

New lines?: Enacting a social history of GIS

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Abstract: In the twenty years that have passed since the fabled Friday Harbor meetings of November 1993, where GIS practitioners and critical human geographers agreed to a cease-fire, the GIS & Society agenda has been reflected upon, pushed forward, and diffracted in few (but intellectually significant) arenas. Critical, participatory, public participation, and feminist GIS have given way more recently to qualitative GIS, GIS and non-representational theory, and the spatial digital humanities. Traveling at the margins of these efforts has been a kind of social history of mapping and GIS. And while GIScience has been conversant and compatible with many of these permutations in the GIS & Society agenda, a social history of mapping and GIS (as signaled most directly by John Pickles in 2004) has perhaps the least potential for tinkering with GIScience practice (see conversation between Agnieszka Leszczynski and Jeremy Crampton in 2009). Perhaps this disconnect is growing, as can be witnessed in the feverish emergence of a ‘big data’ analytics/visualization perspective within the contemporary GISciences (alongside the growth of funding paths around cyberinfrastructure). What then is the relevance and role of a social history of GIS *for* GIScience practice? In this viewpoint, I sketch and reflect upon a diversity of efforts that address this question.

Perhaps I enter this social space of silence by living in the world as I found it. A world where the unconscious is structured as a language, a world where power is structured as a knowledge, a world where lines are taken to their limits. (Olsson 1991, 181)

While Gunnar Olsson’s research program is differently aligned than those projects of critical GIS, I feel his discursive moment here, of recognizing an intense and fantastic responsibility that comes of being a geographer, of conducting the course of lines past, present, and future. Olsson elevates the cartographic as central to organizations of knowledge, examining symbols and signs as systems of meaning (note Sparke’s critique of that vision, 1994; see also Olsson 2007). The relations between word and world and the curatorial systems that map these relations are brought to the surface by discussions of the line. Extending Olsson, ‘is’ and ‘=’ (as two such lines) enact much trickery in the GISciences, signaled for instance by the debate between Leszczynski (2009) and Crampton (2009). The problem instead, as Olsson writes (1991, 190) is how to “recognize something when I see it

again”, when “the phenomenon under discussion changed as the story proceeded”? The scurry of current practices marked under the sign of ‘GIS’ are such phenomena; among them, changes for the line must also mean changes for techniques of recognition and engagement. This insistence scratches up against my brief background of teaching critical GIS and facilitating university-community partnerships in GIS classrooms. While my work to-date has emphasized the socio-political dimensions of spatial data and technological practices, I am increasingly interested in how to foster a critical technology perspective within GIScience. The challenge is to allow the thickening of GIScience practice by recognizing the multiple implications and implicatedness of this work. I argue this thickening must begin with a deepening of our attention to the status and effects of the line.

The last century of mapping work has brought about incredible opportunities for the line, with a frenzy of disciplinary subfields that travel under the banner of mapping, and yet extend liberally into many modes of thought, inquiry, representation, and habit. Across many of these developments has been a particular theory of action -- which might also be called practice -- wherein a difference is made and the world is intervened (although, see Harrison 2009 on thinking the absence of practice). From the drawing of a line connecting one node to another, the spaces and places of our discursive and material realities form and in-form. This theory of action, which might also be understood as a force or an affect, is what compels both the drawing of a line and the tracing of a line. I understand drawing and tracing as fundamentally distinct, yet complementary, theory-actions, that the drawing and tracing of a line is both territorializing and deterritorializing, both stratification and destratification, to invoke Deleuze and Guattari (1983). There are those who draw and those who trace; each practice has a politics, and their attendant black boxes confound the novice. Representations of this sort are thus always-already more-than-representational.

The line, drawn by us, in turn, draws us in. The subtleties of a drawn line and the affective force of its presence or absence is integrally part of a theory of action that stretches across and assembles the various permutations of mapping practice. Indeed, the traditions of critical cartography and GIS have drawn our attention to perhaps the most banal of a GIScientist's endeavors. However, in the midst of an increasing proliferation of the digital tools, techniques, and literacies of mapping, I suggest a particular responsive and responsible action: towards an *enacting* of a social history of GIS. Put simply, this is a call for tracers who draw, and drawers who trace, and a recognition of the urgency of such hybrid positions, of monsters. It is a return to the promise of the GIS & Society agenda and the Friday Harbor meetings that catalyzed it (see Schuurman 2000), to confront the opacity of contemporary GIScience.

