, the United States, and Greece, among others), but is intended to evoke shared experiences of border crossing and passage into the UK.

Using the language of non-representation to describe this and other parts of the *counter\mapping* map is not to say that it has no reference or relationship with other objects (institutions, places, bodies). Rather I mean here, and throughout our design process we attempted, to take seriously the multi-directional nature of those relationships. Throughout the process of designing the map, we found that by taking seriously graphic facts such as the proximity of certain objects on the page or the way we had chosen to draw different characters or institutions we were led to discover new facts or ask new questions about the "real world" outside of the map. The relationships stemming from the multi-scalar juxtaposition in the graphic plane of the map opened up new lines of analysis and, more importantly potential organizing. For example, locating immigration prisons (known in the UK system as "Immigration Removal Centres") alongside and in some cases on top of flows of students into the University drew us to ask questions about the criminalization of student life and labor.

Illustration 5: Section from Cartografía Crítica del Estrecho. Hackitectura. "Cartografía Crítica Del Estrecho De Gibraltar," 2005.

Hackitectura, an activist mapping collective based in Spain offer another understanding of how maps can function non-representationally. Hackitectura sees their work as making maps which are productive in themselves, rather than representational. One of the founding members of the group, José Pérez de Lama, explains how their approach to counter-cartography[16] is informed by the Deleuzian concept of the machine. In contrast to the notion of structure, a machine is an always-precarious and contingent connection between distinct and heterogeneous elements. Machines operate across scales – connecting for example bodies, technologies, flows of of energy, non-human agents, systems of law, and institutions. De Lama argues that, in the broadest sense "map-making could mean the composition of heterogeneous elements in order to constitute new

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16 The Spanish, *cartografía crítica*, is more directly translated as "critical cartography." Here, I'm choosing to follow an informal convention which seems to have developed in the literature of reserving "critical cartography" for the body of theoretical work analyzing the relationships between maps and power, and "counter-cartography"'for the critical *practice* of map-making.

machines."[17] Hackitectura's 2004 *Cartografía critica del Estrecho* "presents a machine

which operates across the Straits [of Gibraltar], composed of inter-linked social

movements, shared trajectories of movement, technologies, existential territories and

political projects."[18] De Lama explains, however, how the map (and the mapping process)

itself is a machine, linking heterogeneous movements and actors into organizing for

migrants rights and against the EU border policy and immigration prisons. Throughout

the map-making process, the draft map was "one of the main tools to … produce the

collective desire which set in motion the building of a new digital infrastructure that

would contribute to formation of a new trans-border territory."[19] Describing their work

making the 2002 *Mapa Sevilla global*, de Lama explains how the map-making process,

which involved members of Hackitectura along with academics, members of the urban

women's collective *Sururbana* (literally, "Urban South"), and members of the *Foro Social*

de Sevilla (Seville Social Forum)*,* functioned "to gather together and put in dialogue" the

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17 "…en una acepción amplia de la cartografía … hacer mapa significaría componer elementos
heterogéneos, para constituir nuevas máquinas." de Lama, José Pérez. "The Wasp and the Orchid Make a
Map in the Heart of a Rhizome. Cartography and Machines, Reinterpreting Deleuze and Guattari." *Pro-
Posições Campinas* 20, no. 3 (60) (2009): 140. My translation.

18 "...se presenta una máquina que opera sobre el Estrecho, compuesta de movimientos sociales conectados,
trayectorias compartidas, herramientas tecnológicas, territorios existenciales y programas políticos que
se proyectaban hacia el futuro." Ibid., 142. My translation.

19 "...constituyó una de las principales herrmientas para … producir el deseo colectivo que llevó a la
decisión de efectivamente ponerse a trabajar en la construcción de una infraestructura digital que
pudiera contribuir a la construcción de un nuevo territorio transfronterizo." Ibid., 136. My translation.

groups involved, and how the finished map became a "base for organizing debates around

critical urbanism" both in the academy and around Seville.[20]

Map-making facilitates collaboration

> *The map is open and connectable in all of its dimensions; it is detachable,*
> *reversible, susceptible to constant modification. It can be torn, reversed,*
> *adapted to any kind of mounting, reworked by an individual, group, or social*
> *formation. It can be drawn on a wall, conceived of as a work of art,*
> *constructed as a political action or as a meditation.*
>
> –Gilles Deleuze and Felix Guattari[21]

In the previous section, I mentioned that the process of making the *Mapa Sevilla*

global in 2002 was an impetus for dialogue and connection amongst formerly-

disconnected organizations and communities. This would be true, to some degree, of any

process of collective production – organizing a rally, perhaps, or editing a book. In fact,

the *Mapa Sevilla global* emerged out of a broader collective process in Seville at the time –

planning the Seville social forum. Why, then, does de Lama locate the map itself as the

source of dialogue, connection and debates? I argue that more than many other forms of

theoretical and artistic production, map-making is uniquely suited to teamwork, and

often necessitates it. Counter-cartography, moreover, can be designed from the ground up

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20 "...el proceso de cartografía sirvió para reunir y poner en diálogo las investigaciones previas de los diferentes grupos que se implicaron" and "el mapa sirvió como base para la organización de debates sobre urbanismo crítico en espacios ciudadanos y académicos" Ibid., 134. My translation.

21 Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia.* (Minneapolis: University of Minnesota Press, 1987), 12.

as a process which invites meaningful participation from people and organizations with a wide range of skill-sets, interests and time commitments.

As the passage above suggests, reasons why maps are particularly well-suited to collaboration range from the theoretical (mapping as a collective political action) to the mundane (maps can be torn, collaged drawn on). In their exploration of one the first 3Cs collective mapping projects, Maribel Casas-Cortes and Sebastian Cobarrubias list the "benefits of a social-movement-based form of cartographic production." They argue that maps can help "strengthen and deepen struggle" because they are: "are non-textual and non-grammatical," they "are easier to produce or build on in a participatory and collective manner," they "act as excellent tools for teach-ins and workshops," and "never need to be considered finished."[22] The Counter\Mapping QMU experience reinforced that these four aspects of maps can help build collaboration. In addition to Casas-Cortes and Cobarrubias' list, we also made use of the the non-linearity of maps and their place-making function. In what follows, I give more detailed explanations of a modified version of Casas-Cortes and Cobarrubias' list, before explaining how we made use of these benefits of counter-cartography in the QMU project.

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22 Cobarrubias, Sebastian, and Maribel Casas-Cortes. "Drifting Through the Knowledge Machine." In *Constituent Imagination: Militant Investigations, Collective Theorization*, edited by Stevphen Shukaitis and David Graeber, (AK Press, 2007), 116-117.

"Maps are non-textual and non-grammatical." They engage both creative and analytic thinking, and as such "are easier to produce or build on in a participatory and collective manner."

Textbook cartography works within a fairly rigid definition of which elements constitute a map. Counter-cartography, however, allows for more flexibility. Because of this, counter-cartographers can tailor their map design to take advantage of the strengths and interests of different map-makers, thus facilitating full involvement of all in the collaboration. Depending on the desires of map-makers a map can include a great deal of explanatory text, or it can be completely non-textual. If members of a collaboration are drawn to more logico-mathematical ways of thinking they can focus on developing the grammar of the map – conventions which link meaning in the map with symbology, color and layout choices. Maps can be more or less grammatical, or they can re-use existing grammars (some of Hackitectura's maps, for example, are built according to the graphic conventions of PureData, a graphical programming language). Map-makers who are skilled in drawing or painting can focus their energy on making custom icons or illustrations, or even draw the whole map by hand.

However, none of this is necessary. Depending on the context, desires and interests counter-cartography could simply involve taking an existing map and marking on it with stickers. For example, *Iconoclasistas*, a graphic design collective based in Buenos Aires, Argentina, has developed a technique of "collective mapping," which they use in workshops across South America. They describe "collective mapping" as a tool to build "a

Illustration 6: Sample icons distributed by iconoclasistas. iconoclasistas, Mapeo colectivo*, 6.*

shared horizon of feelings, practices, questions and forms of resistance," with one of its

main benefits being "the possibility of articulating diverse subjectivities in the

construction of emancipatory, disruptive and/or inclusive narratives."[23] In order to be a

process which is open to everyone's participation, workshops often start with an existing

"hegemonic representation" of the area. Participants then identify common questions or

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23 "No se basa en separar sino en elaborar un horizonte compartido de sentidos, prácticas, problemáticas y formas de resistencia que no opaque las particularidades. Justamente una de las virtudes de esta construcción colectiva es la posibilidad de articular subjetividades diversas para accionar en la construcción de relatos emancipatorios, disruptivos o inclusivos." iconoclasistas. "Sobre El Mapeo Colectivo," May 9, 2011. My translation.

problematics (for example "Where are sites of pollution or landfills?" "Where are sites of resistance located?" or "What areas are watched by private security guards?"), develop a shared set of icons which speak to those themes, and then build a common map of their region, first in small groups and then as a larger group.[24] The resulting map-making is a collective process of knowledge-production, and produces a new map which, although it may start with an official cartography, "exceeds and critiques these hegemonic representations an account enriched by the diversity of participants."[25] Iconoclasistas suggests that groups develop their own icons in common, but in order to make the process more accessible to a wide range of participants they also continually design, upload, and distribute sets of free and open-source icons for collective mapping (Illustration 6).

When counter-cartography projects engage with a wide range of skills, they can also work to build non-hierarchical relationships within the map production process itself. Traditional cartography often follows a linear and highly-regulated work-flow, in which ultimate creative control rests in the mouse-holding hands of either an ArcGIS user or a graphic designer using Adobe Illustrator (both pieces of software with steep learning curves). In seeking to build non-hierarchical collaborations, counter-cartographies can

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24 iconoclasistas. *Mapeo Colectivo: Profundizando La Mirada Sobre El Territorio*, 2010.

25 "Si bien se elaboraron tomando como base las divisiones geográficas y fronteras instituidas por las cartografías oficiales, en las intervenciones colectivas se desbordaron y criticaron estas representaciones hegemónicas a partir de un relato enriquecido por la diversidad de participantes." iconoclasistas. "Reflexiones Cartográficas," May 15, 2011. My translation.

develop their own project-specific work-flows which emphasize and value each

participants skills and de-link creative control from technical expertise. For example, GIS

software users could build portions of the map which they then print out and which are

then physically cut-and-pasted into position on a final map collage (or even cut up into

pieces and re-assembled into new maps). Alternatively, participants who are more drawn

to pen-and-paper could draw sketch maps which are then digitized and brought into part

of a computer-designed final map. Or both could happen at once, resulting in an analog

collage map with digital web-based components (perhaps even projected onto the final

map in an installation).

Illustration 7: Members of 3Cs work on the layout for disOrientations. Photograph by Sebastian Cobarrubias.

Maps demand space and create place

      Some of the collaborative possibilities described above depend on a crucial aspect

of the physicality of print maps – they are (quite often) big! A map of, for example, three

feet by four feet can be seen from across the room if hung on a wall but also holds enough

detail that eight or nine people could easily crowd around it and each focus in on a

different section. Whether mounted on a wall or spread out on the floor or a table, the

process of co-reading a map combines collective proximity with individual focus in a way

not shared by reading together from separate copies of a text or watching a film. Because

maps can be so large, a group of people can gather around a new map layout and design it

together, moving printed cut-outs of different map elements or even simply place-holders.

Illustration 7 shows members of the Counter-Cartographies Collective working on the

layout for one side of our *disOrientation* map. Each of us had produced individual maps or

pieces of writing, which we then printed onto sheets of paper and worked together to re-arrange into the final layout. The physical process of pushing around sheets of paper also functioned as a collaborative way of thinking through questions about the theoretical organization of the ideas contained in our maps, so that the final layout reflected not just aesthetic design choices but also collaborative theoretical production.

Particularly in cases where a team has no defined collective space, unfurling a collective map and sitting it on the floor or a table can even function as a sort of nomadic place-making because of the physical attention the map commands. When they go on tour to conduct map workshops, the Beehive Collective travels with huge (twenty to thirty feet long) copies of their illustrations printed on fabric. Their size helps all workshop participants be able to see the maps, of course, but also their sheer size and presence allow Beehive members to create a workshop setting in spaces that would otherwise offer too many distractions, such as outdoor plazas or bustling student centers (Illustration 8).

Illustration 8:Beehive Collective uses their Plan Colombia graphic to create a workshop space in the middle of the 2009 School of the Americas Protest at Fort Benning, GA. Beehive Collective. "Beehive on Tour," November 1, 2011.

Maps are non-linear (at all scales)

Casas-Cortes and Cobarrubias emphasize the non-linearity of map-reading,

pointing out that maps have no definite beginning or end, and that therefore multiple map

viewers can follow different paths through the same map (and because they don't have to

turn pages to do so, it is easy for many readers to read one map at the same time). As a

whole, written texts have a tendency to be more linear than maps do. Certainly,

particularly at higher levels of organization (whole chapters, sections), written works can

have a non-linear structure, although few do. Deleuze and Guattari's *A Thousand

Plateaus,* cited at the beginning of this section, is one example of a written work which is

intended to be read non-linearly. Except for experimental works of fiction or poetry,

however, text tends to be read linearly within sentences or paragraphs, even if sections or chapters can be re-arranged. Moreover, except in a few isolated cases, removing or changing several words in a sentence or several sentences in a paragraph changes the meaning drastically or even renders that section of writing nonsense. In contrast, it is fairly easy to design maps which contain a lot of information but in which the meaningfulness of different sections of the page are not dependent on each other. Thus maps can allow for a multiplicity of different readings, opening up a space of possibility wherein each person who interacts with the map finds something which resonates with their own story.

"Maps never need to be considered finished"

Even if it never involves physical modification of the map, map reading is always a process of re-working, and in that sense no map is ever finished. However, maps can also be *designed* as unfinished – participants in a workshop can be invited to write, draw or place stickers on a map. Maps-in-progress can even travel from site to site, linking different groups of participants across space. Because their work becomes integrated into the map itself, new people can come into the map at any point and become not just viewers but collaborators.

When 3Cs designed our second *disOrientation* publication, we intentionally crafted two sections of the map which had corresponding digital maps-in-progress. One, a 'weather map' of global struggles around the university, began as an open spreadsheet to

which anyone with internet access could contribute (or delete entries from). We integrated

the contributions from that spreadsheet into the final printed map, but also built a web-

based version of the same map which would remain open to changes and contributions

after the print map was released. This was partly a way to bring organizations and people

with whom we had existing links into the map-making process, but also a way to broaden

our network of collaborators by inviting new readers to put themselves on the map.

Like non-linearity, this "un-finished" potential is not strictly limited to maps, but it

is one aspect which inheres more easily in map-making than other forms of knowledge

production. Certainly writing can be constantly modified and wikipedia.org is a clear

example of the potential of collaborative, constantly-unfinished writing. The non-linearity

of maps as opposed to writing, however, means that one section of a map can be modified

without necessarily impacting the meaningfulness of other parts of the map. This is a

property of maps that counter-cartographers can choose to emphasize by intentionally

leaving space open for additions, adopting an aesthetic which mimics hand-drawing and

hand-writing, and even printing on matte newsprint (which is easy to write on and invites

modification) rather than glossy, high-weight paper (which has a tendency to enshrine the

map as a piece of artwork not to be doodled on).

