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"The map, perhaps the central referent of geography, is, and has been, fundamentally an instrument of power. A map is an abstraction from concrete reality which was designed and motivated by practical (political and military) concerns; it is a way of representing space which facilitates its domination and control."[1]

"Maps are active; they actively construct knowledge, they exercise power and they can be a powerful means of promoting social change."[2]

Maps are efficient modes of communication with a strong hold on people's imaginations. They are usually quotidian functional artifacts that help individuals find their way and comprehend the world.[3] As graphic representations, maps are short-hand for complex processes, conditions, and concepts. They tell convincing stories by appearing objective through the conscious efforts of mapmakers or, on a more basic level, through what's shown or left out of the map. With the use of geolocation in everything from hand-held devices to wind farm turbines, mapping is ubiquitous, authoritative, and taken for granted. The ways we map, however, are inex-

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tricable from violent forms of power: mapping conventions reflect legacies of imperial exploration, resource extraction, colonization, and state control. These strategic activities have required

Map Power in Spatial Abstraction. Maps have a genealogy longer than and instrumental to the international state system. Maps have been "designed and used for centuries for highly strate-

The ways we map are **inextricable from violent forms of power.**

the collection of more precise data and objective scientific procedures, resulting in what seems to be value-neutral "mirrorings" of space rather than interest-laden renderings of the surface of the planet.[4]

This paper considers the role of maps and power dynamics of contemporary mapping in political struggles—specifically, how maps are political and how mapping can be a political act. First, the paper examines the genealogy of *map power*, defined as a way of representing space as an abstraction from concrete reality in order to facilitate its domination and control.[5] Second, the paper argues that while maps reinforce dynamics of coercion and manipulation due to map power, maps can be—and are—used as tools to support social movements for liberation and social justice. This is substantiated through the article's examination of two broad efforts: *map critique as a social justice project*, and *mapping as a method of resistance*. The paper concludes by exploring a number of social and policy issues related to mapping technologies and the geopolitics of representation and by recommending *map literacy* as an educational tool for envisioning and advocating social change.

gic purposes such as planning and executing war, locating valuable resources, collecting taxes, claiming territories, and participating in the creation and recognition of nation-states."[6] Maps represent the world according to strategic interests and are used to dominate how the world is seen. These geopolitics of representation play a crucial role in determining how interests are applied and achieved through concrete earth-bound activities. Most maps that we use today reflect the legacy of colonization, resource appropriation, and state territorialization. The rise of map power in the West was motivated by practical military and geopolitical concerns for mobile instruments with representational force. Spatial knowledge was produced, and the world made knowable through calculations of space for the purposes of making resources visible, legitimizing borders, and imposing a hegemonic view of the world. Space was conceived as a repertoire of points, lines, and areas that delineated territory and exerted state interests with increasingly scientific authority. Yet this geographic knowledge was, and is, not neutral. Map power shows us how the spatial abstraction of the world served strategic interests and statecraft as maps became instruments of the "imagined

community" of the nation-state, working in parallel with such tools as the cadastral census.[7]

In contrast to human communication forms, such as writing and image-making, the hegemonic tradition of mapmaking asserts the transparency of space and its direct correspondence or "mirroring" in maps through progressive scientific technologies and principles. The technological developments in the late twentieth-century have further intensified the perception of maps as objective reality. Since World War II, map power has gained further traction by becoming a so-called value-neutral transcription of the environment through satellite imagery, remote sensing, automated cartography, and geographic information systems (GIS). However, there remain longstanding mapping traditions that offer alternative representations of space and of landscapes, and new mapmaking technologies increasingly allow for the combination of narrative and pleasurable components—such as qualitative data on memories or emotions—with scientific methods and geospatial renderings, resulting in such hybrid practices as geospatial storytelling and multi-sensory ethno-cartography. While map power continues to be dominant in the world, growing tensions between the objective/subjective and scientific/ ideological dimensions of maps and mounting interest in mapmaking as both art and technology underscore the politics of maps and mapping as a political project.

