CITIZEN CARTOGRAPHIES AND THE SHIFTING POLITICS OF EXPERTISE

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Abstract

Critical geographers and others have documented the presence of citizen cartographies for decades, in mapping efforts undertaken by ordinary people, often within political activism, citizen science, and community improvement efforts. Most recently, researchers studying citizen cartographies have raised questions about the disciplinary and societal significance of new interactive online mapping services (such as Google's MyMaps service) and citizen-led spatial data collection and mapping efforts (such as the UK-based Open Street Map), yet there is still relatively little research investigating these phenomena. This paper discusses the new citizen cartographies that are emerging from these new techniques and technologies, and positions these web-based citizen cartographies in relation to the GIS-based citizen cartographies that preceded them, with particular attention to questions of access, power, and authority. I develop this discussion with evidence gathered from focus group discussions and semi-structured interviews conducted as part of an ongoing participatory GIS project with community development organizations in an inner-city Chicago neighborhood. Drawing on the ways in which participants in this project compare web-based cartographies to the cartographies they have advanced through their use of conventional GIS software, I argue that there are key differences in the knowledge politics that are being advanced through each. By 'knowledge politics', I refer to the ways in which different actors and institutions present their knowledge and assert the authority and legitimacy of these claims. For example, existing research has well-documented how the use of maps may be an explicit strategy in which citizen cartographers seek to strengthen their claims by invoking the discursive authority of cartographic representations. This paper builds from such characterizations to suggest that understanding the social and political significance of web-based citizen cartographies requires a more complex conceptualization of what these politics of expertise entail, and how they are produced.

Introduction

Critical geographers and others have documented the presence of citizen cartographies for decades, in mapping efforts undertaken by ordinary people, often within political activism, citizen science, and community improvement efforts. These discussions have focused on non-digital citizen cartographies, as well as those rendered through use of GIS and other spatial technologies. Most recently, researchers studying citizen cartographies have raised questions about the disciplinary and societal significance of new interactive online mapping services (such

as Google's MyMaps service) and citizen-led spatial data collection and mapping efforts (such as the UK-based Open Street Map), yet there is still relatively little research investigating these phenomena. This paper examines the new citizen cartographies that are emerging from these new techniques and technologies. I argue that we are in the midst of a transition from a period where conventional GIS-dominated digital citizen cartographies, to a moment in which these cartographies may be online, interactive, and do not require GIS hardware, software, or skills, but may rely upon mapping APIs, geo-tags, mash-ups, and more. I contribute to critical cartographers' emergent research on these phenomena by positioning web-based citizen cartographies in relation to the GIS-based citizen cartographies that preceded them, with particular attention to questions of access, power, and authority.

Web-based citizen cartographies are producing a politics of expertise that is significantly different than those that emerged from most GIS-based citizen cartographies. By the 'politics of expertise', I refer to the ways in which different actors and institutions present their knowledge and assert the authority and legitimacy of these claims. For example, existing research has well-documented how the use of maps may be an explicit strategy in which citizen cartographers seek to strengthen their claims by invoking the discursive authority of cartographic representations. This paper builds from such characterizations to suggest that understanding the social and political significance of web-based citizen cartographies requires a more complex conceptualization of what these politics of expertise entail, and how they are produced.

I develop this discussion with evidence gathered during a long-term participatory research with community development organizations in an inner-city Chicago neighborhood, in a project studying the socio-political practices and impacts of the cartographies and other forms of spatial knowledge produced by staff and residents of this community. Evidence from this project is particularly salient for studying contemporary transitions in citizen cartographies, because it began at what could arguably be called the height of GIS-based citizen cartographies, and has continued well into the emergence and growing popularity of web-based cartographies. My evidence suggests that web-based citizen cartographies are positioned somewhat differently than GIS-based citizen cartographies with respect to a number of axes of 'knowledge politics' that are produced through these cartographies. It is important to recognize that my discussion is rooted in the citizen cartographies of community-based organizations and community-development organizations that seek to influence urban social, political, and economic geographies through direct engagement with local governmental actors. A different range of politics are possible in these negotiations 'from within' than for citizen cartographers who are working from more radical positions.