A social history of GIS aspires to be resolutely situated in the disciplinary histories that encircle GIScience, to recognize that the GISciences are not hermetically sealed, that they emerge within particular traditions of innovation and investment. This social history is a remnant of the original GIS & Society agenda -- lost in the fog of GIScience. Indeed, John Pickles, in reflecting on those days 20 years ago that gave rise to *Ground Truth* (1995), discusses the atmosphere of geography departments:

GIS students were rarely introduced to the prevalent debates about philosophies of science, social theory, and cultural studies... In parallel, the technical possibilities for larger data-sharing and analysis were not taken up by most Marxist, feminist, and humanistic geographers... (Pickles 2006: 765)

How might we date this reflection? Is this a reflection on 1993? Or 2013? How do we understand the desired outcome of hybridities like Friday Harbor (Poiker 1995) or *Ground Truth* (Pickles 1995) or Initiative 19 of the National Center for Geographic Information and Analysis (Sheppard 1995)?

For me, as a student at the University of Washington in the decade-plus following these interventions, things like I-19, on “the social implications of how people, space, and environment are represented in GIS” were endeavors to figure out how to “work together” (NCGIA ca. 1996,

n.p.). And there have been synergistic outcomes of this ethic of trans-epistemological engagement -- of rhizomatic work (Deleuze and Guattari 1983) -- and yet a social history remains largely dormant.

One of these stratifications has been critical GIS, which I consider a tacking back and forth between technical practice and critical practice, what I've previously called a techno-positionality, between using digital spatial technologies in radical ways and relentlessly situating those same technological practices (Wilson 2009). This tension between the use of GIS and the study of the use of GIS, enables four further provocations that I believe enacts this ethic of "working together". First, that GIS are objects, an institution. As software, it therefore has effects and implications, and one can trace its operation and constitutive role in society. Second, GIS are made, but not made up; it's done, enacted, produced, constructed. As such, it can be re-created and made differently. Third, GIS should be pushed beyond its limits, to constitute new, alternative technologies and radical implementations. However, critical GIS requires practice, fourthly; it assumes iteration. Processes are emphasized over products. These products are simply souvenirs of mapping journeys; they are the result of momentary assemblages.

These four provocations have not been equally fueled. Indeed, the first requires a particular historical method and conceptual footing that has, at times, loosened the connective threads that bound the GIS & Society tradition (see Schuurman and Pratt 2002). Furthermore, the sedimentary processes by which critical GIS has become 'a thing' has laid ground for some interesting, sometimes parallel, developments within and without our discipline, including feminist, queer, qualitative, and historical GIS as well as GIS art, nonrepresentational GIS, and the spatial digital humanities. There have been renewed alignments with participatory action mapping as well as an emerging critical physical geography (see Lave et al. 2013). New work in critical geoweb studies have reinvested a generation of scholars in the critical geographies of ICTs and digital culture, while the situating of neogeography have led to pedagogies in critical GIS and mapping (see special issues by

Wilson and Graham 2013 and Leszczynski and Wilson 2013). These areas either share important antecedents or share an approach, a conceptual practice of mixing or a recognition of the deeply transitive and translational properties of engaged technical and technoscientific work.

Thus, critical GIS is always a doing and an undoing, although not in equal shares. This dual characteristic, this productive schizophrenia, I believe, makes it a quite unique technopositional stance. As a result, critical geographers are being drawn toward GIScience, as a way to analyze issues related to social and environmental justice, recognizing the need for ‘strong’ geographic representations to articulate both global uneven development as well as the injustices of everyday life for some. Relatedly, the digital humanities, in their turn toward GIS, use locational indicators to understand novel structure, character development, and the relationships among artifacts. On the one hand, this is still about “working together”.