Designing maps as unfinished is made more difficult because the idea that

cartography is an expert profession, one crucial aspect of Western state cartography, is so

prevalent that it generates a sort of "map anxiety" which leads individuals to see

themselves as unable to draw a map. AREA Chicago, a monthly left-leaning community newspaper in Chicago, successfully overcame this in their "Notes for a People's Atlas of Chicago." In an issue about food systems around Chicago, AREA published as a centerfold a blank outline of the city which readers were then invited to fill in with their own "points of relevance." Positive responses to this initial map led Area to begin more widely distributing their blank outline, and using it to conduct workshops in schools and neighborhoods around Chicago.[26] In order to invite participation, AREA designed an outline (Illustration 9) which gave participants enough context to situate themselves, while leaving plenty of room for individual additions and modifications, and printed it at a relatively large size on newsprint. Beyond relying on the design aspects of the map itself, however, AREA used its existing network of community support to help build public participation by organizing events at which attendees would be guided through the map-making process. At the height of the project, hundreds of maps were completed weekly, and the maps were exhibited at Columbia College of Art & Design, the Hyde Park Arts Center, the University of Chicago at Illinois, and elsewhere.[27] The project has since spread to a number of cities, and was published in 2011 in book form.

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26 Tucker, Daniel. "NPA & AREA: Notes for a People's Atlas - a Project By/with/alongside AREA Chicago." In *Notes for a People's Atlas: People Making Maps of Their Cities*, by AREA Chicago. Chicago, IL: Half Letter Press, 2011. http://peoplesatlas.com/essays/npa-chicago/.

27 "Chicago, Illinois." Notes for a People's Atlas. http://peoplesatlas.com/npa-locations/chicago/.

Chicago

NOTES

LEGEND

AREA Chicago
PO Box 476971
Chicago, IL 60647

http://www.areachicago.org /   areachicago@gmail.com
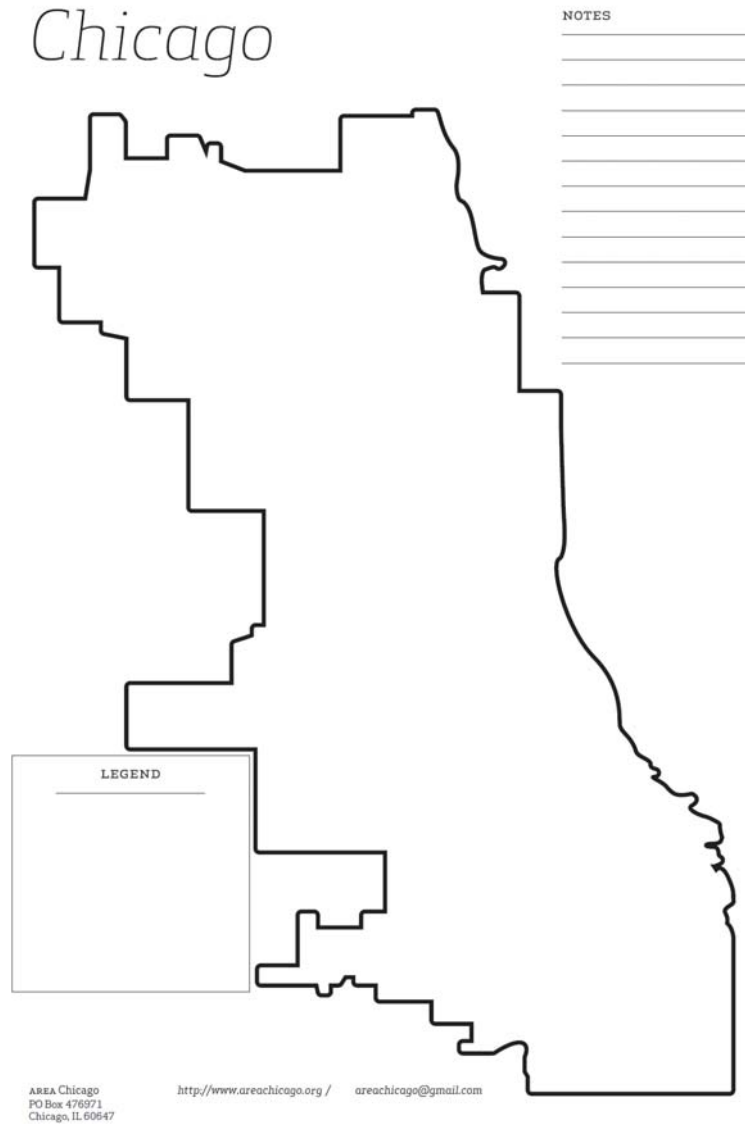
Illustration 9: Chicago outline map from "Notes for a People's Atlas of Chicago." AREA Chicago. "Chicago: Notes for a People's Atlas," 2007.

Counter-cartography facilitates collaboration in the Counter\mapping Queen Mary University project

As I discussed earlier, one of the goals of the Counter\Mapping QMU project was

to build new collaboration among a diverse range of participants. The group of

participants in the Counter\Mapping QMU collaboration included a wide range of skill-

sets, time availability, and political perspectives. Through intentionally structuring our

process to take advantage of the fact that maps engage both creative and analytic thinking, we were able to draw strength from many of those differences. Despite our own intentions, however, some challenges persisted. Participants had differing skill levels and comfort with GIS and computer-assisted graphic design. Knowing from past experience that this would be an issue, we first attempted to address it by building GIS skills within the group. Along with Liz Mason-Deese, I developed and led a GIS workshop using open-source software[28] for members of the collaboration and other participants from across campus. After working through a step-by-step tutorial, participants spent the second half of the workshop trying to use the GIS software to build a map of their own. It became clear that some jumping off on their own with GIS was quite easy for some participants (particularly those who were more comfortable working on computers), but quite difficult for others. Moreover, outside of what was needed for the counter-mapping project, few members of the collaboration had a desire or need to add GIS knowledge to their long-term skill-set. Continuing with a computer GIS-based map-making process could have amplified those differences and created a hierarchy in which contributions from members with GIS facility were more highly valued.

We decided, therefore, to forgo computer-based GIS entirely except for using ArcGIS to create a few basic outline maps. Instead, especially because some members were already skilled at drawing (and had been approaching the project with those skills in

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28 Specifically, an open-source desktop GIS package called qGIS, in combination with Google Maps for inputting point data.

mind), we came to what we hoped would be a non-hierarchical mapping work-flow which combined computer-based design with pen-and-ink drawing and collage. Members divided up into small teams to work on different sections of the map and accompanying game, and each team developed its own work method. Larger group check-ins and critiques were held daily, so that everyone had a chance to weigh in on all parts of the map and different teams could learn from each other's designs and ensure consistency across the finished map. One of the people most interested in the game layout was also a skilled artist, so she drew individual game tiles which the game-making team arranged on a paper mock-up layout. Those working on the London-scale map of economic relations had little interest in cartography or drawing, so that map took shape first as a set of statistics and written analysis, and later as a network diagram.

At first, building a process which allowed for multiple modes of map production created a situation in which each member of the collaborative was able to bring their skills to the map design. However, as we moved further along towards the final production design, bottlenecks in the process arose which we hadn't anticipated. The game team had produced an ornate paper mock-up, which received positive feedback at our first public critique. In order to make both sides of the map consistent we needed to move their work into Adobe Illustrator (a computer graphic design software package), replace hand-drawn text with computer-generated type and in many cases completely re-do their drawings as separate components so that they could be scanned, vector traced and imported into the

final layout. This caused some frustration; more problematically it meant that as the map design progressed there were fewer and fewer ways to contribute for those members who didn't have knowledge of (or access to) graphic design software.

Besides different facilities with drawing, computer GIS, and cartography, we also faced the difficulty that some members had very little time to devote to the project (while still wanting to remain involved), while others were able to spend several weeks working nearly full-time. This arose mostly because of differences in funding and status within the graduate school (some members had to work to support themselves, others had full funding, some members were working on term papers or theses while others were not in classes). One way we worked to make the process more accessible to members with less time was (thinking about the place-making function of maps) setting up a dedicated Counter\Mapping lab area in which all the work took place. That way members with more irregular schedules were able to stop by whenever they had free time (even if it was only a half-hour). We planned shared lunches each day and provided snacks, coffee and tea, so that members didn't have to spend extra time outside of the collaboration procuring food for themselves.

The fact that members could, and did, float into and out of the work over the course of map production meant that we also had to develop ways in which the map could be constantly unfinished and open for new input, so that participants who only had a short amount of time could meaningfully contribute. We set aside one section of the map

for these sorts of contributions. The "Sea of Bureaucracy" was an ocean of text filling the

space in between England and the major countries from which foreign students came to

study at Queen Mary University; it was envisioned as a way to make the border-crossing

passage more graphically complex and communicate a shared experience of passage from

'abroad' to the UK. Text came from UK immigration law and visa application forms in a

variety of languages, and filling the Sea required a lot of text. Whenever folks came by to

participate who had very little time they were able to work on collecting new snippets of

text which would then go into the Sea of Bureaucracy, thus productively contributing to

the finished map. As the map moved closer to completion, we were also able to involve

collaborators who weren't physically located at the University. By sending nightly drafts to

members of the 3Cs located in the United States, we were able to take advantage of the

same round-the-clock work-flow often used by multi-national corporations. Their

distance from the initial design process meant that 3Cs members became integral at later

stages because of the feedback and editing suggestions they were able to make from seeing

the map with fresh eyes.

Mapping as organizing

> *Because the function of the map is to get you where you want to go, to help you find the person you want to meet. And in a larger way, the function of the map is to bring you to a shared reality, a reality where you can act together because you have created a shared understanding of the territory you're inhabiting, the country where you're living, the conditions under which you meet, and so on.*
>
> – Brian Holmes[29]

In this chapter I examined the ways in which maps (as physical artifacts), and mapping (as a holistic process) can be employed in emergent social movements. Because of the non-linearity of maps, because they never need to be considered finished, because of their place-making function, and because mapping engages both creative and analytical thinking, making a map together can help weave a heterogeneous group of individuals into a collective. Non-representational cartographies transform the map plane from a gridded receptacle for information into a productive space which proliferates new connections and facilitates a collective process of political orientation. Finally, centering mapping as a process which unfolds contingently over the long-term suggests ways of using maps to forge solidarities across time and space.

In my discussion of "doing counter-cartography," I have highlighted the ways in which mapping can build solidarity. Brian Holmes defines solidarity as "the effective, society-wide cooperation between human beings that takes place within the parameters of

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29 Holmes, Brian. "Starlight and Secrets; a Short Talk About Maps and Their Uses." In *Fadaiat: Libertad De Movimiento + Libertad De Conocimiento* (Imagraf Impresores, 2006), 234.

a shared imaginary, causing that imaginary to inhere to the real."[30] Counter-cartography

provides a tool for groups of human beings to orient themselves within, and collectively

traverse a "shared imaginary" – the plane of the map. By destabilizing the chains of

representation which bind Western state cartography to a particular conception of the

real, counter-cartography takes seriously the way in which maps function in the register of

what Deleuze and Guattari call the virtual. Whether populated by fantastical characters

like the Beehive collective's map-tapestries, organized into computer code like

Hackitektura's maps built on PureData, or designed as a game board like the QMU

Counter\mapping, mapping is a process through which distinct individual experiences

come together to inform a collective understanding of a common territory. Moreover,

counter-cartography has the potential to help make that shared understanding more and

more real.

No wonder, then that a "mapping revolution" is spreading throughout social

movements.[31] Contemporary social movements operate within a context where post-

Fordism dissolves the spatial boundaries between work and life, where new politics of

gender and sexuality destabilize fixed categories, and where citizenship and state

sovereignty are increasingly delinking from geographic boundaries. Fredric Jameson's call

for a new project of "cognitive mapping," over twenty years old, has been widely and

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30 Holmes, Brian. "Imaginary Maps, Global Solidarities." *16 Beaver*, April 16, 2004.

31 Casas-Cortes, Maribel, and Sebastian Cobarrubias. "Transatlantic Translations: A Trilogy of Insurgent
    Knowledges." In *Uses of a Whirlwind: Movement, Movements, and Contemporary Radical Currents in the
    United States*, edited by Kevin Van Meter, Craig Hughes, and Stevie Peace. (AK Press, 2010), 227-245.

resoundingly answered. The counter-cartographies I have introduced here move far beyond Jameson's goal of endowing "the individual subject with some new heightened sense of its place in the global system" in order to alleviate "spatial as well as our social confusion."[32] Making maps together becomes a way for "individual subjects" to produce at the same time a common territory and a shared imaginary. As a collective, woven with solidarity, they then can analyze and intervene until shared visions become reality.

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32 Jameson, Fredric. *Postmodernism, or, The Cultural Logic of Late Capitalism.* (Durham: Duke University Press, 1991), 54.

References

AREA Chicago. "Chicago, Illinois." *Notes for a People's Atlas*, n.d.
        http://peoplesatlas.com/npa-locations/chicago/.

———. "Chicago: Notes for a People's Atlas," 2007.
        http://peoplesatlasdotcom.files.wordpress.com/2011/08/map1117-summer07.pdf.

Bee, Lara, and Ander Reszcynski-Negrazis. "Drawing Common Ground: An Interview
        with Lara Bee of the Beehive Design Collective." *Upping the Anti*, no. 13 (April
        2011): 53 – 70.

Beehive Collective. "Beehive on Tour," November 1, 2011.
        http://www.beehivecollective.org/imagegallery/main.php?g2_itemId=2557.

Casas-Cortes, Maribel, and Sebastian Cobarrubias. "Transatlantic Translations: A Trilogy
        of Insurgent Knowledges." In *Uses of a Whirlwind: Movement, Movements, and
        Contemporary Radical Currents in the United States*, edited by Kevin Van Meter,
        Craig Hughes, and Stevie Peace, 227–245. AK Press, 2010.

Cobarrubias, Sebastian, and Maribel Casas-Cortes. "Drifting Through the Knowledge
        Machine." In *Constituent Imagination: Militant Investigations, Collective
        Theorization*, edited by Stevphen Shukaitis and David Graeber, 108–122. AK Press,
        2007.

Cobarrubias, Sebastian. "Geographies by the Multitude." Denver, Colorado, 2005.
        http://countercartographies.org/component/docman/doc_download/12-
        geographies-by-the-multitude-the-cartography-of-bureau-detudes.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia.*
        Minneapolis: University of Minnesota Press, 1987.

Foucault, Michel. *This Is Not a Pipe*. Berkeley: University of California Press, 1983.