Early debates about web-based citizen cartographies

Over the past five or more years, we have seen a rapid emergence of new web-based mapping technologies, increasing presence of user-generated geographic content circulating on the web, and explosive growth in the use of online mapping tools by citizens. Geographers and other scholars are still framing key research questions, but in particular, this emerging agenda includes several calls to examine the implications of these shifts for norms and practices in cartography; for the political roles and power of citizens; and for the societal roles imagined for and created

by these citizen cartographies (Elwood, 2008; Tulloch, 2008; Crampton, 2009). Articulated by Turner (2007) as 'neogeography', a great deal of emphasis is being placed on the newness of the phenomenon and on its capacity to facilitate new public cartographies. In particular, several scholars suggest that an opening of cartography is at work through these new online spatial media, strengthening the ability of a lay public to create and disseminate their own maps and re-working notions of cartography as a specialized set of skills and conventions (Taylor and Caquard, 2006; Goodchild, 2007; Kitchin and Dodge, 2007; Sui, 2008; Crampton 2009). Other scholars note that online spatial media, in part because of their capacity to shift access to technologies for cartographic representation, have the potential to transform agency, authority, and authorship in the cartographies that emerge (Goodchild, 2007; Budhathoki et al., 2008; Crampton, 2009).

In these claims of newness, or of a paradigmatic shift in cartography, it is important not to overstate the case for a radical break from what came before. As Crampton and Krygier (2005) and others have argued, citizen cartographies – those cartographic projects advanced through the work of individuals without specialized training or professional recognition as cartographers – have a longstanding presence around the world. The citizen cartographies being produced with these new interactive spatial media are built upon this longer trajectory of grassroots mapping activities. As well, critical cartography and critical GIS research offer a rich range of propositions for theorizing these emerging practices. If we are to understand the social and political implications of these web-based spatial media, we must position the citizen cartographies they are used to produce amidst earlier citizen cartographies, to begin to articulate precisely what is new or altered in this arena.

Critical cartography and critical GIS suggest that the societal implications of geographic and cartographic information technologies accrue from the negotiation of power and knowledge in maps, spatial data, and digital databases; the institutions, policies and norms that are part of their creation and maintenance; and the claims to authority in which these resources are implicated (Crampton and Krygier, 2005; Sheppard, 2006). From these existing literatures, we can glean several propositions about how grassroots cartographers have negotiated knowledge politics through their use of maps and mapping technologies. "Countermapping" is one such approach, understood as the efforts of less powerful actors to present alternative narratives or accounts through their own maps. Countermapping often involves less powerful actors presenting their own information, to contradict hegemonic accounts, or providing their own representations and interpretations of 'official' data and maps produced by more powerful actors (Harley, 1988; Rochealeau et al., 1995; Sparke, 1998). As well, critical cartography and GIS research suggests that grassroots cartographers tend to rely upon maps as what Del Casino and Hanna (2005) term 'representational practice'. That is, maps are not static artifacts whose meaning is definitively transferred from map maker to map reader, but rather are mutable representations that may be interpreted, reinterpreted and interpreted again. Drawing on this notion, Elwood (2006) has shown how grassroots groups create flexible cartographic narratives with their maps, as they seek to position these narratives as influential in the politics of urban development. Finally, this literature has well documented the way in which grassroots cartographers intentionally invoke the 'expert power' and 'truth power' of maps and spatial technologies, as they seek to position their knowledge as authoritative and position themselves as influential actors. These actors recognize the predominance of cartographic and technicist rationalities in the institutions they

negotiate with, and the ensuing greater weight that these institutions grant to claims that are advanced through maps and through the use of digital technologies (McCann 2008, McLafferty 2002, Ward 2009, Elwood 2002, 2006).

At the time of writing, I know of no empirically-grounded investigation of how or whether citizen cartographers using web-based spatial media rely upon these formulations in their knowledge politics. Yet as I will show below, some experienced citizen cartographers identify key differences between these new media and conventional GIS-based cartographies. They raise a number of concerns about how data, cartographic representations, and claims to expertise or authority are mediated in this new arena. These concerns about web-based cartographies by citizen cartographers who have previously used GIS are instructive in illuminating precisely how the social, political, and technological negotiation of power may be different in this latest wave of citizen cartography, and to whose advantage and disadvantage.