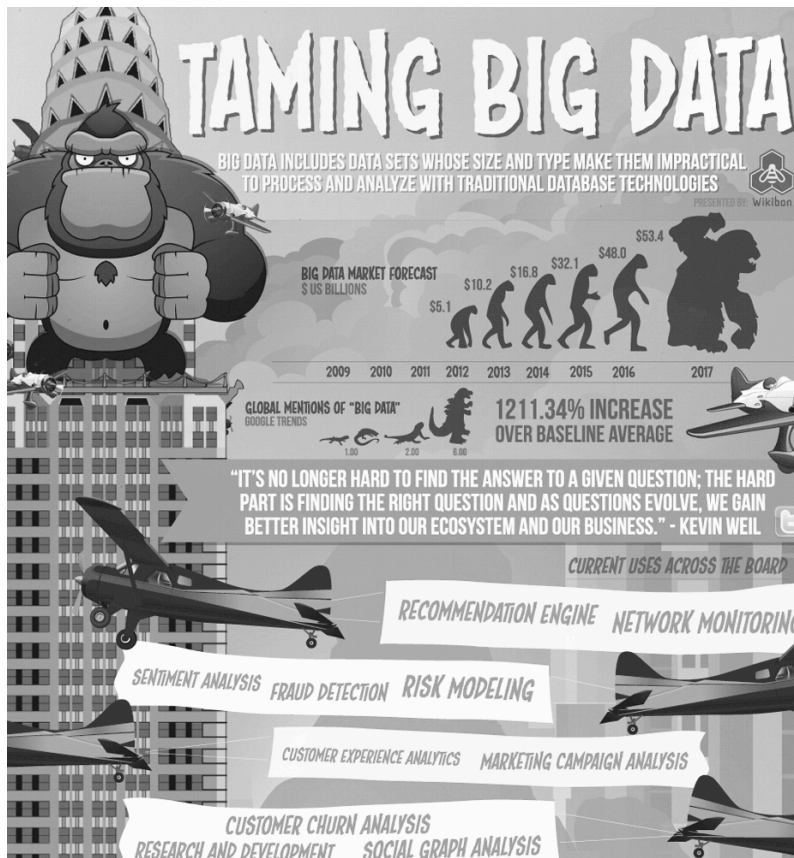


Figure 1. Excerpt from “Taming Big Data” infographic (Wikibon 2012).

However, another ‘gorilla’ has entered the room -- perhaps even bigger and broader than the mandates of Science in the late-1990s discussions around GIS. This requires, I argue, the re-prioritization of a social history of GIS within the critical GIS agenda, an underlining of my first provocation. In figure 1, see big data market forecasts, global mentions of ‘big data’ on Google Trends, insights for ecosystems and businesses, not just questions, but the *right* questions. We need to “tame big data”. Indeed, it is hard to deny that the GISciences are being re-articulated through an emphasis on ‘big data’ and the opportunities associated with user-generated internet content, through funding for cyberinfrastructural systems, computational methods for securing the homeland, and the gaining of geopolitical high-ground through geointelligence services -- not to mention the range of industries that feverishly inspire GIScientists to better accommodate an economy based upon attention, with real-time geodemographic, location-based support services (see recent work on attention economies by Wylie 2013, Kinsley 2013, and Stiegler 2012). Perhaps, as Schuurman and Kwan suggested in 2004 and as David O’Sullivan asks more directly in 2006, this move to rebrand geotechnical work as GIScience has actually enabled the removal of GIS from the socio-political and economic situations of its emergence (see also Eric Sheppard’s contribution in Wilson et al. 2009). Proponents of big data science are similarly constructing walls that serve to render the GISciences more opaque, motivating the need for new lines.