Hackitectura. "Cartografía Crítica Del Estrecho De Gibraltar," 2005.
        http://hackitectura.net/blog/en/2004/cartografia-del-estrecho/.

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the
        Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (October 1, 1988): 575–
        599.

Holmes, Brian. "Imaginary Maps, Global Solidarities." *16 Beaver*, April 16, 2004. http://www.16beavergroup.org/mtarchive/archives/000868.php.

———. "Starlight and Secrets; a Short Talk About Maps and Their Uses." In *Fadaiat: Libertad De Movimiento + Libertad De Conocimiento*, 233–234. Imagraf Impresores, 2006.

iconoclasistas. *Mapeo Colectivo: Profundizando La Mirada Sobre El Territorio*, 2010. http://iconoclasistas.com.ar/pdfs_para_bajar/mapeo_colectivo.pdf.

———. "Reflexiones Cartográficas," May 15, 2011. http://iconoclasistas.com.ar/2011/05/15/atlas-colectivo-contra-mapas-intercativos/.

———. "Sobre El Mapeo Colectivo," May 9, 2011. http://iconoclasistas.com.ar/2011/05/19/reflexiones-cartograficas-ii/.

Jameson, Fredric. *Postmodernism, or, The Cultural Logic of Late Capitalism*. Durham: Duke University Press, 1991.

Kitchin, R., and M. Dodge. "Rethinking Maps." *Progress in Human Geography* 31, no. 3 (June 1, 2007): 331–344.

de Lama, José Pérez. "The Wasp and the Orchid Make a Map in the Heart of a Rhizome. Cartography and Machines, Reinterpreting Deleuze and Guattari." *Pro-Posições Campinas* 20, no. 3 (60) (2009): 121–145.

QMU Counter\mapping Collective (Manuela Zechner, Tim Stallmann, Maria Catalina Bejarano Soto, Liz Mason-Deese, Rakhee Kewada, Bue Rübner Hansen, Mara Ferreri, Camille Barbagallo). "Counter\mapping: Finding Your Way Through Borders and Filters," September 2010.

———. "Countermapping the University." *Lateral* 1 (Spring 2012). http://www.culturalstudiesassociation.org/lateral/issue1/countermapping.html

Spade, Dean. *Normal Life: Administrative Violence, Critical Trans Politics, and the Limits of Law*. Brooklyn, NY: South End Press, 2011.

Tucker, Daniel. "NPA & AREA: Notes for a People's Atlas - a Project By/with/alongside AREA Chicago." In *Notes for a People's Atlas: People Making Maps of Their Cities*, by AREA Chicago. Chicago, IL: Half Letter Press, 2011.

Chapter 3: Community mapping

Because they focus on making maps in order to build new collaborations, the counter-cartographies I laid out in the previous chapter are particularly suited to movements and communities which are just coming into being, and to building new collaborations between different groups. In fact, the theories of counter-cartography I've discussed (for example the work of Brian Holmes, Hackitectura, and Cobarrubias and Casas) are situated in emerging social movements, mostly focused on issues of precarity and migration. Central to both of these contexts – employment without a permanent workspace or schedule, leaving home to cross borders or perhaps traveling in search of a new community – is the absence of the kind of common places and rituals of encounter that would normally facilitate organizing (thus the initial question for Precarias a la Deriva, of "what" and necessarily *where* "is our strike?"). Counter-cartography as I describe it in the previous chapter thus developed out of particular struggles as a tool to discover and create new planes of commonality. In this chapter I explore a differently-situated alternative to Western state cartography, community mapping. Broadly, community mapping is a set of ways of thinking that help navigate situations in which:

1. it is possible to clearly identify one or several *map-makers, cartographers,* or *GIS practitioners* working in partnership with members of a *pre-existing* community that is organized outside of the cartographic project;

2. even if cartographers come from inside the community, or the boundaries are imprecise, there is a gradient of cartographic expertise or experience between cartographers and community members, which influences power dynamics within the partnership; and

3. becoming map-makers, cartographers or GIS practitioners themselves is not a major goal of the community partner. Rather, the aim is to use maps instrumentally: to accomplish specific community goals and more generally to build power and highlight marginalized voices.

For example, community mapping might be helpful in a situation where GIS practitioners from a university are asked by a community organization to help analyze the impacts of air pollution on a particular neighborhood, or map-makers from a radical art collective are working with young people at a queer youth center to map out spaces of safety and danger. Where many of the aspects of counter-cartography I discussed focused on the internal dynamics of a map-making collective, the external relationship *between* map-makers and community partners is central to the idea of community mapping. In part, this is because community mapping grows out of a different set of contexts – particularly indigenous mapping and community-based participatory action research.

The idea of community mapping, for me, is inspired by the practical examples of, among others, Bill Bunge's Detroit Geographical Expedition and Jonell Allen Robinson's work at Syracuse Community Geography.[1] From a theoretical point of view, community mapping is based in a framework of situated knowledges and critiques of the cartographic gaze, blending work on participatory GIS and feminist GIS with techniques from participatory action research.

I start this chapter with an illustrative example of community mapping in action: a recent collaboration between a neighborhood-based organizing group and 3Cs: the Counter-Cartographies Collective. I then introduce a framework for making maps which are rooted in, responsive to and engaged with community knowledges, developed by Carla Norwood and Gabe Cumming through their work on land-use planning in Western North Carolina. Finally, I give a longer narrative of my own role as cartographer in *Growing Local/Buying Local (GLBL),* an on-going university/community collaboration focused on local foods and sustainable development in Warren County, North Carolina. I use *GLBL* to give some concrete examples of how Norwood and Cumming's approach plays out.

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1   For more on Bunge, see Chapter 1. For more on Syracuse Community Geography, see Robinson, Jonnell Allen. "Syracuse Community Geography: Evaluating a New Approach to Public Participation Geographic Information Systems." Ph.D., Geography, The University of North Carolina at Chapel Hill, 2010.

Investor-owned properties in Northside: 2000

0.25 Miles

■ Investor-Owned Property | ⌐ ¬ Boundary of neighborhood
‿ ‿ conservation district

Source: Orange County Land Records & UNC-NOW research. June 2011

Investor-owned properties in Northside: 2011

0.25 Miles

■ Investor-Owned Property | ⌐ ¬ Boundary of neighborhood
‿ ‿ conservation district
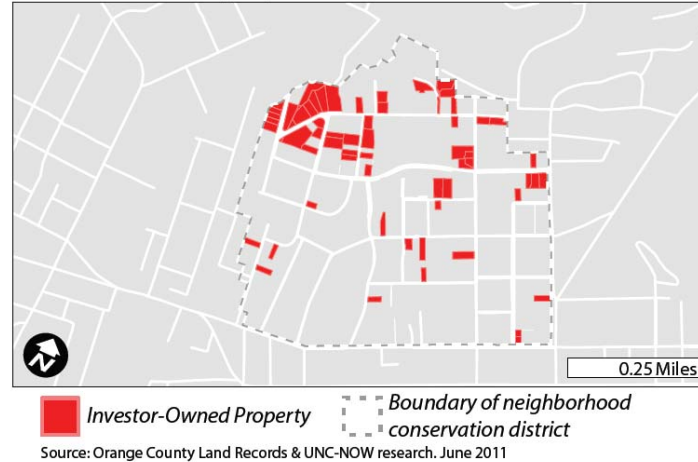
Source: Orange County Land Records & UNC-NOW research. June 2011
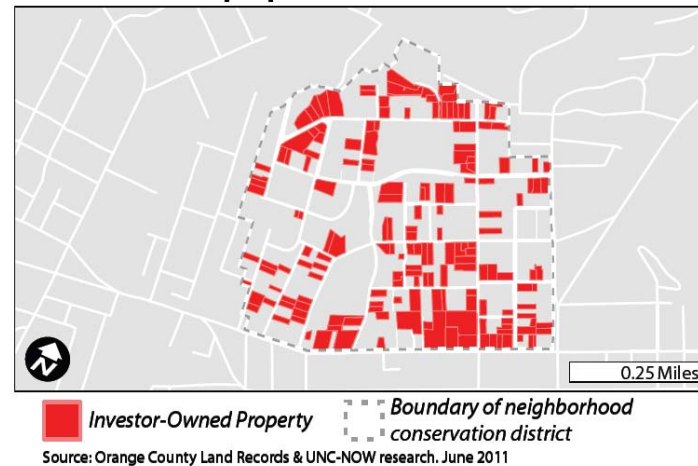
Illustration 10: Investor-owned properties in Northside: 2000 and 2011. Prepared by the author for June 20, 2011 Chapel Hill Town Council meeting.

Community mapping in process: 3Cs and Northside

At a spring 2011 meeting of the Chapel Hill Town Council, the Sustaining Our

Selves (SOS) coalition presented their arguments for an immediate moratorium on

development in the Northside neighborhood of Chapel Hill. Members of SOS spoke about

the 200-year legacy of African-American presence in the neighborhood, about the value

of growing up surrounded by a loving community, and about the importance of

maintaining black ownership as more houses in the neighborhood were developed into

rental duplexes for university students. They clinched their argument with a series of

maps, designed in partnership with the Counter-Cartographies Collective (3Cs). All the

maps followed classic cartographic conventions, showing streets, parcel boundaries,

buildings and the edges of the Neighborhood Conservation District defining Northside.

One series, "Investor Ownership in Northside," (Illustration 10) comprised three maps

showing properties owned by investors from outside the neighborhood in the years 2000,

2005 and 2011. Investor-owned properties were colored with a bright-red fill, while all

other parcels on the map were a solid light gray. The visual impact was striking – a

spreading "red menace" of investor-ownership threatened to take over the neighborhood

if the town council did not take immediate action. One member of council, who also lives

in Northside, described how it "took my breath away, to see it [the changes that she felt as

a resident] in red and green."[2] Several weeks later, at their next meeting, the town council

voted unanimously to approve the proposed development moratorium.

By displaying only parcel boundaries, buildings and streets, while ignoring

cooperation, social relationships and cultural history the 3Cs maps showed the

neighborhood through the eyes of the town administration. They presented a

neighborhood in which problems and potential solutions were both reduced to legal

questions of property ownership, ignoring the power and potential of the broad-based

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2   Bell, Donna. *Chapel Hill Town Council Business Meeting*. Chapel Hill, NC, May 23, 2011.

multi-issue organizing in which Sustaining Our Selves was engaged.[3] Most importantly, neither the maps themselves nor the SOS coalition's presentation of them attempted to critique, complicate or otherwise counteract the system of property ownership or municipal governance. Yet the maps, undeniably, worked to the benefit of neighborhood residents.

In Nancy Peluso's terminology, the maps we presented to town council in Spring 2011 were classic examples of "counter-mapping." Peluso is widely credited with coining the term "counter-mapping" in her 1995 paper "Whose woods are these?"[4] In Peluso's definition, "counter" maps "appropriate the state's techniques and manner of representation to bolster the legitimacy of 'customary' claims to resources."[5] Peluso defines counter-mapping in a different sense than I used counter-cartography in the last chapter. What Peluso calls counter-maps are often in response to or in conflict with specific state maps. Where I've defined counter-cartography as mapping which works to undermine the representational logic of Western state maps, counter-mappers, "meet government mappers on their own ground."[6] They strategically utilize and even *reinforce* the logic of

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3   The SOS coalition's work with the neighborhood included a food distribution program, oral histories, youth media training (and youth-run radio show), and a series of community meetings.

4   Harris, Leila M., and Helen D. Hazen. "Power of Maps: (Counter) Mapping for Conservation." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 115.

5   Peluso, Nancy Lee. "Whose Woods Are These? Counter-mapping Forest Territories in Kalimantan, Indonesia." *Antipode* 27, no. 4 (October 1995): 384. Original emphasis.

6   Ibid., 398.

Western state cartography in order to advance the interests of a particular community –

often, paradoxically, interests which run counter to those of the state.[7]

Peluso situates agency in the final printed map. She argue that maps have power

and thus they can be used by specific parties (developers, Indonesian forest-dwellers) for

specific goals. This view of mapping (that power imbues in maps) suggests that the role of

a map-maker working in partnership with a community is to produce, on her own, maps

which are as powerful as possible so that they can then be used by her community

partner. If maps produce territories, and if cartographers make maps, then the role of a

community mapper is to write different relations of power and different spaces onto the

soil.

I want to turn away from that view towards an alternate thread, one which

understands maps as processual, and their effects as highly contingent. In one of the

earlier responses to Brian Harley's argument that maps should be understood as (and

deconstructed as if they were) texts, Robert Rundstrom argues that an emphasis on text,

inscription and product is unable to account for non-Western and indigenous mapping.

In these "non-text societies," Rundstrom argues, performative actions such as dances,

sand-drawing, and story-telling "carry greater meaning than any object they produce."[8]

Drawing inspiration from these alternate forms of knowledge-production, he suggests that

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7   Peluso notes, however, that it is precisely the absences on the map which enable communities to retain
    more control over their own resources. Ibid., 386.

8   Rundstrom, Robert A. "Mapping, Postmodernism, Indigeneous People and the Changing Direction of
    North American Cartography." *Cartographica* 28, no. 2 (1991): 3.

"we might look at maps less as end-products than as artifacts indicative of a *process* still in motion."[9]

Rob Kitchin and Martin Dodge broaden Rundstrom's argument to an epistemological questioning of the very basis of cartography. Dodge and Kitchin argue that a map on its own is just "a set of points, lines and colours." It is mapping practices which "(re)make the ink into a map" each and every time it is engaged with.[10] The distinction between maps (representation) and territory (real) disappears as the two become understood as co-constitutive. Moreover, map-making, map-reading and all sorts of other map activities can all only be understood in their spatial context.[11]

Understanding maps as "of-the-moment, brought into being through practices (embodied, social, technical), *always* remade every time they are engaged with"[12] unseats the role of cartographer as author. As Casino and Hanna ask, "to what extent do cartographers actually author space?"[13] In other words: *where* can we locate the power of maps? This is a crucial question for community mapping and its attempt to use maps in order to build power with marginalized communities. Neither maps nor map-makers have

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9   Ibid., 6 (original emphasis).

10 Kitchin, R., and M. Dodge. "Rethinking Maps." *Progress in Human Geography* 31, no. 3 (June 1, 2007): 335.

11 Casino, Vincent J. Del, and Stephen P. Hanna. "Beyond the 'Binaries': A Methodological Intervention for Interrogating Maps as Representational Practices." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 44.

12 Kitchin and Dodge, "Rethinking Maps," 335.

13 Casino and Hanna, "Beyond the Binaries," 51.

power which they bring to the encounter with a community partner. Rather, all maps are situated in the context of "intracultural and intercultural dialogues occurring over a much longer span of time," and "cartographers tap in at some point, but no conclusive 'end result' is reached [from their participation] because mapping is dynamic."[14]

In the context of Northside, the town manager, planning department, neighborhood residents, activists, scholars and town council were and are involved in a long-term dialogue with the physical environment of the neighborhood. At certain points in that dialogue physical map artifacts have emerged, but those artifacts cannot be understood outside of the context of the broader dialogue and the sets of mundane actions (meetings, door-knocking, presentations, parking tickets) which empower them.