Map Critique as a Social Justice Project. Much conventional mapping tends to reinforce

dynamics of coercion and manipulation. However, maps can be and are used as tools of resistance to support various social movements that seek to counter the status quo and dispute official representations and maps.[8] On a fundamental level, understanding how maps work can be a social justice issue. The field of critical cartography offers a prominent example of criticism applied toward social justice. Over the last several decades, critical cartography has utilized social theory to scrutinize the formal construction of maps and their use as instruments of power. This scholarly work has explored the hidden agendas and ideologies of maps; the ways that formal aspects of maps delineate territories, materialize borders, and legitimatize ownership and control of land, resources, and commodities; and the social processes by which maps articulate identities and subjectivities with boundaries.[9] As a result, these advancements in map criticism have destabilized the alleged value-neutrality and scientific status of maps. All maps involve distortions and erasures due to projection, selection, exaggeration, and/or graphic representation. Maps are also iterative—they build on each other—and involve bricolage —constellations of data and formal elements from text and color to lines and graphics. By revealing the constructive aspects of maps, critical cartographers have not only deconstructed the idea of map objectivity—that maps are "mirrors" of "real" space—but also problematized the kinds of knowledge produced by mapping as a practice within a political field of operations. This interpretive shift toward mapmaking has shown that maps are political and performa-

tive objects in the world with powerful effects.

Some of the most prominent applications of map criticism for social justice have focused on subverting dominant practices of mapmaking, specifically the official cartography of the state. Beyond scholarly textual deconstruction of maps and mapping, there are numerous examples of mapping actions that challenge official maps as social documents of imperial and/or state territorial ambitions, colonialization, and military surveillance. Producing alternative maps to the official version thus functions as a political act: "If the map is a specific set of power-knowledge claims, then not only the state but others could make competing and equally powerful claims."[10] The Galls-Peters Projection is an illustrative case of a map/projection serving as political activism.[11] Named after James Gall and Arno Peters, the projection gained notoriety in the later twentieth century for its geopolitical critique of map design. Peters argued that the Mercator projection, which was historically suited for navigation and had become commonly used in world maps, distorted the picture of the world to the advantage of colonial powers. The Mercator projection inflates the sizes of regions according to their distance from the equator; as a result, underdeveloped countries that lie near the equator are massively minimized, thus appearing to be less significant. Cartographers had long debated the Mercator projection and inappropriate uses of it, but the Peters campaign targeted the Eurocentric ideals and social implications of cartographic conventions—suggesting cartographic imperialism and

racism—and advocated for widespread adoption of an alternative projection that would restore the rightful proportions to poorer, less powerful nations.[12]

Counter-mapping projects provide another notable example of efforts to intervene in spatial politics and critique official maps.[13] Counter-mapping generally refers to a mapmaking process by which communities contest the state's formal maps and make their own maps in order to lay claim to resources and land. Often appropriating official techniques of representation, counter-mapping strategically renders alternative rights and spatial knowledge to be used in legal disputes or for cultural heritage against existing state-run systems of management and control. Indigenous movements have been at the forefront of counter-mapping; Historically numerous artists the ethnocartographies of indigenous atlases, such as the Nunavut Atlas (1992) and Maya Atlas (1997), support alternative mappings of space not represented by state agencies or trade organizations. NGOs and academic researchers have engaged in counter-mapping as a method of working with indigenous communities to resist the encroachments and enclosures of the state and capital. The 1992 UN Rio Summit included community-based mapping as a key international research and planning method for conservation and development in the Global South.[14] While sometimes criticized for "using the master's tool" and resorting to a two-dimensional grid of property rights, counter-mapping recognizes maps as efficient modes of representation and strategically adopts Western mapping practices to serve progressive ends for

marginalized groups.[15] The Aboriginal Mapping Network (1998) exemplifies this experimentation with new mapping technologies as a platform for empirical research, local cultural expression, an indigenous peoples knowledge commons, and transnational advocacy network for social movements.[16]