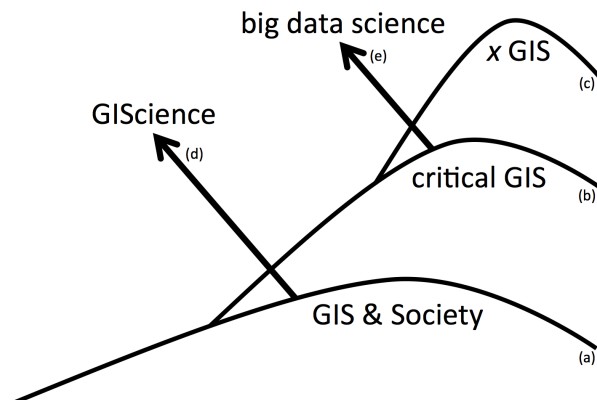


Figure 2. Discursive terrain of GIS.

Figure 2 illustrates the discursive terrain of GIS. If GIS & Society (fig. 2: a) laid the foundations for critical GIS (fig. 2: b), from which a whole host of ‘x-GIS’ subfields and activities (fig. 2: c) have emerged (such as feminist, queer, and qualitative GIS), then how we view the rebranding of GIScience in the late-1990s (fig. 2: d, see Wright, Goodchild, Proctor 1997, Pickles 1997) is important for our current encounters with ‘big data science’, tens years on (fig. 2: e, see boyd and Crawford 2012 and Wilson forthcoming). I guess we should ask if figure 2 is a fair representation of the discursive terrain that situates the contemporary tensions within a critical GIScience. However, if these lines are even partially true, how do we respond? Was Friday Harbor just one of many opportunities to change direction, to gather energies? Have we lost that affect, that force, to “work together” in drawing and tracing lines? Are we in need of a Friday Harbor 2.0? We need new lines.

While there may be multiple ways in which to imagine new lines, new practices of engagement with and through GIScience, I tend to approach this by asking the question: How do we *enact* a social history of GIS? Which is to say, how might the social history of GIS enable new practices and engagements that mobilize GIScience, that cause mapping to move? A social history of GIS tacks toward the first provocation, toward the tracing of operations and effects of GIS. However, to *enact* a social history of GIS is to allow this social history to actually impinge on GIScience practice, to thicken its remit. What do these new lines look like? Perhaps they are pedagogical, taking risks in our classrooms to engage hybrid lines of interrogation, which may be based in partnerships -- allowing a kind of vulnerability, to change course, to map the yet-unmapped. And doing so, by following mapping industries, perhaps through participation and observation, or working to develop alternative techniques that inspire a renewed responsibility to the various geographies we inhabit. Of course, there are many other possible lines that we should explore.

The suggestion I am attempting to make is that perhaps geographers have enabled a particular and limiting narrative that surrounds the practice of GIS -- as either Science or Critical -- and have produced the range -- the terrain -- of possible engagement. As Deleuze and Guattari write, "A rupture is made, a line of flight is traced, yet there is always the risk of finding along it organizations that restratify everything" (1983: 18). The ruptures generated by GIScience and big data science (fig. 2: d and fig. 2: e, respectively) are lines of flight that I believe risk restratification. Indeed, new lines will eventually become hardened and obvious, but I would rather take these risks, and take them as often as permitted. Drawers who trace and tracers who draw are the monsters that produce new lines -- as rhizomatic acts of continuous and resistive destratification.

Perhaps these new lines will return us to the map: the map as a kind of aporia, a difficulty, a perplexity. In this sense, on the one hand, the map is recognized as an artifact that captures and assembles a vision such that other representations, other imaged and imagined landscapes, might be made invisible. However, on the other hand, and with great pause, the map artifact draws one in, causing one to actually lean in and trace the contours of place. You are here, and the possibility of a collective, of a 'we are here' is not unimaginable. A responsive and responsible cartography constitutes a blurring of the individual and the collective, to resist the simple distractions created by the glowing blue orbs in the interfaces of our mobile devices, by rendering more transparent the assemblages which make its pulsations possible. Therefore, the 'we' of this imagination is resolutely more-than-human. How I think the enacting of such a social history of GIS proceeds through this resolution, pushing our greatest technoscientific achievements to inspire collective engagements, to bring about worlds that make a difference, where that difference is always contingent, in "a world where lines are taken to their limits" (Olsson 1991, 181).

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