What does this processual understanding of the power of maps have to say for community mapping? It suggests that maps are successful at advancing community interests only insofar as the entire map-making process proceeds according to community goals and values. If maps are contingent and processual, brought into being through the concrete practices of map-making, then members of a community mapping partnership need to think critically about the entire mapping process from data collection through distribution.

Taken as a freeze-frame, the maps that SOS and 3Cs presented to the Chapel Hill Town Council could lead in a number of different directions, some aligned with the

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14 Rundstrom, "Mapping, Postmodernism, Indigeneous People and the Changing Direction of North American Cartography," 6-7.

interests of Northside residents and others opposed. Our time-series showing the increase in student rentals in the neighborhood could be taken to mean that Northside was too far gone and that Council should work on developing affordable housing elsewhere in Chapel Hill, while focusing on making sure that student renters in the neighborhood were well-behaved. The increase in property values we showed in the neighborhood could have been interpreted as a sign that long-term residents who had held on to their homes were succeeding in a goal of building wealth. It would be inaccurate to say that the maps by themselves advanced neighborhood interests. However, as part of an intentional *process* of neighborhood organizing linked with map-making, the maps had a significant impact.

In Northside, the links between neighborhood organizing and maps were most clear in two public hearings held by the Chapel Hill Town Council to debate enacting a development moratorium for the neighborhood. At the hearings, our maps were presented to Council, but they stood as one piece of testimony alongside the voices of residents and organizers. The impact of the maps themselves can't be disentangled from the numbers of passionate residents in support crowding the Council's chambers in their support. Leading up to that public moment, organizing was an integral part of data-collection for the maps as well. Rather than relying solely on data from the Town of Chapel Hill, as the Town's own maps of the neighborhood had done, we chose to build an alternative geographic information system (GIS) data-set for the neighborhood. Like many municipalities, Chapel Hill makes its parcel database freely available. The town's

GIS parcel database contains spatial information on the shape and location of each plot of land, along with contact info for the current owner and the assessed value of the land and any improvements. Not all public information about land parcels is included in the town's GIS data model. The parcel data is organized to facilitate particular uses (for example analyzing zoning or assessing property taxes). As we worked with activists and listened to residents stories of the neighborhood, we realized that a number of important pieces of data were missing from town records entirely (and thus not part of the town's narrative around development in the neighborhood). For example, parcel records show ownership, but contain no data on occupancy; they also didn't track demographic data about property owners such as race and ethnicity, and historical ownership data, while accessible on a parcel-by-parcel basis was not in a format that we could use for mapping.

Using the town's data-set would have put limitations on the sorts of narratives we were able to explore through our maps. Building our own data-set also gave us an additional opportunity to ground our mapping work in the neighborhood organizing and thus build a more effective mapping process. Activists from SOS and members of 3Cs took parcel data from the town and extracted only those variables that were relevant for our own work (such as ownership and tax valuation). We then merged the town's parcel data with a street address data-set so that we would have one or several addresses for each parcel. We loaded this data-set into a spreadsheet using Google Docs (an online collaborative editing tool), and added additional columns for family type, occupancy

status, investor ownership, and ownership history to our new collaborative neighborhood-based GIS database. Rather than attempting to generate this additional data using statistical techniques (as town planners had done by trying to estimate occupancy using phone records), we saw the process of data-gathering as an opportunity to knock on doors, visit with occupants and potentially engage them in the organizing process. We collected historical ownership and occupancy data by interviewing long-time residents.

Of course, data-gathering was not the only or even the primary purpose of these conversations – rather, our GIS data collection became integrated into the ongoing organizing: inviting residents to community meetings, writing down oral histories and discussing strategy. Without this process of data-gathering and organizing, which helped result in upwards of 50 neighborhood residents coming to multiple Town Council meetings and testifying to their experiences, the maps we made would have had little impact. Understanding our mapping as an integrated part of community organizing, and building that integration in a material way through relying on residents and activists for mapping data, also helped to reinforce our own humility as cartographers and undermined our potential tendency to speak as 'experts', since we were reliant on the observations and analysis of residents themselves in order to do our work.

Background: Critical GIS, Feminist GIS, and Participatory Research

In addition to work in critical cartography discussed above, community mapping approaches draw heavily on critical and feminist GIS as well as participatory research.

Critical GIS scholars provide a framework for understanding how GIS, a purportedly

neutral mapping technology, can set the agenda for research outcomes and restrict or

silence alternative epistemologies and ontologies. Advocates of Feminist GIS draw from

Donna Haraway's concept of the cyborg to suggest the possibility of re-appropriating GIS

technology for understanding how gendered divisions shape space and for furthering a

feminist agenda. Finally, Participatory Research provides a practical lens into how some of

the suggestions from Critical and Feminist GIS might be realized, by unpacking the power

relations inherent in the research process and arguing for the possibility of a research

process which emphasizes collaboration, co-learning and collective empowerment.

Critical GIS

The concept of a GIS dates back to the 1950s and 1960s, when government

agencies in Canada and the United States began developing computer software and

hardware for digitizing, storing and manipulating spatial data. Original Geographic

Information Systems (GISs), such as the Canadian Geographic Information System, the

first full-scale computer GIS, were custom-built systems designed for land management

and national-level land planning.[15] Although full-scale GISs were slower to take hold in

military applications,[16] the history of GIS can't be separated from the development of

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15 Foresman, Timothy W. *The History of Geographic Information Systems: Perspectives from the Pioneers*. (Upper Saddle River, NJ: Prentice Hall PTR, 1998), 4.

16 Ibid., 199-229.

scientific cartography in the 1940s and 1950s United States Office of Strategic Services, a predecessor to the Central Intelligence Agency.[17]

In contemporary usage, GIS encompasses a framework for collecting and storing spatial data as well as a set of tools for analyzing data, developing and empirically testing hypotheses. GIS organizes data into separate layers, where each layer represents a particular category or dataset. GIS data is generally either in vector (sets of points, lines or polygons) or raster (pixel-based images generally derived from remote sensing devices) formats. For example, a GIS used for transportation planning might encompass lines representing the location and speed limits of roads, polygons representing data from a national census about the location of residents, and points representing major destinations. A GIS used for fire risk management in a large wilderness area might combine raster data representing elevation, vegetation type, and vegetation density (derived from remote sensing satellites) with vector data representing water bodies and heavily-used trails.

From a structural point of view, GIS data layers are independent, meaning that layers can be swapped into or out of a particular GIS 'map' without impacting the data on the remaining layers. GIS is also "application-independent," each problem is treated in terms of generic Cartesian geometry, ignorant of disciplinary or societal context. One proponent, Stan Openshaw, argued that this application-independence was a key benefit

17 For more detail on this, see Crampton, Jeremy W. *Mapping: a Critical Introduction to Cartography and GIS.* (Chichester, U.K.; Malden, MA: Wiley-Blackwell, 2010), 53-56.

of GIS in a "post-Fordist" context, suggesting that "a geographer of the impending new order may well be able to analyse river networks on Mars on Monday, study cancer in Bristol on Tuesday, map the underclass of London on Wednesday, analyse groundwater flow in the Amazon basin on Thursday, and end the week by modeling retail shoppers in Los Angeles on Friday."[18] Openshaw's blissful disregard of context was part of one of the earlier published pieces in what came to be known as the GIS wars of the early 1990s. In that same editorial, he suggests that geographers have divided themselves between "the 'soft' pseudoscience of the social sciences" and "'hard' spatial science." GIS offers a "full-frontal and explicitly naked geographicalness" which can unite all of geography within a single "philosophy-ignorant" framework.[19]

As evidenced above, early critics of GIS had no shortage of material to work with. Some early published critiques were as ignorant of GIS itself as Openshaw is of social processes and epistemology. A 1992 piece by Neil Smith opens by suggesting that "GIS and related technologies contribute[d] to the killing fields of the Iraqi desert," and then launches into a history of geography and empire reaching as far back as ancient Rome with not another a mention of GIS until the final paragraph.[20] In 1993, Eric Sheppard pulls together some of the more useful early critiques, arguing that the dependence of GIS on

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18 Openshaw, S. "A View on the GIS Crisis in Geography, or, Using GIS to Put Humpty-Dumpty Back Together Again." *Environment and Planning A* 23, no. 5 (May 1, 1991): 624.

19 Ibid., 621-622.

20 Smith, Neil. "History and Philosophy of Geography: Real Wars, Theory Wars." *Progress in Human Geography* 16, no. 2 (June 1, 1992): 257.

empirical approaches "will likely restrict the development of such alternative 'post-positivist' epistemologies" as structuralism, phenomenology and feminism. Moreover, he argues, GIS scholarship and teaching tends towards a focus on how to make use of existing data, neglecting "fundamental questions of which data are to be collected in the first place, and what basic categories should be used in making the original observations."[21]

After this "first wave"[22] of antagonism from both sides, efforts began to calm the waters and establish a productive dialog between GIS critics and users. The National Center for Geographical Information and Analysis funded a three day workshop on San Juan Island, Washington in November, 1993. These "Friday Harbor" meetings were an opportunity for scholars from both sides of the debate to meet face-to-face and develop a proposal for further study on the "social consequences of GIS"[23]. Their proceedings were published in a special issue of the journal *Cartography and GIS* in 1995, the same year in which *Ground Truth*, a keystone volume edited by John Pickles, drew together a number of papers representative of this "second wave" of critical GIS (still at the time known as "GIS and Society"), which continued early critiques of the epistemological limitations of

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21 Sheppard, Eric. "Automated Geography: What Kind of Geography for What Kind of Society?" *The Professional Geographer* 45, no. 4 (November 1, 1993): 458.

22 The categorization of GIS critiques into three waves follows Schuurman, N. "Trouble in the Heartland: GIS and Its Critics in the 1990s." *Progress in Human Geography* 24, no. 4 (December 1, 2000), 569-590.

23 The proposal was known as NCGIA Initiative 19. See Schuurman, "Trouble in the Heartland: GIS and Its Critics in the 1990s," 578.

GIS but incorporated more subtlety and groundedness in actual GIS practice. In the years since *Ground Truth* and the Friday Harbor meetings, critiques of GIS have coalesced into the sub-field known as Critical GIS, which incorporates scholarship ranging from critical geographies of GIS (geographers using social theory to examine the epistemological underpinnings and societal implications of GIS) to work developing specific ways of extending GIS software to encompass qualitative data and alternative epistemologies (some of which falls under Feminist GIS), to Public Participation GIS.[24]

What insights does Critical GIS bring to community mapping? Community mapping is highly context-dependent, while context-ignorance is one of the hallmarks of mainstream GIS scholarship. Building a mapping process that foregrounds knowledge from marginalized communities requires epistemological flexibility, while GIS privileges a positivist epistemology. Critical GIS scholarship explores the historical development of GIS as a "social technology," asking "what representations of the world are favored by current GIS technologies, … how appropriate these are for the immense variety of lifeworlds that constitute our societies," and whether systemic biases in GIS are "a product of current limitations or inherent to the technology."[25] In so doing provides the

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24 Sheppard, Eric. "Knowledge Production Through Critical GIS: Genealogy and Prospects." *Cartographica: The International Journal for Geographic Information and Geovisualization* 40, no. 4 (January 1, 2005): 12.

25 Sheppard, Eric. "Sleeping with the Enemy, or Keeping the Conversation Going?" *Environment and Planning A* 27, no. 7 (July 1, 1995): 1027.

background necessary to make informed decisions about specifically whether and in what ways to make use of GIS tools in a particular context.

One important outgrowth of the GIS and society discussions of the early 1990s was the sub-field known as Public Participation GIS (PPGIS, also known as PGIS or Participatory GIS). Like the community mapping that I discuss here, PPGIS attempts to use GIS technology in a participatory and community-oriented manner. PPGIS builds on the insights of critical GIS, and "one understanding of PGIS is as a means of integrating local and indigenous knowledge with 'expert' data."[26] However, despite the explosive growth of PPGIS literature and projects (or perhaps because of it), there is no consensus on a clear definition or set of guiding principles for PPGIS.[27] In fact, a significant portion of PPGIS literature skews towards a framework of "stakeholder input" in government decision-making, which presupposes and leaves unchallenged state power. Lacking the sorts of core political commitments present in, for example, Participatory Research, PPGIS "has the potential to be both more enabling to those whom it seeks to serve and to be misused in the 'wrong' hands."[28] Because a concise definition of PPGIS is so elusive, and because Participatory Research provides an alternative and more principled

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26 Dunn, C. E. "Participatory GIS: a People's GIS?" *Progress in Human Geography* 31, no. 5 (October 1, 2007): 619.

27 Ibid., 618-619. See also Schlossberg, Marc, and Elliot Shuford. "Delineating 'Public' and 'Participation' in PPGIS." *URISA Journal* 16, no. 2 (2005): 15–26.

28 Dunn, "Participatory GIS," 621.

framework for thinking through questions of power in research, I choose not to expand

further on PPGIS here.

Feminist GIS

Feminist GIS arises alongside both the technical edifice of GIS itself and Critical

GIS. Feminist thinkers had critiqued GIS for a masculinist and positivist epistemology

(linked to its emphasis on quantitative rather than qualitative data), and for its reliance on

disembodied vision (Haraway's "god-trick"). Starting in the early 2000s, feminist

geographers began to make the argument that seeing technology as a social process also

implied the potential to "reconstitute" GIS and quantitative analysis as a tactic for feminist

liberation.[29] Drawing on Haraway's "Cyborg Manifesto," Nadine Schuurman calls this

strategy of engaging with GIS "writing the cyborg."[30] Mei-Po Kwan and Marianna

Pavlovskaya both argue for understanding that any association between GIS and

quantitative methods, masculinist and positivist epistemologies is spatially and historically

contingent, and that, therefore, the "critical agency of GIS users/researchers can play an

important role in reimagining and developing alternative GIS practices."[31] They propose

re-purposing GIS as a tool to "understand the gendered experience of individuals across

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29 Schuurman, Nadine. "Women and Technology in Geography: a Cyborg Manifesto for GIS." *Canadian Geographer / Le Géographe Canadien* 46, no. 3 (September 1, 2002): 261.

30 Ibid.

31 Kwan, Mei-Po. "Feminist Visualization: Re-envisioning GIS as a Method in Feminist Geographic Research." *Annals of the Association of American Geographers* 92, no. 4 (2002): 648.

multiple axes of difference"[32] by re-corporealizing GIS visualizations as embodied and situated, developing new GIS practices to represent gendered spaces, and refocusing GIS on qualitative data-sources and methodologies.