Mapping as a Method of Resistance.
Maps are a powerful means of promoting social change.[17] The process of making maps can involve critical and applied methodologies that enhance social justice work. Historically, numerous artists and activists have utilized mapping to challenge Western capitalist society and the authority of Western cartography to map and lay claim to the world in terms of territory, resources, and knowledge.[18] These efforts resuscitated maps as a form of communication, replacing the obsession with accuracy and precision with that of dreams and imagination. They sought to reclaim the power of the map to tell spatial stories and point toward other worlds than those rendered by official mapmaking institutions. Today a broadly-defined activist mapping movement challenges the authoritative legacy of Western map power to portray reality as it is. Rather than practice mapping as apolitical, neutral, and scientific, "alternative maps propose a different way of representing the world through transforming the place and function of maps in society. As a result, maps become a means of popular expression, of resistance, and of the re-appropriation of political, social, cultural, or physical territories."[19] This is substantiated by further investigating three discernible types of activist map-

ping practices: mapping as a form of protest and argument, such as radical atlases and geopolitical critique maps; mapping as immersive social commentary, including alternative history trails and collective walks that feature marginalized experiences and local knowledges; and mapping for community education and grassroots local organizing, wherein mapping functions as a form of information sharing and process-based participatory learning.

Maps can serve as argumentative devices for protest. In many cases, the object of critique is not official maps per se but social relations and infrastructures. Mapping can be put to use to expose hidden power relationships and represent complex networks, forming the basis for conversation and action. Bridging art, cartography, geography, and activism, An Atlas of Radical Cartography creatively renders arguments about empire, imprisonment/detention, waste, migration, extraordinary rendition, and surveillance. The contribution of the Institute for Applied Autonomy, entitled "Routes of Least Surveillance," is a map produced from its iSee interactive program for navigation. Developed through tactical media and camera collection data from the Surveillance Camera Players and New York Civil Liberties Union, the iSee project allows users to plot the pathways of least surveillance between any two points in Manhattan. Beyond the atlas format, the Beehive Design Collective offers another exemplary case of mapping to produce radical geopolitical critique with emphasis placed on collaborative graphics and community process. An activist arts collective that creates images—often maps—for use

as education and organizing tools the Beehive recently completed the final image—"The Mesoamérica Resiste"—of its critical trilogy about globalization in the Americas. Nine years in the making, the ambitious graphic illustrates tern histories, marginal voices, and overlooked sites through direct affective experience within the landscape.[22] The documentary oral history project "[murmur]" has organized, mobile phone-accessible tours with urban

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stories of resistance, resilience, and solidarity from Mexico and Colombia. In the form of a double-sided fold-out poster, the image is a map, drawn in old colonial style, that "depicts the modern invasion of megaprojects planned for the region . . . and opens to reveal the view from below, where communities are organizing locally and across borders to defend land and traditions, protect cultural and ecological diversity, and build alternative economies."[20]

Mapping also takes the form of immersive tours that transgress the marking out of space and feature marginalized local stories and social commentary that renew a sense of place and spatial diversity. Alternative history trails utilize mapping to show how the present landscape is informed by the past. Collective walks and guided/self-guided critical tours are popular ways to cultivate new understandings of space through a mix of creative tactile practices and location technologies. They politicize everyday life through a "non-vanguardist approach to knowledge production and social change."[21] The maps used and made through these activities involve utopian and practical pedagogies. Users learn about subal-

annotations in relation to a number of cities, from Toronto to São Paulo, San Jose to Geelong.[23] Users who see the murmur symbol in various spots may call and listen to recorded stories and personal histories about specific geographic locations while engaging in the physical experience of being located where the story took place. These experiential tours re-imagine parts of the city—a sidewalk, parking lot, or building—as spaces of play and civic engagement. The "Sight Lines" project similarly maps Washington, DC as a way of unlearning dominant knowledges and habits by enacting local and decentralized urban experiences.[24] In contrast to Washington as the staging ground of U.S. national politics, "Sight Lines" offers guided routes (in print and online) through layers of DC's local history and infrastructure, including hidden water services, forgotten highway protests, or underground spaces of war.[25]

