NEW LINES: CRITICAL GIS AND THE TROUBLE OF THE MAP

By Matthew W. Wilson

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Review by: Stephen R. Appel, American Geographical Society Library

Cartography is going through a sea change; social media and the internet have become to cartography what GIS was to Geography: disruptive and transformative. As a geospatial information specialist at a geography research library, I constantly find myself suspended between admiration for the careful and painstaking precision of pre-digital mapping, and demands from researchers and students for immediately visualized results using the latest mapping technology, which increasingly means using web-based, free, and/or open-source tools. Much GIS literature takes a more-or-less positivist view of geospatial technologies—discussing them theoretically, as tools applied to problems, rather than pragmatically considering their palpable effects on people and societies. This approach makes much of that literature seem increasingly out-of-touch. *New Lines: Critical GIS and the Trouble of the Map* is a refreshing view and interrogation of Critical GIS and Critical Cartography praxes, and one that could well prove as influential as John Pickles' *Ground Truth* (1995) in the way it challenges normative understandings of GIS and mapping technologies. *New Lines* employs a social history encompassing cartography, digital mapping, archival research, and modern philosophy, along with a nuanced consideration of modern digital culture, to propose that Critical GIS scholars reexamine and reconsider what the author, Matthew W. Wilson, calls *the critical turn*.

The author is an associate professor of Geography at the University of Kentucky, where, along with Jeremy Crampton and Matthew Zook, he is co-director of the New Mappings Collaboratory. According to the Collaboratory website, the participants claim to "draw on applied and conceptual traditions in mapping practices and mapping thought" (**newmaps.as.uky.edu**). Wilson's research in the Critical GIS domain canvases Qualitative GIS, neogeography, the geoweb, mixed-method GIS, and the social history of GIS. He has co-authored a number of publications with other familiar GIS and Society scholars including Mark Graham, Trevor Barnes, and Rob Kitchin. Reading this book transported me back to the "GIS and Society" seminar in graduate school that first exposed me to Critical GIS. At that time, I had been learning about the tools, buttons, and menus involved in geographic information systems and learning to *do* GIS to perform analysis, answer questions, and solve problems. The title of Wilson's Introduction, "But Do You Actually *Do* GIS?", captures the same Critical GIS challenge I first encountered in that graduate seminar. *New Lines* is clearly intended for an academic audience, and, like Pickles' *Ground Truth*, this book could be a challenging read for someone who has never been exposed to this approach to the social dimensions of GIS technology. Frankly, I was unfamiliar myself with much of the philosophy employed in the book; but, fortunately, the endnotes are descriptive, abundant, and thorough. *New Lines* employs the concept of the drawn and traced line—evocative of pen-and-paper cartography—as a metaphor for the evolution of GIS and cartography, and uses it to reexamine the critical praxes of GIS and Cartography in scholarship. In raising the question "If the tracing of maps is a key part of learning the craft of hand-drawn cartography, how might we trace the digital map?" (47–48), the book addresses what it identifies as five fractures or interventions in these lines: *criticality, digitality, movement, attention,* and *quantification*.

The first numbered chapter, "Criticality: The Urgency of Drawing and Tracing," traces the social history of Critical GIS. Wilson discusses the impacts of the Friday Harbor meetings, a 1993 gathering at which GIS practitioners and scholars critical of GIS began to hammer out their differences and to catalyze GIS and Society as a field of study. Much relevant scholarship has emerged since then, and Wilson aligns these debates about technology, positivism, and Geography with elements of the wider Critical praxis—including neogeography, pervasive digital culture, location-aware society, big data, social media, and spatial media.

At this point, Wilson asks if the term *critical* has run out of steam—has it been invoked so often that it has lost its impact? Referring to the debates around the political implications of Mercator's projection, arguably a cliché of critical map critique, he asks what, in our location-aware society, will constitute the new Mercator—what might the collective critical attention focus on next? Wilson employs the example of the problematic American Geographical Society (AGS) Bowman Expedition to Mexico, specifically the 2005–2008 México Indígena project (americangeo. org/initiatives/bowman-expeditions), to highlight the importance of considering the meaning of participation, empowerment, and local knowledge. The chapter closes with a discussion of *correspondence* that encourages an experimental vision and process, and centers on the impact of the digital on abstraction and generalization—a topic further expanded in the following chapter. "How," Wilson asks, "might cartographic experimentation forgo the rush toward a faddish polishing of infographics and instead amplify the disruptive potential of geographic representation?" (45).

In Chapter Two, "Digitality: Origins, or the Stories We Tell Ourselves," Wilson retells the story of the Laboratory for Computer Graphics and Spatial Analysis (LCGSA) at Harvard to demonstrate how, even from its earliest days, computing systems disrupted cartography and challenged mid-century tradition. The author does this largely by focusing on his own work with the archives of LCGSA founder Howard Fisher. This chapter discusses the transformation of American Geography in the 1960s, and constitutes a veritable Who's Who of mid-20th century Geography, including figures like Betty Benson, Arthur Robinson, Waldo Tobler, William Bunge, and of course, Fisher himself.

Digitality was disrupting geographic representation well before the term GIS was coined. Bunge, and others associated with the University of Washington, were using computer cartography to bring a more logical and scientific approach to Geography by employing techniques that seem mundane today but were revolutionary at the time. This storytelling is not about nostalgia; Wilson uses it to position the computer as an interruption between the map author and the reader, and avers that Critical GIS must adapt to this interruption.