Feminist GIS offers a paucity of concrete examples (among them Kwan's three-dimensional visualizations of the space-time trajectories of women's daily lives). However, its combined proposal to both develop new techniques of doing GIS and re-purpose existing ones helps inspire the methodological flexibility of community mapping. Feminist GIS scholars such as Kwan, Schuurman and Pavlovskaya show how the socially constructed nature of science and technology implies both the liberatory potential for and *necessity* of developing alternative practice which "alters the character of our collective cyborg"[33] and reconstitutes new power relations. At the same time, the project of feminist GIS slides between a broader political critique of masculinist knowledge-production and simply encouraging the presence of woman-gendered bodies within the edifice of GIScience. I turn next to participatory research, which offers an analysis of building collective power grounded in the day-to-day process of knowledge production.

Participatory Research

Participatory research (PR), also known as community-based participatory research (CBPR), developed dually within the fields of public health and environmental

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32 Ibid., 650.

33 Schuurman, "Women and Technology in Geography," 262.

resource management.[34] In contrast to more traditional methodologies within those domains, PR is defined as "research *by and with* a community rather than for or about a community."[35] In a review of sixty public-health CBPR projects, Viswanathan, et alpropose a summary definition of CBPR as "a collaborative research approach that is designed to ensure and establish structures for participation by communities affected by the issue being studied, representatives of organizations, and researchers in all aspects of the research process to improve health and well-being through taking action, including social change." They emphasize 3 central criteria for CBPR design and evaluation:[36]

1. "co-learning about issues of concern;"

2. "sharing of decision-making power" with an understanding that the process of knowledge-production is inherently political and therefore that "decentralization of power in research decision-making is necessary to ensure participation of people who have a stake in the process and products of research;" and

3. "mutual ownership of the products and processes of research."

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34 In general, CBPR is the terminology used in the public health literature, while PR is used in environmental resource management and ecology. While individual CBPR and PR projects and theorists vary widely in their approaches, there is no clear categorization that would differentiate CBPR approahces from PR. Here, when referring to a particular author I use the same terminology as their work.

35 Wulfhorst, J.D., Brian W. Eisenhauer, Stephanie L. Gripne and Johanna M. Ward. "Core Criteria and Assessment of Participatory Research." In *Partnerships for Empowerment: Participatory Research for Community-based Natural Resource Management*, edited by Carl Wilmsen. (London; Sterling, VA: Earthscan, 2008): 23. My emphasis.

36 Viswanathan, Meera, Alice Ammerman, Eugenia Eng, and et al. *Community-based Participatory Research: Assessing the Evidence*. Evidence Report/Technology Assessment. Agency for Healthcare Research and Quality, July 2004, 22-23.

Wulfhorst, et al. writing about the use of PR for natural resource management, add that one key component is a focus on process and inclusion, in which a continual negotiation takes place to intertwine community goals and research goals such that researchers consider accomplishing community goals as part of the goals of scientific inquiry, and vice versa.[37] PR projects include both long and short-term goals: achieving action outcomes which improve people's lives but also building community capacity to engage with future research projects on a more equitable basis. Further, an important part of the reciprocal nature of PR involves ensuring that marginalized groups have a voice within the research process.[38]

PR and CBPR projects vary in their definitions of "community," "participation," and "research." Viswanathan, et aliagive a general definition of community as "a unit of identity, which is a cultural and social entity that can actively engage and influence its members in all aspects of the research process."[39] Within CBPR, communities may be defined geographically, by racial or ethnic characteristics, by shared concerns, by occupation, or otherwise. Regardless of the form it might take, CBPR practitioners see community participation as a necessary pre-condition to the conduct of research. Moreover, although participation can take various forms at various times, a clear goal of

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37 Wulfhorst et al., "Core Criteria and Assessment," 26.

38 Ibid., 35.

39 Viswanathan et al., *CBPR: Assessing the Evidence*, 24-25.

CBPR work is that of "gradually shifting control from researchers to local people."[40]

"Community" remains a touchstone unit, however, because of a political commitment

amongst CBPR practitioners that, for individuals outside the academy, "community holds

the strongest potential for collective power to negotiate the production and use of

knowledge with the institutions and systems that govern the research enterprise."[41] This

foregrounding of collective power is an important part of CBPR which also drives many of

the aspects of community mapping discussed in this chapter.

Little Tennessee Perspectives

Building on the strengths of feminist and participatory GIS as well as participatory

research, Carla Norwood and Gabe Cumming argue for an iterative, participatory

methodology which follows a collaborative research agenda and uses ethnographic

analysis and interviews to guide the production of maps and infographics which can help

bring visibility to community perspectives and concerns. Their methodology developed as

part of a land-use planning project called *Little Tennessee Perspectives*, in Macon County,

western North Carolina. Here and in their work it is referred to as the LTP methodology.[42]

Later in the chapter, I describe how, along with Norwood, Cumming, and others, I added

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40 Ibid., 24.

41 Ibid., 25.

42 Described in detail in Norwood, Carla Michele. "Making Maps That Matter? The Role of Geospatial
    Information in Addressing Rural Landscape Change." Ph.D., Ecology, The University of North Carolina
    at Chapel Hill, 2009.

my own experience with counter-cartography to the LTP methodology in mapping food

and agricultural systems in a rural county in the Piedmont region of North Carolina.

Norwood and Cumming developed the LTP methodology through their work in

Macon County, North Carolina. Located in the Western part of the state, Macon County

faces development pressure from amenity migration. Combined with a prevailing hostility

from long-term residents to land-use planning and government intervention generally,

this has resulted in rapid and unplanned development. As the location of the Coweeta

Long Term Ecological Research site, Macon County has one of the best-studied

ecosystems in the region. The sort of rapid development taking place in the county had

significant consequences both ecologically and on the quality of life of residents. However,

Norwood and Cumming found that residents who raised concerns about the impact of

unmanaged development found their voices marginalized.[43] As ecologists and skilled

cartographers living in the county and concerned about these issues, Norwood and

Cumming began a collaboration with a grassroots community organization, Macon

Tomorrow, with the goal of using maps to engage residents in discussions about planning

and growth.

Norwood and Cumming's LTP methodology is based on a geographically-

bounded definition of community – the residents of a single county. In their process,

community members and partner organizations drive decision-making and participate in

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43 Norwood, Carla Michele, and Gabriel Cumming. "Making Maps That Matter: Situating GIS Within
Community Conversations About Changing Landscapes." *Cartographica* 47, no. 1 (2012): 37.

planning throughout the entire research process (the shared decision-making and mutual ownership of research products which are key components of PR), but don't necessarily participate in all phases of the research itself. Through an iterative feedback process, ethnographic research and collaboration with community partners "sets the agenda" for GIS analysis and mapping. In contrast to participatory GIS, the LTP methodology enables advanced geospatial analysis techniques without requiring a high level of time investment from community members. However, it remains grounded in, accountable and attentive to the lived experience and concerns of community members. Norwood and Cumming's methodology proceeds in six stages:

1. *Project planning* – From the very beginning, a partner organization or group of individual community partners work together with GIS researchers to set the overall agenda for research. Only once agreement is reached between partners and researchers do researchers proceed to seek grant funding or complete institutional review processes for human-subjects research (since doing otherwise would require fixing significant parts of the methodology and research agenda in advance).

2. *Ethnographic research and interview analysis* – Researchers conduct one-on-one semi-structured interviews with a wide sample of community members using a combination of a snowball sample (for which community partners act as gatekeepers) and selective sampling (to ensure that interviewees represent a

diversity of perspectives across the whole community). Interviews are video or audio-taped and transcribed. Using qualitative analysis, researchers identify the most prevalent or frequently cited views and concerns.

3. *Mapping and geospatial analysis* – Researchers gather existing GIS data on the area which might be relevant, experiment with developing maps and other graphics that validate the views and concerns which surfaced in interviews. Researchers also experiment with maps that bring their 'expert' knowledge of available GIS data and the academic literature into conversation with prevalent views and concerns, attempting to "compare or juxtapose trends in ways that might expand the conversation."[44] This stage ideally proceeds contemporaneously with the ethnographic interviews, so that researchers can ask interviewees to respond to their initial findings and draft maps. Regular consultation with the community partner or partners also helps to refine both the interview process and draft visualizations.

4. *Focus groups* – Researchers bring small groups of interview participants together to respond to the draft maps. Maps are projected onto a screen or passed around in paper copy, and focus group participants critique the maps to ensure that they are relevant to local concerns as well as clear and understandable. A meal or small stipend helps compensate community members for focus group participation.

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44 Norwood and Cumming, "Making Maps that Matter," 39.

Besides critiquing the maps, the focus group component of this process offers opportunity for interested residents to become more involved in the research process, and thus helps build community buy-in.

5. *Deliberative meetings* – Several open meetings are held at locations dispersed across the community. Attention is paid also to making sure that locations are chosen which will feel comfortable and welcoming to different groups in the community, to ensure a broad range of participation. At the meetings, a local resident gives a welcome and introduces the research process, researchers present a slideshow of the maps and graphics they have developed, and a short documentary video based on the interviews is shown.[45] Meeting participants then take part in small-group facilitated discussions at which they are asked to share their visions for the future, and ideas for how positive change in the community might take place. Finally, either at the meetings themselves or in a larger follow-up meeting, the small-group results are shared and next steps are identified.

6. *Evaluation and next steps* – Using videotapes from the meetings and post-meeting evaluation forms, researchers and community partners critique the process and further refine maps, graphics and the video. Either in further community meetings or in consultation with the community partner, next steps are identified and a shared action plan is developed.

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45 The LTP process, in fact, involves both GIS researchers/cartographers and video documentarians. I choose not to focus on the video component of the process in this chapter.

Norwood and Cumming argue that, because it combines local knowledges with geospatial analysis, their combination of GIS and participatory research is "uniquely suited to challenging hegemonic constructions of space." It enables research to be rooted in a participatory framework while still using "highly technical analyses and data sources that can contribute specialized data that may be necessary to inform judgments about complex ecological/landscape issues."[46] By grounding quantitative analysis and mapping in ethnographic research, the LTP process empowers participants and can foreground marginalized views. At the same time, it can challenge the boundaries of existing community discourses by bringing quantitative data-sets and academic literature into conversation with lived experience and local knowledges. In fact, one of the challenges for researchers using the LTP methodology is holding in tension the two roles of "participatory researcher" and "expert." Mapping in a way which is grounded in local knowledges while challenging their boundaries, especially for an outsider, requires constant negotiation "between documenting and mapping concerns as they [are] expressed in interviews, and challenging local residents to think more about the long-term consequences of growth in light of their values and concerns."[47]

The LTP methodology was developed specifically to address issues of land-use planning and ecological sustainability. These happen to be two of the problem areas for which GIS technology was originally developed. In their Macon County work, Norwood

46 Norwood, "Making Maps that Matter?" 34.

47 Ibid., 75.

and Cumming attempted to ground highly-technical analysis visualizations techniques (for example, viewshed mapping) with local knowledges. In the context of community mapping projects more generally, the iterative feedback and collaborative agenda-setting LTP methodology suggests one way that map-makers might approach the problem of making maps that are responsive, accountable, and relevant to community partners. Moreover, Norwood and Cumming's work supports the idea that community mapping can help contribute to grassroots organizing. Building on the LTP methodology, community mapping can convene a conversation across a broad spectrum of the community while foregrounding marginalized viewpoints and bringing existing discourses into conversation with academic research, theoretical concerns and quantitative analysis.

Maps, uniquely, can also play the role of broadening the *scale* of community discussions by enabling a collective viewpoint of a community, thus "fostering a conversation that [is] more about 'our landscape' and 'our community' than about 'my property' or 'your property.'"[48] Norwood and Cumming argue that, if conventional GIS presents itself as the view from nowhere, and feminist critical GIS "is grounded in the view from a body,"[49] then the maps they produced in the Little Tennessee Perspectives project can be interpreted as "the collective view from many bodies that constituted a

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48 Norwood and Cumming, "Making Maps that Matter," 46.

49 Kwan, "Feminist Visualization," 649.

previously diffuse constituency."[50] Community mapping proposes the ability of units

larger than the individual, but still grounded in the lived experience of individual bodies,

to legitimately participate in decision-making processes.

Growing Local, Buying Local

The LTP methodology used by Norwood and Cumming in Macon County and

described earlier in this chapter combines quantitative geospatial analysis with local

knowledges to foster community dialogue around issues of land use planning. Norwood

and Cumming however, do not link their community participation methodology to the

critiques of the design and logic of Western state cartography discussed in Chapter 1.

Their approach provides for the creation of GIS visualizations which are grounded in

community concerns and in conversation with lived experience. Because of its focus on

quantitative GIS analysis, it is well-suited to issues of land-use planning and

environmental management – precisely some of those realms for which conventional GIS

techniques were designed. Moving the LTP methodology out of a land-use planning

context requires moving beyond the land-use specific methods of quantitative GIS

analysis and developing other techniques of qualitative and quantitative mapping which

would speak to other areas. Building on Norwood and Cumming's work, I argue for

combining their LTP methodology with insights from counter-cartography about non-

representational mapping and the ability of maps to ask questions rather than make

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50 Norwood and Cumming, "Making Maps that Matter," 46.

statements; and flexibility on the part of map-makers to use a diversity of data sources, map types and aesthetic approaches.

The Growing Local, Buying Local (GLBL) project was an attempt to do just that. GLBL is an on-going long-term community research and action process convened by Carla Norwood, Gabe Cumming and a group of community partners in Warren County, North Carolina. The project was an experiment in applying the LTP methodology to a new context beyond land-use planning issues: local food infrastructure. It also represented an opportunity for Norwood to reconnect with her childhood roots in Warren County. Having encountered Norwood and Cumming's work at a 3Cs-sponsored "Community Cartographies Convergence" in 2008, I applied to join the project as a cartographer in order to gain first-hand experience in their methods. From my first discussions with Norwood and Cumming, it was clear to us that my experience in counter-cartography would be useful in developing new map-making techniques which could take part in the community conversation about potential future food systems which we hoped to build. As the main map-maker on an interdisciplinary team of researchers,[51] I was tasked with developing maps, infographics and visualizations that would speak to local concerns and perspectives while bringing the research being conducted by our team into the conversation.

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51 Membership in the research team varied over the course of the project, but involved graduate students and faculty from the Nicholas School of the Environment, the Fuqua Business School at Duke University and the Anthropology and Geography Departments at the University of North Carolina, Chapel Hill.

The GLBL project started as a way to explore the potential for food, fuel and fiber production to drive economic development in Warren County, North Carolina. In the nineteenth century Warren was one of the richer counties in North Carolina, driven by a strong agricultural sector, locally-based processing infrastructure (from cotton mills and textile manufacturing to crate and box-makers for vegetable packing) and good railroad access. As late as the 1950s, Warren County farmers were exporting their "Ridgeway cantaloupes" to gourmet markets along the Eastern seaboard. However, in the mid-twentieth century, supported by a quota system which guaranteed high prices to farmers, tobacco became the dominant crop grown in Warren County. Today, after the collapse of the tobacco quota system and a general decline in demand for domestic tobacco production, tobacco can no longer support the economic infrastructure of the county. Warren County is designated by the North Carolina Department of Commerce as a Tier I county, or at the highest level of economic distress for counties in the state. Moreover, much of the local and regional processing infrastructure for food crops that was still in place as late as the mid-twentieth Century has shut down or fallen into disrepair. Farmers who have tried to switch back to growing food are faced with a limited ability to market their goods, even in the midst of a strong local and regional demand from individual consumers in the growing Research Triangle Park and institutional buyers such as local university cafeterias.