Other tours explicitly seek to recover prior modes of activism associated with the material urban histories and vernacular landscapes of popular struggles. *A People's Guide to Los Angeles* critically reflects on dominant representations of Los Angeles and offers thematic tours

that foreground First Peoples, environmental justice activism, queer politics and culture, independent media, and radical movements of the 1960s and 70s.[26] Covering over 115 sites across Los Angeles County, the alternative guidebook cultivates new ways of seeing, thinking, and being in Los Angeles that commemorate social conflict in everyday places. On a smaller scale, the Birmingham Civil Rights Heritage Trail concentrates nostalgia for civil rights through several walking tours that interrupt everyday pedestrian spaces with a history of resistance and protest. With the expressed goals of harnessing cultural tourism and "taking history to the streets," the heritage trail carries visitors along themed routes to more than seventy sites throughout Birmingham.27 Innovative signage stationed at these locations combines symbolic cut-outs and icons of peaceful non-violent actions with life-size images, quotes, and lessons that inspire citizens to deliberate on the remains of racial infrastructure. The result is a moving picture of Birmingham where everyday activities and routines became—and might still become—vehicles of protest. These examples enlist mapping as a method of reorganizing the relationship between past and present and of

and social justice involves community education and grassroots-level organizing, wherein mapping functions as a form of open-source information sharing and/or process-based participatory learning. Some of these efforts emphasize the utility of maps for navigation through a politics of non-profit production such as the crowd-funded *Food: An Atlas*, which features numerous food maps including Baltimore food swamps, the American Beershed, taco trucks of east Oakland, and the global almond trade.[28] The international non-profit OpenStreetMap Foundation seeks to develop and distribute free geospatial data for anyone to use and share. Here, enthusiast mappers, GIS professionals, humanitarians, and other community mappers maintain data worldwide about roads, trails, cafes, and other landmarks. and share it through the organization's open data commons.[29] Do-it-yourself cartography and grassroots mapping projects help people spatially illustrate their experiences and struggles, emphasizing the subjective and everyday-applied aspects of mapping over its use as a medium of control.[30] By learning to make their own aerial maps, people can avoid trackers or ventures that channel local knowledge into commercial- or

Mapmaking can equip people with the capacity to act and struggle in a world of confusing complexities.

mobilizing local knowledge and affective experience in order to inspire a more radical politics of place.

A third convergence of mapping

state-controlled data sets. Founded by a group of activists, educators, community organizers, and technologists interested in new methods for par-

ticipatory research, the Public Laboratory for Open Technology and Science supports a do-it-yourself ethos by educating people to be activist cartographers. As part of the Laboratory, the Grassroots Mapping project website exhorts visitors to join the open com-

representation, specifically the historical importance of maps to governance and territorial projects. This theoretical framing challenges International Relations curricula that rely on a hard power versus soft power distinction. The binarism assumes an implicit dif-

Hard power has been reworked; mapping has fundamentally altered military activity and the conduct of war.

munity: "Do you need maps? Are you embroiled in a cartographic dispute? Do you disagree with the official version of your geography?"[31] Mapmaking can equip people with the capacity to act and struggle in a world of socially and spatially confusing complexity. This is central to the mission of the Counter Cartographies Collective ("3Cs"), which has organized university-based cognitive mapping workshops in order to track labor conditions and border policy on campuses, make systemic oppression within and beyond the university visible, and offer participants a way to understand the forces that shape their lives as a knowledge-base for actions of resistance.[32] Mapping serves as a collaborative diagnostic tool that helps individuals and communities discover and analyze patterns, speculate on root causes underlying changes in the environment, reconstitute social bonds, and potentially reclaim space.