Why not "GoogleMaps"? Citizen cartographers concerns about the knowledge politics of web-based mapping

The Humboldt Park Community GIS project (2003-2010) is a long term research, teaching, and community outreach project focused on developing sustainable GIS/mapping capabilities in under-resourced community organizations, and understanding how these groups use GIS-based spatial data and maps to influence the politics and practices of urban neighborhood redevelopment. Working with two community based organizations in Chicago's Humboldt Park organization, this project has supported staff and residents' efforts to obtain appropriate spatial data from local, regional and national government sources, develop their own spatial data from the experiential knowledge of residents, and learn to use GIS for their own mapping and analysis. As well, the project has studied how the two organizations have used their data and maps to influence the processes and politics of urban development in their community.

In writing and speaking about this project since the explosion of web-based spatial media began around 2005, I am consistently asked why the Humboldt Park Community GIS Project does not rely upon these technologies, particularly given the resource intensive nature of GIS, and the difficulty that under-resourced community organizations have in sustaining their GIS capabilities. The simple answer to this question is that the participating community groups have made a distinct decision not to use web-based mapping technologies, insisting that they wish to continue using conventional GIS software to do their work. In a 2008 focus group discussion with staff and residents from both organizations, I asked participants to explain this decision. Their responses provide a rich opportunity to consider the shifting politics that are part of the transition from GIS-based citizen cartographies to web-based citizen cartographies, and their concomitant openings and closings.

Participants in the Humboldt Park Community GIS Project raised a number of concerns when they argued against using a freely available web-based mapping software to create and share the maps they were producing as part of their community organizing and community development activities. They wondered whether the use of online mapping platforms provided by private corporations might mean that they no longer 'owned' their maps or the information they had

included in them. Several were concerned about storing their information remotely, wondering how Google or Microsoft might use these data, arguing that the community was better able to control information stored on their own hardware. But further, these community GIS users noted that they wished to continue using the same technology as the more powerful local government officials with whom they were negotiating. They noted that part of their reason for using GIS was predicated on its valorized position as an 'expert technology' in planning and governance. They argue that employing the same technology as more privileged actors in these arenas puts them on a more level playing field, raising the likelihood that they and their arguments will be recognized and given greater weight. And finally, several participants objected to the uniformity of the visual representations they could produce with online mapping media. One participant said, "All the maps look the same. Everybody knows you made it with GoogleMaps, and anybody can do that." This comment suggests that part of what these citizen cartographers hope to do in their cartographic efforts is leverage a certain politics of expertise that involves differentiating their cartographic labors from others – again attempting to gain advantage by demonstrating their 'insiderness' to designated expert tools and techniques.

But I would argue that these concerns expressed by the Humboldt Park Community GIS participants are not in fact centrally about a shift in technologies through which these cartographies are produced. Rather, they respond to shifts in the ways that assemblages of technology, information, and geovisualizations are and might be used to negotiate authority, influence, and knowledge claims. In part, both groups have used GIS as platform for seeking influence by using the technicist and cartographic rationalities that circulate around GIS and GIS-based spatial knowledge. Some of their concerns about web-based mapping tools center on the ways in which these knowledge politics cannot be cultivated in exactly the same manner. For instance, some of the comments above imply that to use a more readily accessible spatial technology undercuts their effort to gain advantage by showing themselves to be more knowledgeable than other actors.

Of course there is tremendous diversity in the politics advanced through citizen cartographies, and not all grassroots groups that use GIS or other spatial technologies engage in the sort of 'expert politics' I profile here. I would argue that these strategies are particularly likely to arise within the cartographies of grassroots groups that work at least in part 'from within' – those groups that are negotiating directly with more powerful actors or are seeking transformation through participatory governance initiatives. As has been suggested by social movement researchers and others for decades, these grassroots engagements with more powerful actors tend to be articulated around hegemonic knowledge, priorities, existing inequalities (Piven and Cloward, 1979).

So what do these concerns suggest about the differences between the knowledge politics that may be practiced through GIS-based citizen cartographies and those that are part of citizen cartographies fostered through interactive web-based spatial media? The Humboldt Park GIS users' concerns point to the way in which the artifacts and discourses that have been used in the past to invoke authority and expertise occupy a somewhat altered position in the world of web-based cartographies. If cartographies may be practiced by a wider range of actors, without the need for specialized technologies or knowledge, they no longer play the same role in creating an 'insider-outsider' politics of expertise that a marginalized group might use to gain advantage.