Our methodology in Warren County research was similar to the LTP methodology described earlier. Research proceeded iteratively: we started with semi-structured documentary interviews with a diverse sample of community members. Using qualitative analysis methods, we then identified key themes across the interviews. I used archival research, targeted interviews with food system participants, academic literature, and GIS analysis to examine empirical and theoretical perspectives on these key themes. I then designed maps which communicated the results of our research while bringing them into conversation with the narratives and analysis gathered in the initial interviews. Throughout this research phase, we worked with a smaller group of community partners to hone research questions and techniques. Where it made sense, I also used collaborative mapping and participatory GIS techniques. I then brought maps and other visuals back to the larger community in public displays and community forums, where along with a documentary video they launched discussions about next steps towards re-building the local agricultural infrastructure. In the fall of 2011, collaborative work teams of researchers and residents formed around three of the major priorities identified by residents at a follow-up meeting, and their work is currently ongoing.

The maps and graphics (and in one case, exhibits) that I produced move beyond the quantitative GIS analysis and visualization envisioned by Norwood and Cumming in their original methodology. I situate the Warren County project as "community mapping" because the insider/outsider dynamics and relationship between 'expert' and local

knowledges were so central to the project structure. However, at least at the beginning of

the project our use of maps was less instrumental and more similar to the counter-

cartographies in Chapter 2. Our goal was to use maps as part of elaborating a common

ground for conversations and visioning across a diverse range of participants. In order to

maintain a balanced, non-hierarchical dialogue between 'expert' knowledges and local

knowledges, I found it necessary to be flexible about my analytical methodologies and

map design, even to the point of what constituted a map. Below, I discuss some of the

visualizations developed in the Warren County project.

Visualizing food futures in Warren County

What does it take to feed Warren County for a year?

> *It's a lot of land in Warren County that's just sitting there and just growing*
> *up. And, we need to be able to utilize it. But because, like I said the shortage*
> *of equipment, the labor, that a lot of people don't want to do it. They feel like*
> *it's cheaper to just go to the grocery store. But, we could provide the food*
> *there.*
>
> – Judith Alston[52]

Judith Alston's optimism about the possibilities for growing food in Warren

County reflects part of the initial inspiration for the GLBL project. Most of the food

consumed in the county (as in the state as a whole) came from elsewhere. Bringing food

dollars back into the county could be a significant source of economic development,

bringing new jobs in farming, food processing, and distribution. At the same time, most

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52 Alston, Judith. "GLBL Interview with Judith Alston." Interview by Gabriel Cumming. Transcript, 2010.

of the large farms in the county were run by white farm families to whom "farming" meant growing commodity soybeans, corn, cotton or tobacco. Growing food in-county was seen by many as limited to small-scale, niche crops, and not sustainable at a larger-scale.

This intransigence on the part of large, white landowners, matched by optimism on the part of small black farmers (as well as the local Forest Service and Agricultural Extension agents) presented a problem to the GLBL team and community partners: how could we open up a space for visioning when the most (financially) successful farmers in the county were unable to see the possibility of alternative forms of agriculture on a large-scale?

In June 2010, as we began conducting initial interviews, I was tasked with conducting research and producing visualizations that would concretize the possibilities of growing all of Warren County's food locally. My goal was not empirically to verify or disprove the claims of Judith and others that "we could provide the food there." Trying to answer that question definitively would require committing to a set of assumptions about what future food consumption and infrastructure might look like – precisely the things we were hoping to engage in a community dialogue over. We turned to mapping in this case in order to bring a third object to the conversation – a set of maps and statistics that could be a point of collective reference in conversations between small and larger farmers, and which might prompt interview participants to broaden their perspectives on what

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agriculture in the county could look like. Warren County's rich soil and mild growing climate made it feasible that a wide variety of crops could be grown in the county. Within the research team, we began to ask ourselves – how much land would it take to sustain Warren County's roughly twenty thousand residents each year? Building off of Carla Norwood and Gabe Cumming's earlier work, how would land use patterns and the aesthetic of the county change if more land was devoted to fruit, vegetable and livestock production?

Our focus was not a final, fixed answer to these questions. We wanted to map out the potential answers – to provide enough detail to start a conversation. Thus rather than seek specific answers about what Warren County residents ate in a year,[53] I combined a United States Department of Agriculture (USDA) nationwide survey of food consumption broken down by age categories[54] with 2009 US Census population estimates for the county, to estimate the total calories consumed in the county in one year. I also used the data to obtain breakdowns of the total number of servings consumed on a daily, weekly and yearly basis in categories corresponding to those on the USDA food pyramid. These composite estimates were combined with the results of a USDA white paper[55] which

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53 We did set in motion partnerships with local grocery stores to begin collecting more detailed purchase data, but that process still hasn't yielded definitive results.

54 USDA Economic Research Service. "ERS/USDA Briefing Room - Diet Quality and Food Consumption: Food and Nutrient Intake Tables," 2008.

55 Buzby, Jean C., Farah Wells Hodan, and Gary Vocke. *Possible Implications for U.S. Agriculture From Adoption of Select Dietary Guidelines*. USDA Economic Research Reports. United States Department of Agriculture, November 2006.

linked servings of food pyramid category foods with specific acreage numbers to yield the

number of acres of various crops which Warren County farmers would have to grow to

provide for the fruit, vegetable, grain and legume consumption of the county in one year. I

mapped these acreage numbers as sized circles to give a visual comparison, and situated

those circles within a large circle representing the total acres of cropland in the county

currently (Illustration 12). Our estimates showed that it would only take a small fraction

of the total cropland in the county to grow enough food to provide for the county. The

graphic was intended to be "kind of like a brainteaser – what are the possibilities?"[56]

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56 Gabe Cumming, comment made at July 15, 2011 focus group meeting. Author's notes.

What does it take to feed Warren County for one year?

It takes a lot of food to sustain Warren County's nearly 20,000 residents. Right now, most of that food comes from out-of-state farms. What would it take to grow enough to feed ourselves, and the rest of the region?

1,247 acres wheat and grains

784 acres beans

715 acres fruit

leafy greens

orange vegetables

other vegetables

starchy vegetables

331 acres vegetables

total cropland in Warren County: 27,912 acres (2007)

19,132 hens
134,548 broilers
330 dairy cows
5,474 turkeys

169 sheep
78 veal calves
987 beef cattle
2,696 hogs

Data from USDA Census of Agriculture, USDA Economic Research Service national average consumption data and US Census population data.
Graphic produced July 2011 by Tim Stallmann for Growing Local, Buying Local

Illustration 11: "What does it take to feed Warren County for one year?" infographic, final version. This was printed to 36 by 36 inches and hung on the wall at public meetings in August, 2011.

How does the process of creating Illustration 12 relate to the combination of participatory research and counter-cartography? First, the space of possibility which it depicts comes directly from the visions of the GLBL community partners and interviewees. Research and statistics were included in order to concretize and visibilize a

marginalized discourse in the county in the face of skepticism from dominant white landowners. Second, both the graphic itself and my own research unfolded through a co-learning process incorporating iterative feedback from community partners and interviewees. In my initial research, I had focused on fruit, vegetable, grain and legume crops to the exclusion of livestock and dairy. I had left out meat and dairy both because incorporating those categories would require significant further research, and because as a vegetarian I personally overlooked the ways in which meat was an essential part of the daily diet of a number of residents. As we engaged residents in discussions around the graphic, they asked questions about livestock, dairy and egg production which then motivated me to conduct further research and arrive at estimates of the number of dairy and meat cows, laying and broiler hens, and other livestock it would take to sustain the county for a year. In the other direction of the co-learning process, showing the graphic helped prompt community members to uncover narratives about how the county *had* historically fed itself, to develop a historical narrative about what had changed and to ask what sorts of infrastructure would be necessary to enable that possibility again. Third and last, community partners took ownership of the "What does it take to feed Warren County for a year?" research and began using it on their own. For example Paul McKenzie, the agricultural extension agent for Warren County, has incorporated it into presentations he gives about agriculture in the county.

Continuing research and co-learning also highlighted the limits of the acreage-based, quantitative approach that I used in that graphic. Linking each serving consumed of a particular crop to a specific fraction of an acre of cropland in the county was useful for envisioning that "growing local" was possible, but the viewpoint embodied in that graphic and the research process was an instrumental, short-term one which ignored the necessity of building a food *cycle* which would be sustainable in the long-term. Without continuing inputs of fertilizer and pesticides from outside the county (and probably even with them), the same acres of land could not grow the same food crops year after year. In order to highlight some of these broader concerns about the food cycle, and in order to link them to the sorts of statistics and economic indicators that would help them to break through the marginalization that discourses of sustainability often face, I designed a second graphic which envisioned a sustainable food cycle in Warren County.

Illustration 14 was both a presentation tool and a framework which guided my own research. It presents a cyclical framework for food systems analysis,[57] flowing from production to distribution through consumption to waste products, the nitrogen from which must then be re-incorporated into the land in order to avoid long-term "metabolic rift."[58] Within the circle, I listed specific ideas for a future Warren County food system, each of which arose from an interview or a discussion with community partners. I took

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57 I was originally introduced to this framework in a Food System Mapping workshop at North Carolina State University's Center for Environmental Farming Systems in the summer of 2010.

58 Foster, John Bellamy. "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology." *American Journal of Sociology* 105, no. 2 (1999): 366–405.

the outside of the circle as a research challenge, seeking out different ways to quantify the

values which might be re-captured by "closing the loop." This graphic too embodies a

process of co-learning, in that it visibilizes specific proposals brought by community

members but also inspired the research team to began asking more specific questions

about waste products and fertilizer inputs in our interview process.
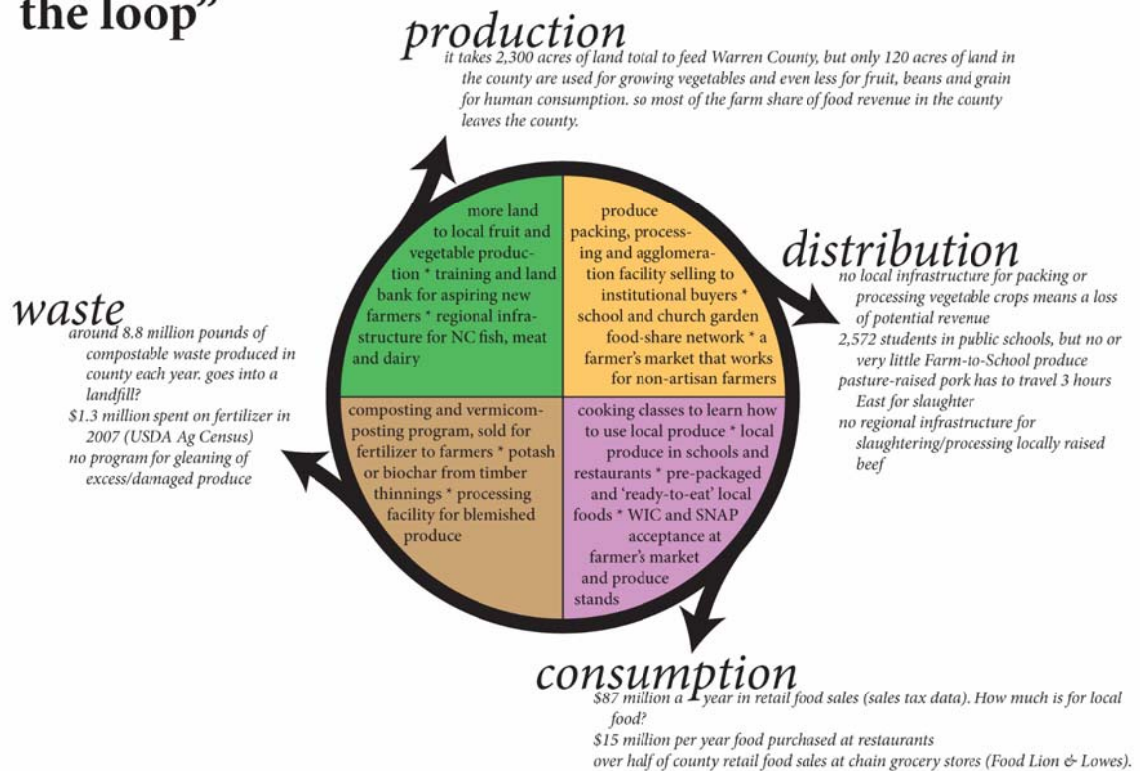
Warren County Food System: "Closing the loop"

production
it takes 2,300 acres of land total to feed Warren County, but only 120 acres of land in the county are used for growing vegetables and even less for fruit, beans and grain for human consumption. so most of the farm share of food revenue in the county leaves the county.

waste
around 8.8 million pounds of compostable waste produced in county each year. goes into a landfill?

$1.3 million spent on fertilizer in 2007 (USDA Ag Census)

no program for gleaning of excess/damaged produce

distribution
no local infrastructure for packing or processing vegetable crops means a loss of potential revenue

2,572 students in public schools, but no or very little Farm-to-School produce

pasture-raised pork has to travel 3 hours East for slaughter

no regional infrastructure for slaughtering/processing locally raised beef

(Circle segments:)

more land to local fruit and vegetable production * training and land bank for aspiring new farmers * regional infrastructure for NC fish, meat and dairy

produce packing, processing and agglomeration facility selling to institutional buyers * school and church garden food-share network * a farmer's market that works for non-artisan farmers

composting and vermicomposting program, sold for fertilizer to farmers * potash or biochar from timber thinnings * processing facility for blemished produce

cooking classes to learn how to use local produce * local produce in schools and restaurants * pre-packaged and 'ready-to-eat' local foods * WIC and SNAP acceptance at farmer's market and produce stands

consumption
$87 million a year in retail food sales (sales tax data). How much is for local food?

$15 million per year food purchased at restaurants

over half of county retail food sales at chain grocery stores (Food Lion & Lowes).

Illustration 12: "Closing the loop" infographic, final version. This was hung alongside the "What does it take to feed Warren County?" graphic at public meetings.