The third Chapter, "Movement: Strange Concepts and the Essentially Subjective," traces the history of Waldo Tobler, Allan Schmidt, and Geoff Dutton, and their work in map animation. Wilson, however, sees the notion of movement as broader than just moving map features. He employs the postmodern philosophy of Gilles Deleuze to argue that, like the movement-image conceptualization of film, animated maps are more than the sum of individual frames in a flipbook. Wilson likens Deleuze's discussion of film's ambiguous position as neither art nor science to both Robinson's ideas on the limits of standardization and to Thrower's seminal works on animated cartography. He closes this chapter with a discussion of the rapid evolution of mapping technologies, and wonders if cartographic theory is keeping up with the changes.

"Attention: Memory Support and the Care of Community" is the fourth Chapter, and it focuses on what Wilson calls the *attention economy*: how do maps compete for attention under what he terms the *mediatization* of everyday life? He investigates this question by employing the Foucauldian idea of Biopolitics—denoting social and political power over life—and cleverly intertwines this with the work of GIScientists on participatory mapping and public participation GIS. Geospatial technologies are often trumpeted as a revolutionary engine for the empowerment of community-based organizations, but this is an assertion about which Critical GIS scholars are justifiably censorious. Wilson discusses the roles of community organizations in *attention economies*—highlighting the importance of "recognizing systems for geographic information as one part of an expanding digital culture" (101)—and of thinking beyond GIS and map output. Critical GIS practitioners, he tells us, must embrace the geoweb, while at the same time recognizing that "the rise of digital culture is unevenly experienced" (106), and that some communities remain on the wrong side of the digital divide. The author draws particular attention to the way community organizations often struggle to make social media and other emerging information technologies work for them despite the divide, alongside their more mundane struggles with high staff turnover and limited financial resources. The chapter closes with three *jumping off points*. First: that university-community partnerships have a rhythm that extends beyond the university calendar, and that partnerships should not start and end with the GIS course. Second: that these partnerships require a collective memory, both technical and social, with facilitators paying careful attention to avoiding apathy and project stagnation. The third point is that, in the context of ever-changing digital

media, attention work is a key aspect of a culture of action for building solidarity.

In the fifth Chapter, "Quantification: Counting on Location-Aware Futures," Wilson takes up a recurring theme in Critical GIS praxis. Quantification dominates debates on positivism's influence in geography, on efforts to advance a Qualitative GIS, and on the data models that prevail in GIS practice. In this regard, Wilson also discusses what he terms the *quantified self-city-nation,* drawing attention to the relationships between the idea of "smart cities and smart societies" and of personal quantification via the tracking of personal metrics with wearable devices. In this, the interdependence of scales is significant; the smart city is about controlling the individual, but control is dependent on voluntary individual quantification. Following from earlier discussions of the attention economy, he examines marketing around smart cities and wearable technology. Wilson discusses the interplay of what he sees as three *dualities*: interoperability–propriety, competition–habit, and fashion–surveillance, in the context of a *quantified self-city-nation* wherein mass collection of metrics on individuals constitutes a "neoliberalizing vehicle for reterritorialization of the body, the city, and the nation" (126). He considers the proliferation of quantification of proximity (citing an example of AT&T collecting location information for market research) and the ambiguous line between fashion and surveillance (the third duality) when it relates to the increase in sensors in our daily lives and on our bodies. At the chapter's close, he re-conceptualizes the map through the dualities, as an object of interoperability and propriety, competition and habit, fashion and surveillance. "The digital map that guides us

toward consumptive opportunities in our neighborhoods both creates and safeguards these neighborhoods" (132).

The great strength of this book is the manner in which the author re-situates familiar Critical Geography arguments and histories with mainstream topics—social media, spatially enabled society, and digital surveillance—and with theoretical considerations from well beyond the discipline. Maps and GIS are powerful, and spatial technologies have been a transformative force, but the broadly dominant positivist approach has failed to account for and engage a wide range of their significant effects on people and societies. I found a striking criticism of positivist mapping in the opening paragraphs of the closing chapter: "The force of [Robinsonian] thought simply does not take maps seriously enough" (136).

New Lines: *Critical GIS and the Trouble of the Map* reinvigorates some of the discussions that GIScience scholars have debated for decades by presenting material that is substantial without being impenetrable. I would recommend this book to anyone studying GIScience, and especially to those interested in GIS and Society, though Wilson's discussions are also relevant to the GIS community at large. It may also appeal to those interested in the digital humanities, particularly humanities GIS. This book challenges everyone who usually deals primarily with the technical issues of GIS to more carefully consider the impacts of these technologies on society; I know it challenged me.

REFERENCE

Pickles, John. 1995. *Ground Truth*: *The Social Implications of Geographic Information Systems*. New York: Guilford Press.

ETHICS IN EVERYDAY PLACES: MAPPING MORAL STRESS, DISTRESS, AND INJURY
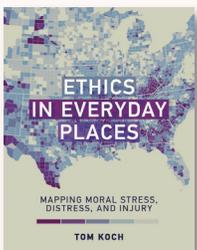
By Tom Koch

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288 pages, 34 maps, 10 tables, 7 graphs, 14 diagrams, $35.00, hardcover.

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Review by: Daniel G. Cole, Smithsonian Institution

I read *Ethics in Everyday Places* after finishing the third edition of Mark Monmonier's *How to Lie With Maps*. While Monmonier's book is geared toward a general audience, Koch's work focuses more specifically (although not exclusively) on cartographers, and on mapping as "the medium for ethical exploration" (xii). He cautions: "Readers who are looking for an easy fix, a straightforward, uncomplicated ethical rule, or an inflexible moral standard will be disappointed" (xv). Koch also points out that "This is a