The comments of the Humboldt Park Community GIS participants suggest they have some investment in maintaining the boundaries around which these politics are advanced, because they have developed a sophisticated set of strategies for working toward some degree of greater authority and influence in the face of these barriers.

Their concerns are focused, at one level, on the ways in which the characteristics and capabilities of these new spatial media fit differently within the politics of expertise that they have been advancing to date through their use of conventional GIS software. But more fundamentally, these concerns are rooted in the openings and closing of the political opportunity structure in which they are situated, and in the legacies of surveillance, exclusion, and exploitation that they have experienced. The concerns expressed by my Humboldt Park partners about interactive web-based spatial media echo the concerns of grassroots GIS user and citizen cartographers I have worked with in multiple cities over the past decade. Citing past experiences in interacting with more powerful public and private sector actors, they worry about surveillance by more powerful actors; and they are concerned about locally-collected data being extracted by more powerful actors for their own use, to the disadvantage of the community. They recognize that in contexts of unequal access to information, spatial data and cartographic representation are a source of influence and authority, but only if they can secure their own access and control or restrict the access of others. As one community participant put it, "If you have information like we do (and we try to dig out as much information as we can), you're influencing things… That's ultimately what is the biggest deal, is us having more information than them." This political economy of information quite often motivates against the openness of information access and exchange that is envisioned in the more optimistic literature about web-based citizen cartographies.

I would argue that these concerns are rooted as much in past and present conditions of unequal power relations, as they are in the new cartographic capabilities of these web-based spatial media. In the moves from pre-GIS citizen cartographies to GIS-based cartographies to web-based mapping platforms, the techniques and technologies employed in these representational practices have shifted. But the underlying inequalities that drive the concerns of some citizen cartographers remain unchanged. With this in mind, I would echo Crutcher and Zook's (in press) call for research that documents the extent to which these web-based spatial media may re-inscribe many of the existing inequalities of the co-called digital divide.

Conclusion

It goes without saying that the geoweb opens the door for unprecedented numbers of people to make and share their own maps. Important questions are being asked about the implications of this development, ranging from what it means for the field of cartography, to what it means for citizen cartographers, citizen science, the digital divide, and more. My discussion of this phenomenon is undergirded by the assumption that the social and political impacts of these new technologies and practices are wrought in large part through the knowledge claims they are used to advance, and through the strategies that citizen cartographers use to advance their influence and cast their knowledge claims as authoritative. I suggest here that web mapping platforms lend themselves to a different knowledge politics than some citizen cartographers have cultivated through their use of conventional GIS.

The grassroots groups I have worked with most recently are loathe to give up their existing GIS-based knowledge politics and move wholesale into this new arena, a position I expect would be echoed by other grassroots groups that work for change 'from within'. In political contexts where these actors are frequently marginalized, their efforts to cultivate influence by performing expertise or limiting access to their spatial data and maps is, on one hand, completely understandable. But this approach reinforces some of the very rationalities that undergird exclusionary knowledge politics, to the particular disadvantage of other grassroots groups that may be even more marginalized. Such a strategy stands to worsen the already well-documented competitive environment that pits grassroots groups against one another in grappling for scarce resources (Elwood and Leitner 2003; Martin 2004).

As citizen cartographers sail these contradictory waters, we must continue to investigate the new dimensions of the knowledge politics they advance through the geoweb. I would anticipate that many may seek to complement their existing GIS-based approaches with web-based practices that build new forms of knowledge politics. In particular, I suspect some will rely on the interactive capabilities of these new platforms, and seek to collect user-generated content from their constituents. For grassroots groups operating within collaborative governance schemes, a key way in which they demonstrate their legitimacy is by showing themselves to be robustly 'representative' of constituents' needs, concerns, and knowledge. It would seem that the capacity to use these interactive spatial media to collect what Goodchild (2007) terms 'volunteered geographic information' could allow these groups to enhance this strategy and potentially expand the volume and diversity of the locally-contributed information they can bring to bear upon their efforts. Nonetheless, I would argue that the key consideration remains how these emerging citizen cartographies influence a range of digital divides.

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