Warren County Agriculture, Past and Present

> *In fact in 1932, they estimated by July they had already shipped thirteen thousand crates of cantaloupes. And during the peak season, in Ridgeway, which is about two miles north of here, in the peak season, they were shipping and loading cantaloupes twenty-four hours a day for about two or three weeks there during the peak time of the season. ... At the time, in the late 30s and early 40s, they were shipping all up and down the eastern seaboard and they were on the menu at the Waldorf Astoria hotel in New York as Ridgeway cantaloupes, that's how they were listed. Right now, there are only about three people that sell them by the road.*
>
> –Lucy Holtzmann[59]

Another theme that emerged in our interviews was the abundance of Warren County's agricultural past. In the histories told by long-time residents, this abundance often came back to the Ridgeway cantaloupe. Ridgeway is located in the western part of the county, just near a major north-south railway corridor. In the first half of the 20th century, Ridgeway was also a major producer of cantaloupes for the entire Eastern seaboard. Ridgeway cantaloupes, considered to be uniquely sweet because of the make-up of Warren County soil, were a luxury item, listed by name on restaurant menus as far away as New York. The cantaloupe story was one we heard over and over again. It stuck in residents minds not just because of pride in the cantaloupes themselves, but because of the way cantaloupe-growing propelled the larger local economy. Even the wooden crates the cantaloupes were grown in were locally-made, and in fact Warren County's crate-making industry persists to this day. Moreover, the cantaloupe industry was one in which farmers

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59 Holtzmann, Lucy. "GLBL Interview with Lucy Holtzmann." Interview by Timothy Stallmann. Transcript, 2010.

were able to build wealth collectively. By organizing agricultural cooperatives, farmers supported each other in marketing and distribution.

Large as the cantaloupe harvest was, it was just one piece of a larger local food infrastructure which produced a wide variety of crops for sale and local consumption. As this economy surfaced through stories in our interviews, I investigated statistical data sources which might help picture the scope of mid-20th century agriculture in Warren County and what changes had taken place. According to the USDA Census of Agriculture, the number of acres of crops grown, total annual harvest, and number of farms in Warren County had decreased drastically between 1950 and 2007.[60] But the total market value of harvested crops, in a slow decline, had only dropped to about half of 1950 levels. In fact, agricultural production in the county was virtually zero in almost all crops, with the exception of tobacco, cotton and soybeans. Both soy production and acreage had actually *increased* since 1950, reflecting a dramatic structural change in the food infrastructure of the county, from a diversity of small farms growing many different crops to a few large (and exclusively white-owned) commodity farmers.[61]

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60 Total farmland in the county was at its peak in 1940 with 238,270. In 2007 only 72,707 acres of farmland remained. The number of farms decreased from 3,162 in 1950 to only 294 in 2007, although the average farm size. Both of these changes are in line with national trends in agricultural consolidation and loss of farmland. Haines, Michael R., and Inter-university Consortium for Political and Social Research. "Historical, Demographic, Economic, and Social Data: The United States, 1790-2002." Inter-university Consortium for Political and Social Research (ICPSR) [distributor], 2010.; and *2007 Census of Agriculture*. USDA, 2009.

61 Two national-level factors helped drive this change: on the one hand a more efficient food distribution infrastructure coupled with low-waged migrant farm labor made it possible for large-scale California farmers to outcompete smaller local producers in most fruit and vegetable production. At the same time, nearly a century of racial bias in federal farm support programs made it much harder for black farmers

When we began planning for the large public meetings that would wrap up the first phase of the GLBL project, I worked to develop a visualization that would make the sheer scale of this transformation understandable to meeting attendees. I had produced a few infographics showing changes in crop acreage and production through bar graphs, but in our focus groups these visualizations seemed dry and didn't open up a dialogue in the ways we were hoping. Here, as earlier, the challenge was not (only) how to communicate information about the past and present status of agriculture in the county. Whether or not meeting attendees learned specific facts about the changes in harvested acreage was secondary to how that information would resonate with the voices of community members and in so doing catalyze a process of transformation. In other words, returning to the theorists which opened this chapter, my design focus needed to shift from the visualization itself (as an artifact of design) to the process and practices through which it came into being and traveled.

In my final design, I attempted to be more attentive to those factors of process and "travel" by building a visualization of changes in Warren County agriculture which would engage with multiple senses beyond the visual (thus allowing for a multiplicity of practices of encounter), and which would also build concrete links between participants and Warren County's agricultural present. Instead of a print infographic, I designed a tabletop museum exhibit. We purchased wooden crates (from the Elberta crate factory in

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to stay afloat and hold onto their land. In North Carolina specifically, the collapse of the tobacco quota system drove a second wave of agricultural consolidation in the 1980s and 1990s as well.

Warrenton), and filled each with a selection of goods representative of the agricultural production of the county in 1950 and 2007. Each basket included produce: the famous Ridgeway cantaloupes, cucumbers, corn, watermelon, tomatoes, green beans, and collard greens; but also packaged goods representative of the agricultural goods grown in the county. I arranged cigarettes, loaves of store-bought sliced bread, bags of cornmeal and pieces of clothing in quantities proportional to the 1950 and 2007 production levels of tobacco, wheat, corn and cotton. One major difficulty that members of the GLBL team (both researchers and community members) had faced was a cognitive disconnect between local foods, which were perceived as a "niche market" and commodity production at the scale which supplied large food manufacturers and supermarkets. I hoped that using recognizable off-the-shelf items would help participants bridge the mental gap between their current food (and fiber) consumption and local agricultural production.

The museum exhibit design was intended to provide for a variety of means of interaction. I arranged the produce baskets so that each type of agricultural product was visible, and designed clear signage and an accompanying data chart so that the display could function purely as a visual, even from a distance. The exhibit was also designed to allow for meeting attendees to touch, smell and hear (by shaking some of the containers). Unfortunately, although the attendees who did engage with the display tended to be

enthusiastic about it, for the most part the table didn't capture attention in the ways I had

hoped it would.

Illustration 13: Detail of Warren County agricultural production exhibit, showing a basket of crops representative of 1950s production. Photo by the author.

In fact, the most 'effective' way the museum exhibit functioned was not as an

infographic communicating information, but as a way to build connections between

meeting attendees, as well as local farmers. Because the produce in the display was

perishable and public meetings were spaced about a week apart, in preparing for each

meeting we had to visit farm stands and grocery stores in the county and purchase the

representative quantities of fruits and vegetables. These shopping trips gave me an

opportunity to talk about the project with produce stand owners (particularly since, in

order for the ratios of quantities to correspond between 1950 and 2007, our shopping list

for the 2007 basket was fairly absurd, calling for a single tomato "as small as possible," five

green beans, a softball-sized cantaloupe, one-sixth of a head of cabbage, etc.). We also

decided to transform the exhibit itself into a raffle prize. At the end of each meeting

several attendees were randomly chosen to win, for example, the cantaloupe and

watermelon production of Warren County for 1950. This drew laughs but also helped

engage more attendees with the display, as it literally traveled home with them.

Illustration 14: Conversations around the "What do you remember?" map. Ridgeway Canteloupe Festival. July 16, 2011.

Conclusions and Questions

As the examples discussed suggest, sometimes *maps* are the least important

outcomes of community map-making. While the GLBL project did include more

traditional cartography, even those maps were more significant for the role they played in

a community-participation process than for their intrinsic design characteristics or

information content. For example, at one stage in the project I designed a three-foot

square basemap of the county with the heading "What do you remember?" The map was

intended to collect memories of local agricultural infrastructure which could be part of a

more detailed cartography of the agricultural past and present. When we displayed it at

the annual Ridgeway cantaloupe festival in 2011, it drew attention from attendees in a way

that no other part of the GLBL project booth did (Illustration 13). However, the individual

conversations which the map inspired between festival attendees and members of the

GLBL team were far more significant to the community dialogue process than the over

fifty agricultural infrastructure data-points attendees marked on the map.

In discussing, counter-cartography, I foregrounded the connections between

aesthetic and theoretical production. Here, in a process informed by participatory

research, both become subservient to the goals of fostering community dialogue and

building collective power. As a cartographer, this shift in focus was a major challenge. I

had hoped that my work in Warren County might result in some richly detailed and

wildly imaginative counter-cartographies, similar to the 3Cs *disOrientations* or the QMU

Counter\mapping. In Warren County, very few of our project team conversations dealt

with questions of non-representational design, or even of cartographic design at all. At

times, this was a disappointment; it also drove me to question my own ways of thinking

about cartography and design more generally.

Throughout this chapter, I have stressed that one of the main goals of community

mapping is a groundedness in, accountability to, and co-learning with a community (and

particularly with marginalized voices within that community). In Norwood and

Cumming's LTP methodology, this groundedness means that community members and

researchers collaboratively set the direction of research, and that visualizations strive to

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foreground community views and concerns. In a sense, however, this methodology

remains trapped in a representational framework of cartography. The 'facts' of the

research project emerge collaboratively through a process of co-learning, but cartographic

visualizations represent those facts by translating them into the visual language of Western

scientific mapping. Ironically, for most of my own involvement in the GLBL project, my

own work stayed within that visual framework as well. This was due not only to my own

theoretical biases but to the fact that the project structure encoded a representational

cartographic process.

Moving forward, I am suggesting that, for community mapping, the co-learning

which is so integral to participatory research needs to be accompanied by process of co-

design. I wonder if in addition to "local knowledges," it might be possible to ground

community mapping in "local aesthetics." Where counter-cartography so often begins

with the visual conventions of Western state cartography and then attempts to move

beyond and undermine them, community mapping could then include a collaborative

design process where 'expert' cartographers and community members learn from each

other to produce maps which resonate with (and push the boundaries of) the

cartographies which are already part of daily practice in the community.

Although it wasn't a conscious practice at the time, in a sense our work in

Northside did just that. An existing cartography of the Northside neighborhood, in the

form of a town-commissioned consultants report on redevelopment, was a major presence

in the minds of community members. In the report, pages of maps had suggested that existing land-uses in the neighborhood (residents' homes) did not correspond to the "highest and best use" of the land, and that new streets should be built (through back yards) in order to increase land values. By adopting the aesthetic of these town maps, our maps were able to function as a sort of situated counter-cartography, intended to undermine and rework not Western state cartography in general but a particular cartographic aesthetic with which community members were painfully familiar.

Integrating methodologies from participatory research and feminist and critical GIS, community mapping is one approach to navigating the relationship between 'expert' cartographers and community partners, with the goal of building collective power. Through iterative feedback and co-learning, both community members and 'experts' take ownership of the products and processes of research. My experiences in Northside and Warren County suggest that community cartography is most rewarding and effective when the entire process of map-making is considered holistically as a part of the organizing process. The Growing Local, Buying Local project also highlights the limitations of maps, and even perhaps of counter-cartography, limitations to which I return briefly in the conclusion. Ultimately, both experiences suggest the need for further research into the specifics of how a process of co-design might allow maps, visualizations, exhibits (and games?) to take shape in a way that is both grounded in and transformative of community aesthetics.

References

Alston, Judith. "GLBL Interview with Judith Alston." Interview by Gabriel Cumming. Transcript, 2010.

Bell, Donna. *Chapel Hill Town Council Business Meeting*. Chapel Hill, NC, 2011.

Buzby, Jean C., Farah Wells Hodan, and Gary Vocke. *Possible Implications for U.S. Agriculture From Adoption of Select Dietary Guidelines*. USDA Economic Research Reports. United States Department of Agriculture, November 2006. http://www.ers.usda.gov/Publications/err31/err31_reportsummary.htm.

Casino, Vincent J. Del, and Stephen P. Hanna. "Beyond the 'Binaries': A Methodological Intervention for Interrogating Maps as Representational Practices." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 34–56.

Crampton, Jeremy W. *Mapping: a Critical Introduction to Cartography and GIS.* Chichester, U.K.; Malden, MA: Wiley-Blackwell, 2010.

Dunn, C. E. "Participatory GIS: a People's GIS?" *Progress in Human Geography* 31, no. 5 (October 1, 2007): 616–637.

Foresman, Timothy W. *The History of Geographic Information Systems: Perspectives from the Pioneers*. Upper Saddle River, NJ: Prentice Hall PTR, 1998.

Foster, John Bellamy. "Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology." *American Journal of Sociology* 105, no. 2 (1999): 366–405.

Haines, Michael R., and Inter-university Consortium for Political and Social Research. "Historical, Demographic, Economic, and Social Data: The United States, 1790-2002." Inter-university Consortium for Political and Social Research (ICPSR) [distributor], 2010. http://dx.doi.org/10.3886/ICPSR02896.v3.

Harris, Leila M., and Helen D. Hazen. "Power of Maps: (Counter) Mapping for Conservation." *ACME: An International E-Journal for Critical Geographies* 4, no. 1 (2005): 99–130.

Holtzmann, Lucy. "GLBL Interview with Lucy Holtzmann." Interview by Timothy Stallmann. Transcript, 2010.

Kitchin, R., and M. Dodge. "Rethinking Maps." *Progress in Human Geography* 31, no. 3 (June 1, 2007): 331–344.

Kwan, Mei-Po. "Feminist Visualization: Re-envisioning GIS as a Method in Feminist Geographic Research." *Annals of the Association of American Geographers* 92, no. 4 (2002): 645–661.

Norwood, Carla Michele, and Gabriel Cumming. "Making Maps That Matter: Situating GIS Within Community Conversations About Changing Landscapes." *Cartographica* 47, no. 1 (2012): 34–51.

Norwood, Carla Michele. "Making Maps That Matter? The Role of Geospatial Information in Addressing Rural Landscape Change." Ph.D., Ecology, The University of North Carolina at Chapel Hill, 2009.

Openshaw, S. "A View on the GIS Crisis in Geography, or, Using GIS to Put Humpty-Dumpty Back Together Again." *Environment and Planning A* 23, no. 5 (May 1, 1991): 621–628.

Pavlovskaya, Marianna. "Theorizing with GIS: a Tool for Critical Geographies?" *Environment and Planning A* 38, no. 11 (2006): 2003–2020.

Peluso, Nancy Lee. "Whose Woods Are These? Counter-mapping Forest Territories in Kalimantan, Indonesia." *Antipode* 27, no. 4 (October 1995): 383–406.

Robinson, Jonnell Allen. "Syracuse Community Geography: Evaluating a New Approach to Public Participation Geographic Information Systems." Ph.D., Geography, The University of North Carolina at Chapel Hill, 2010.

Rundstrom, Robert A. "Mapping, Postmodernism, Indigenous People and the Changing Direction of North American Cartography." *Cartographica* 28, no. 2 (1991): 1–12.

Schlossberg, Marc, and Elliot Shuford. "Delineating 'Public' and 'Participation' in PPGIS." *URISA Journal* 16, no. 2 (2005): 15–26.

Schuurman, Nadine. "Trouble in the Heartland: GIS and Its Critics in the 1990s." *Progress in Human Geography* 24, no. 4 (December 1, 2000): 569–590.

———. "Women and Technology in Geography: a Cyborg Manifesto for GIS." *Canadian Geographer / Le Géographe Canadien* 46, no. 3 (September 1, 2002): 258–265.

Sheppard, Eric. "Automated Geography: What Kind of Geography for What Kind of Society?" *The Professional Geographer* 45, no. 4 (November 1, 1993): 457–460.