Conclusion: Changing Education to Account for Mapping. The notion of map power directs attention to the geopolitics of

ferentiation between ideas/language/images from material reality and tends to split strategies of coercion and persuasion. This foundational dichotomy of IR theory is inadequate to the task of examining how domination plays out through representation. The directive to "map or be mapped" emblematizes how soft power can be coercive (as hard power through other means)—in other words, that maps have representational force.[33] Additionally, what is known as hard power has been reworked continually through mapping instruments and technologies; contemporary information-technology mapping, in particular, has fundamentally altered military activity and the conduct of war. Therefore, a more realistic, useful, and relevant international relations curriculum would focus on technologies, instruments, and practices.[34]

While map conventions and abstractions of space reinforce dynamics of coercion and manipulation, maps can and are used as tools to support social movements, protests, and efforts to foster change. Criticism of official maps and the political uses of maps has served as an important methodology

to enhance social justice work. Moreover, diverse activities and technologies of mapping offer a wide range of resistance methods. Mapping technologies are radically indeterminate. Rather than mapping being viewed as apolitical, neutral, and scientific, maps are being used in social media, community organizing, artistic communications, and popular commentary, especially through web-based political activism and amateur mapping. Because maps have moved beyond representation to information/social media formats and people now interact with maps and engage in mapping activities in a variety of ways, a number of social and policy issues will need to be addressed.

First, the rise of grassroots mapping has fueled antagonisms between spatial science expertise and amateur mapping, technocratic positivism and community participation. *How will conflicting realities be addressed?* The critical claims-making of non-professional mapmakers will continue to increase as mapping technologies become further embedded in accessible online mapping tools. Second, mapping tools have played a demonstrable role in efforts to organize independently, such as in the transnational Occupy movement or the more recent, multi-sited "Black Lives Matter" demonstrations. Alternative mapping technologies parse and confront "reform from above" through potential networks of localized and self-managed interventions oriented toward grassroots direct action. Students of IR must learn to ask, *what will be the long-term effect of this ability to better mobilize groups of resistance on traditional political parties, trade unions, and governance more generally?* Third, intensified corporate aggregation of spatial data has raised regulatory concerns and social distress over privacy and access, the pirating of populist knowledge for corporate purposes, and the effectiveness of "participation" when linked to private profits rather than open-source mapping and data sharing.[35] While community participation in mapping and geographic information systems can lead to citizen empowerment and a knowledge commons, *how democratic is "participatory GIS" if people rely on commercial datasets, platforms, and technical capabilities rather than social and political analysis and more qualitative, humanistic, and diverse communications?* This is particularly important in the international context of uneven development, in terms of unequal access to digital data and inadequate opportunities to develop and engage with open-source mapping technologies.

To respond to these challenges effectively and democratically, "map literacy" should be cultivated within IR programs. Map-reading and map-making involve interdisciplinary—and increasingly multi-sensory—exchanges of data, ideas, arguments, and stories across scales and diverse audiences. Mapping has already become a key strategy for analyzing and communicating issues in public health, urban planning, environmental justice and human rights, to name but a few arenas. It is thus crucial for IR curricula to foster policy perspectives on maps and map technologies and develop applied knowledge of mapping as an impactful visualization tool— that is, maps not as mere "reality" but as instruments for formulating policy, envisioning the world differently, and advocating for social change.

NOTES

1 Yves Lacoste, "An Illustration of Geographical Warfare: Bombing the Dikes on the Red River, North Vietnam," *Antipode* 5 (1973): 1.

2 Jeremy W. Crampton and John Krygier, "An Introduction to Critical Cartography," *ACME: An International E-Journal for Critical Geographies*, vol. 4, no. 1 (2006): 15.

3 Sébastien Caquard and Claire Dormann, "Humorous Maps: Explorations of an Alternative Cartography," *Cartography and Geographic Information Science*, vol. 35, no. 1 (2008): 51.

4 Cacquard and Dormann, "Humorous Maps," 51.

5 Lacoste, "An Illustration of Geographical Warfare," 1.

6 Cacquard and Dormann, "Humorous Maps," 51. This section begins by focusing on maps in a Western exploratory and imperial context; however, the genealogy of maps extends much further, such as early cave paintings of spiritual landscapes or maps of holy cities and cosmologies.

7 Benedict Anderson, *Imagined Communities* (London and New York: Verso, 1991), 163-185.

8 Denis Wood, "Map Art," *Cartographic Perspectives*, no. 53 (2006): 5-14.

9 John Pickles, *A History of Spaces: Cartographic Reason, Mapping and the Geo-coded World* (London and New York: Routledge, 2004), 3-19. Also see: David Pinder, "Cartographies Unbound," *cultural geographies*, vol. 14, no. 3 (2007): 453-462; J.B. Harley, *The New Nature of Maps: Essays in the History of Cartography*, ed. Paul Laxton (Baltimore: Johns Hopkins University Press, 2002); Denis Wood and John Krygier, *"Critical Cartography,"* 2009, Internet, http://www.deniswood.net/content/papers/elsevier/critical_cartography.pdf (accessed January 28, 2015); Chris Perkins, "Cartography—Cultures of Mapping: Power in Practice," *Progress in Human Geography*, vol. 28, no. (2004): 381-391.

10 Crampton and Krygier, "An Introduction to Critical Cartography," 12.

11 J.B. Harley, "Deconstructing the Map," *Cartographica*, vol. 26, no. 2 (1989): 1-20; J.B. Harley, "Can There Be a Cartographic Ethics?" *Cartographic Perspectives*, no. 10 (1991): 9-16; Arno Peters, *New Cartography* (New York: Friendship Press, 1984); Arthur H. Robinson, "Arno Peters and His New Cartography," *The American Cartographer*, vol. 12, no. 2 (1985): 103-111. The Peters projection controversy was revisited and dramatized in the television series *West Wing*, "What are we changing maps?" https://www.youtube.com/watch?v=eLqC3FNNOaI.

12 In the Mercator projection, Greenland appears to be larger than Africa, when Africa is actually fourteen times greater than Greenland. On the Galls-Peters's projection, areas of equal size on the globe are also equally sized on the map. For more on the politics, reception, and controversy of the Peters projection, see: Jeremy Crampton, "Cartography's Defining Moment: The Peters Project Controversy, 1974-1990," *Cartographica*, vol. 31, no. 4 (1994): 16-32.

13 Nancy Lee Peluso, "Whose Woods Are These? Counter-mapping Forest Territories in Kalimantan, Indonesia," *Antipode*, vol. 27, no. 4 (1995): 383-406.

14 Denis Wood, "Counter-mapping and the Death of Cartography," in *Rethinking the Power of Maps* (New York: Guilford Press, 2010) 111-155; Jay T. Johnson, Renee Pualani Louis, and Albertus Hadi Pramono, "Facing the Future: Encouraging Critical Cartographic Literacies in Indigenous Communities," *ACME: An International E-Journal for Critical Geographies*, vol. 4, no. 1 (2006): 80-98.

15 Rhiannon Firth, "Critical Cartography as Anarchist Pedagogy? Ideas for Praxis Inspired by the 56a Infoshop Map Archive," *Interface: A Journal For and About Social Movements*, vol. 6, no. 1 (2014): 159.

16 Aboriginal Mapping Network, http://native-maps.org/taxonomy/term/21?page=1 (accessed January 28, 2015).

17 Crampton and Krygier, "An Introduction to Critical Cartography," 15.

18 Denis Wood and John Krygier, "Critical Cartography," 2009, Internet, http://www.deniswood.net/content/papers/elsevier/critical_cartography.pdf (accessed January 28, 2015); Jeremy W. Crampton, "Cartography: Performative, Participatory, Political," *Progress in Human Geography*, vol. 33, no. 6 (2009): 840-848. Throughout the twentieth century, Surrealists, Situationists, earth artists, and pop artists, for example, have engaged in subversive forms of mapping.