———. "Knowledge Production Through Critical GIS: Genealogy and Prospects." *Cartographica: The International Journal for Geographic Information and Geovisualization* 40, no. 4 (January 1, 2005): 5–21.

———. "Sleeping with the Enemy, or Keeping the Conversation Going?" *Environment and Planning A* 27, no. 7 (July 1, 1995): 1026–1028.

Smith, Neil. "History and Philosophy of Geography: Real Wars, Theory Wars." *Progress in Human Geography* 16, no. 2 (June 1, 1992): 257–271.

United States Department of Agriculture (USDA). *2007 Census of Agriculture*. USDA, 2009. http://www.agcensus.usda.gov/index.php.

USDA Economic Research Service. "ERS/USDA Briefing Room - Diet Quality and Food Consumption: Food and Nutrient Intake Tables," 2008. http://www.ers.usda.gov/Briefing/DietQuality/data/foods/.

Viswanathan, Meera, Alice Ammerman, Eugenia Eng, et al. *Community-based Participatory Research: Assessing the Evidence*. Evidence Report/Technology Assessment. Agency for Healthcare Research and Quality, July 2004.

Wulfhorst, J.D., Brian W. Eisenhauer, Stephanie L. Gripne and Johanna M. Ward. "Core Criteria and Assessment of Participatory Research." In *Partnerships for Empowerment: Participatory Research for Community-based Natural Resource Management*, edited by Carl Wilmsen, 23–46. London; Sterling, VA: Earthscan, 2008.

Conclusion

Summary of the thesis

Critical understandings of cartography within the academy first sprung up after the use of maps in World Wars I and II. Early critiques focused on the potential for maps to be inaccurate and manipulative representations. Drawing on the work of Michel Foucault and Jacques Derrida, J.B. Harley was the first scholar to move beyond the representational framework, treating maps as texts whose meaning could be deconstructed through techniques such as "reading between the lines" and "reading for silences." His approach to unpacking meaning in maps was quickly joined by two others: John Pickles' hermeneutics and Denis Wood's semiotics. In addition to a semiotic approach to understanding how meaning is constructed in maps, Denis Wood traced the historical linkages between particular ways of map-making and the modern state as it originated in Western Europe and spread from there through colonialism and imperialism. In summarizing the contributions of critical cartography, the notion of "Western state cartography" becomes a useful simplification. Key features of Western state maps and map-making are as follows: a technical and representational aesthetic; purporting to be objective, value-free, and 'expert'; a state-ist and capitalist viewpoint

(which sees the Earth's surface as covered completely by bounded territorial units at small scales, and individually-owned parcels of private property at large scales); a disembodied "view from above"; and a view of cartography as an empirical science whose goal is the accurate representation of the Earth's surface. Critical cartography emphasizes the ways in which these features are linked with the violence of war, colonialism, and imperialism as well as how they marginalize alternative epistemologies.

Taking into account a critical understanding of the ways map-making so easily plays into state power, a plethora of social movements and community groups have nonetheless initiated experiments in alternative cartographies, with the goals of elaborating common territory and building collective power. Bill Bunge's Detroit Geographical Expedition is one early example, using map-making and other research tools as a tool for neighborhood organizing and to lift up the voices and experiences of mostly black, low-income residents of the neighborhood of Fitzgerald, in Detroit, Michigan. In Madrid, Spain, Precarias a la Deriva use techniques of collective drifting, which they refer to as cartography, to elaborate common territory in a post-Fordist society and answer the question of "where is our strike?" 3Cs: the Counter-Cartographies Collective draws on approaches similar to both the Detroit Geographical Expedition and Precarias, using map-making as a tool to explore commonalities in a heterogeneous community, the University. Their "disorientation" maps posit the simultaneous truth of

multiple conflicting representations of a single territory, and in so doing open up new terrain for struggle.

The idea of using map-making as a tool to build commonality in emerging social movements, present in the work of both 3Cs and Precarias, motivates a conception of counter-cartography as the process by which a group in formation orients themselves, elaborating how they relate to each other (a plane of commonality) and charting a common course of action within that plane. A recent collaboration between 3Cs and students at Queen Mary University (QMU) provided a unique opportunity to experiment with counter-cartographic methods for fostering collaboration. That experience highlighted three aspects of counter-cartography which might be useful to those interested in employing it as a method: non-representational mapping and the potential it opens up for maps to produce collective knowledge (rather than representing the results of collective knowledge-production); the importance of thinking critically about the entire process of mapping, particularly the ways in which maps circulate after their initial production; and ways in which the map production process itself can be structured to encourage a wide range of participation. The QMU *Counter\mapping* experience resonates with other recent counter-cartographies, including: *Iconoclasistas*, *Hackitectura*, AREA Chicago, and the Beehive Collective.

When an existing community wants to use maps to build collective power or accomplish specific political goals, a different set of concerns and tools come into play.

Community mapping draws insights from Participatory Research to suggest ways in which the technical expertise of GIS practitioners and cartographers might be rooted in a community-driven process of co-learning, where academic research goals become intertwined with those of the community. Carla Norwood and Gabriel Cumming's work in Macon County, North Carolina provides one example of how quantitative techniques for GIS land-use analysis can be part of a process of community dialogue and visioning around land planning in a mountain community. My own experience in a later project, *Growing Local, Buying Local* (*GLBL*), suggests that a similar methodology can be employed successfully to a community-based process of co-research and visioning around local food systems. The *GLBL* example also highlights the importance of a processual understanding of cartography, in that the greatest impact and engagement came not from literal maps themselves but from the process of map-making. A recent partnership between 3Cs and Sustaining OurSelves (SOS), a neighborhood-based organizing initiative in Chapel Hill, North Carolina, offers another example of community mapping and the importance of linking map-making with organizing at every stage of the process.

This thesis builds on seven years of my own experience experimenting with the roles cartography can play in social movements, as an undergraduate and then a graduate student at the University of North Carolina at Chapel Hill. In addition to the projects described herein, a number of other cartographies contributed to the conclusions I draw. Among them: mapping gentrification in Durham, North Carolina in partnership with El

Kilombo Intergaláctico; analyzing the impact of the categories and data collection process of the United States Census on low-income communities and people of color for the Southern Coalition for Social Justice; and a series of Community Cartography Convergences organized by 3Cs which aimed to foster dialogue around the possibilities of cartography for a variety of communities in North Carolina. Building on many of the lessons described here, I plan to continue multiplying the possibilities for alternative cartographies in bringing other worlds into being.

Counter-cartography beyond Brian Harley, mapping beyond maps

Audre Lorde's statement that "the master's tools will never dismantle the master's house" has stayed close to mind in writing this thesis. Lorde, speaking in 1979 to an audience of mostly white feminists, argued that academic feminists were applying racist, patriarchal and heterosexist lenses to discussing women's potential collective power. She argued for an interdependency built not on minimizing differences, but on seeing difference as a source of creativity and vitality in movements. Survival, to Lorde, depends on community. Building community means "knowing how to stand alone, unpopular and sometimes reviled, and … make common cause with those others identified as outside the structures in order to define and seek a world in which we can all flourish."[1]

Lorde's idea of *making* common cause founded on difference resonates with the organizing function of counter-cartography which, drawing on Precarias a la Deriva, I

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1   Lorde, Audre. *Sister Outsider: Essays and Speeches.* (Trumansburg, NY: Crossing Press, 1984), 112.

have argued for throughout this work. At the same time, much of alternative cartographic practice could be defined as attempts to use "the master's tools." Even as social movements use counter-cartography to experiment with subverting and undermining hegemonic cartographic representations, the stated motivations behind that effort spring from a body of theory produced largely, if not exclusively, by white men writing from secure positions within the Western academy. Yet counter-cartography and community mapping both *work*, and at their best do so in ways which bring about new solidarities and real transformations, not just "temporarily beat[ing] him at his own game."[2]

The writings of Brian Harley, Denis Wood, John Pickles and others provide a clear and consistent language with which to talk about the power of maps. Those writings and the language they utilize have become canonical touchstones for both theorists and practitioners of counter-cartography in the past twenty years. Within the Counter-Cartographies Collective, as we travel to give presentations and workshops with social movements across the country and around the world, we've almost always started our narrative with first, a melange of Wood and Harley's analyses of the power effects of Western state maps, and second with Denis Wood's call to "map the real world, as many ways as we want to."[3]

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2 Ibid. Although, particularly for community mapping, there is always a tension between building long-term power and winning short-term political gains in ways that undermine the potential for larger-scale solidarity.

3 Wood, Denis, and John Krygier. "C'est Ne Pas Le Monde." In *Rethinking Maps: New Frontiers in Cartographic Theory*, by Martin Dodge, Rob Kitchin, and C. R Perkins, 189–219. (London; New York: Routledge, 2009), 211.

As Lorde points out, "survival is not an academic skill." This suggests that there might be another way to ground my stories about counter and alternative cartographies. There are communities across the world in which the power of maps and the Western cartographic process has been, and is, an issue of survival. Could I have turned to those communities and to their legacies of struggle for the theoretical tools I've needed to unpack the working of Western state cartography and for inspiration in mapping otherwise? After all, as autonomist Marxists argue, doesn't all knowledge come from struggle?[4]

Moving forward, then, the project I would like to undertake is a sort of listening campaign, across time and space. How have communities most impacted by Western map-making talked about maps? What kinds of resistance have they found fruitful? What theoretical tools have they developed? How do different struggles in different times and places speak to each other, and to literature within the academy?

Examples exist to suggest that the attempt would be fruitful. Cristina Dando, for example, has studied the extensive discussions about map-making within the United States movement for women's suffrage from 1900 to 1930, arguing that it represents early work in critical cartography. Woman cartographers in that movement clearly understood the potential of map-making for building power and accomplishing political goals, and moreover developed a number of creative methods of public map-making and map

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4   Roggero, Gigi. *The Production of Living Knowledge: the Crisis of the University and the Transformation of Labor in Europe and North America*. (Philadelphia: Temple University Press, 2011), 5.

distribution, including very early examples of animated maps and the use of "bodily cartography" in pageants.[5] Karen Piper suggests that there might be early examples of critical GIS theory to be found in the arguments made by the British woman's suffrage and anarchist movements in opposition to the global adoption of a single prime meridian (and hence a single time standard based on Greenwich Mean Time) in 1884.[6] More recently, David Turnbull's *Maps are Territories: Science is an Atlas* contains a chapter, written in collaboration with the Yolngu community at Yirrkala that both narrates Yolngu understandings of space-time and spatial representation and critiques the way meaning is produced in Western maps.[7]

In addition to re-writing the stories of counter-cartography to center the voices of those communities most impacted, it is necessary to acknowledge the way in which, depending on context, literal maps and map-making might have serious limitations as tools for liberation. Jan Hutta, for example, describes how he attempted to use a map-making process similar to that of Iconoclasistas (Chapter 2) in his participatory mixed-methods research on the geographies of sexuality and safety in the greater Rio de Janeiro region. In a series of eight workshops in the *Centro* region of the city, the practice of

5   Dando, Christina Elizabeth. "'The Map Proves It': Map Use by the American Woman Suffrage Movement." *Cartographica: The International Journal for Geographic Information and Geovisualization* 45, no. 4 (January 1, 2010): 221–240.

6   Piper, Karen Lynnea. *Cartographic Fictions: Maps, Race, and Identity.* (New Brunswick, N.J.: Rutgers University Press, 2002), 21-40.

7   Turnbull, David, Deakin University. School of Humanities. Open Campus Program, and Helen Watson. *Maps Are Territories, Science Is an Atlas: a Portfolio of Exhibits.* University of Chicago Press ed. (Chicago: University of Chicago Press, 1993), 28-36.

marking up a map of the city with stickers to represent different emotional associations

functioned as an important way to ground discussions, motivate participants to share

stories, and build the workshop space. However, moving to a city in the Baixada

Fluminense region north of Rio, the very presence of a map (even if it was intended as a

starting point for a collective counter-cartography), "seemed to dampen the group's

enthusiasm and dynamic … possessing a strangely uninviting aura." Hutta argues that

part of this had to do with the accessibility of print maps to workshop participants, many

of whom were illiterate. But in a larger sense, he also argues that in the spatial context in

Baixada Fluminense, an area in which there had never been a consistently organized

sovereign state *or* a territorial oppositional movement, there was "no real ground for

subversive appropriations, manipulations and transformations of 'hegemonic maps.'"[8]

Just as my own experiences in Warren County hinted at the importance of situated

cartography (often outside and beyond literal maps), Hutta returns to the function of

maps as ways to "bring together onto a common presentational plane propositions about

territory."[9] He argues that this *commonality* is what really "matters" about mapping. In

much the same way I've returned over and over again to the ways in which maps build

power by building commonality, or of "making common cause." Some of these ways are

particular to physical maps, or to the map-making process. But many of them could be

8   Jutta, Jan Simon. "Mapping Without Maps? Affective Cartography as a Tool for Critical Social Research."
      In *Mapping Urban Space Workshop*. Toronto, 2011.

9   Wood, Denis, John Fels, and John Krygier. *Rethinking the Power of Maps*. (New York: Guilford Press,
      2010), 1-2.

shared by other practices that combine shared affective experiences with a common plane.

In my own work, I have lately been drawn to the potentials of alternative practices –

performance, bodily improvisation and sculpting, poetry, music and noise-making – for

the collective production of knowledge about a common territory. It remains to be seen to

what degree these can be called "cartography," but I am excited about beginning to include

them as part of a larger toolkit, along side the more literal mapping practices I've

described here.

References

Dando, Christina Elizabeth. "'The Map Proves It': Map Use by the American Woman Suffrage Movement." *Cartographica: The International Journal for Geographic Information and Geovisualization* 45, no. 4 (January 1, 2010): 221–240.

Jutta, Jan Simon. "Mapping Without Maps? Affective Cartography as a Tool for Critical Social Research." In *Mapping Urban Space Workshop*. Toronto, 2011.

Lorde, Audre. *Sister Outsider: Essays and Speeches.*Trumansburg, NY: Crossing Press, 1984.

Piper, Karen Lynnea. *Cartographic Fictions: Maps, Race, and Identity.*New Brunswick, N.J.: Rutgers University Press, 2002.

Roggero, Gigi. *The Production of Living Knowledge: the Crisis of the University and the Transformation of Labor in Europe and North America*. Philadelphia: Temple University Press, 2011.

Turnbull, David, Deakin University. School of Humanities. Open Campus Program, and Helen Watson. *Maps Are Territories: Science Is an Atlas: a Portfolio of Exhibits*. University of Chicago Press ed. Chicago: University of Chicago Press, 1993.

Wood, Denis, John Fels, and John Krygier. *Rethinking the Power of Maps*. New York: Guilford Press, 2010.

Wood, Denis, and John Krygier. "C'est Ne Pas Le Monde." In *Rethinking Maps: New Frontiers in Cartographic Theory*, by Martin Dodge, Rob Kitchin, and C. R Perkins, 189–219. London; New York: Routledge, 2009.