19 Cacquard and Dormann, "Humorous Maps," 55.

20 Beehive Design Collective, http://beehivecollective.org/graphics-projects/mesoamerica-resiste/ (accessed January 28, 2015).

21 Firth, "Critical Cartography as Anarchist Pedagogy?" 158.

22 Firth, 168; Elizabeth Ellsworth, *Places of Learning: Media, Architecture, Pedagogy* (New York and London: Routledge, 2005); David Pinder, "Subverting Cartography: The Situationists and Maps of the City," *Environment and Planning* A, vol. 28, no. 3 (1996): 405-427.

23 "[murmur]," http://sanjose.murmur.info/about.php and http://sanjose.murmur.info/ (accessed January 28, 2015).

24 Firth, "Critical Cartography as Anarchist Pedagogy?" 160.

25 Lize Mogel, "Sight Lines," http://www.sightlinesdc.com/ (accessed January 28, 2015). "Sight Lines" is part of "Suspension of Disbelief," curated by Steve Rowell and commissioned by the DC Commission on the Arts and Humanities' 5x5 Temporary Public Art Project.

26 Laura Pulido, Laura Barraclough, and Wendy Cheng, *A People's Guide to Los Angeles* (Berkeley and Los Angeles: University of California Press, 2012).

27 These sites are listed on the National Register of Historic Places, and stretch from Kelly Ingram Park and the 16th Street Baptist Church in the downtown Civil Rights District, to Erskine Hawkins Park in Ensley and the nearby derelict intersection that was at one time the bustling African American music and culture area known as Tuxedo Junction. Together they show the unforgettable role that Birmingham played in the American Civil Rights Movement of the 1950s and 1960s. The routes include: March to Government to Protest Bull Connor at City Hall; the Retail District with Lunch Counter Sit-ins by Activists; March to Education for Desegregation of Schools; the Church Movement and Reverend Fred Shuttlesworth.

28 Cheryl Angelina Koehler, "Mapping Manna: A Quest of Its Own Making," *Edible East Bay*, August 26, 2013, Internet, http://edibleeastbay.com/online-magazine/spring-2013/a-crowd-sourced-food-atlas/ (accessed January 28, 2015).

29 OpenStreetMap project, http://www.open-streetmap.org/about and http://www.osmfoundation.org/wiki/Main_Page (accessed January 28, 2015).

30 Jeffrey Warren, "What is Grassroots Mapping?" Internet, http://grassrootsmapping.org/about/ (accessed January 28, 2015).

31 Grassroots Mapping, http://grassrootsmapping.org/ (accessed January 28, 2015).

32 3Cs Counter-Cartographies Collective, Internet, http://www.countercartographies.org/ (accessed January 28, 2015). Also see: Firth, "Critical Cartography as Anarchist Pedagogy?" 165

33 Joe Bryan, "Map or Be Mapped: Land, race, and Property in Eastern Nicaragua (PhD Diss., University of California-Berkeley, 2007). Janice Bially Mattern has explored the notion of "representational force" and the nonphysical coercive aspects of "soft power" in terms of language and narrative; see: Janice Bially Mattern, "Why 'Soft Power' Isn't So Soft: Representational Force and the Sociolinguistic Construction of Attraction in World Politics," *Millennium: Journal of International Studies*, vol. 33, no. 3 (2005): 583-612. In contrast to this important sociolinguistic intervention to IR theory, my theoretical framework of "map power" and critique of the hard/soft power dualism emphasizes the materiality of discourse, the performativity of maps as powerful geopolitical representations, and the technologies of power.

34 Ernest J. Wilson, III suggests re-focusing IR training on instruments and technologies of power in his article "Hard Power, Soft Power, Smart Power," *Annals of the American Academy of Political and Social Science*, 616 (2008): 110-124. However, my formulation of "map power" involves a more radical shift in the theorizing of both power and technology and a practical rejection of the hard/soft, material/conceptual dualities of IR theory.

35 A related issue is the corporate outsourcing of baseline map production to an unremunerated public forum and the often "fine line" between participatory GIS/mapping and data mining.