

BOOK REVIEWS**USING GEODATA AND GEOLOCATION IN THE SOCIAL SCIENCES: MAPPING OUR CONNECTED WORLD****David Abernathy**

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Recent decades have seen a growing interest in the accurate collection, visualization and analysis of spatial data and the geographical components of data capturing wider social processes. More and more, the complexities of big data analysis call for accurate and innovative mapping techniques to identify and clarify the role of geographical space. Also, the growing quality and availability of a wide range of datasets is fostering a growing interest in the analysis of the effects of geographical space. As society is increasingly characterized by a high level of interconnectedness and social networking, it seems clear that an accurate spatial representation of many phenomena is of key importance to students, researchers, and practitioners across the social sciences. As David Abernathy aptly puts it: "We have come to understand the power of "where" when attempting to better understand the "why" and "how" (p. 6).

Against this background, the book by Abernathy is a very welcome and important contribution to the literature. In his book, Abernathy argues that society can increasingly be characterized as consisting of a geoweb, defined as "a distributed digital network of geolocated nodes that capture, produce, and communicate data that include an explicitly spatial component" (pp. 2–3). Next to computers and mobile phones, these nodes consist of a variety of machines, appliances and objects that are connected to the internet and provide a growing amount of data. The geographical components of this data are offering new opportunities and challenges to researchers and practitioners that want to identify and understand the roles of place and space. As Abernathy notes: "This is the promise of the geoweb: that the collection and visualisation of large volumes of spatial data, being generated by everything from mobile phones to smart cities, can help us better understand our social and natural environments" (p. 27). The main purpose of the book is to provide a background to the visualization of geodata and to discuss a variety of tools, examples, and advice on how to start doing this.

The book consists of two parts. In the first part, Abernathy provides the necessary context of the nature and analysis of spatial data. In Chapter 2, the concept of geoweb is further explained and explored. Chapter 3 provides a discussion of geodata as an example of big data, offering new opportunities and challenges for existing tools and analysis. Chapter 4 discusses the growing importance of the vast number of technology users as providers of geodata. Chapter 5 addresses issues on data accuracy, privacy and surveillance. The last chapter of Part 1 discusses the various types of geodata and provides a guide to the second part of the book.

The second part of the book contains a collection of chapters that provide discussions and explanations of several tools for the collection and visualization of a variety of types of geodata. Chapters 7–10 deal with different types of geodata, whereas Chapters 11–14 discuss several types of software programs that can be used for data visualization. Chapters 7 and 8 deal with data on absolute space, either in the form of GPS data or geographical data that can be transformed into exact locational data. Chapter 9 looks at how to identify and collect data with spatial components from Twitter. Chapter 10 explores geodata that machinery and applications transmit via the internet. Chapters 11 and 12 provide practical introductions to the desktop GIS software applications QGIS and GRASS. Chapter 13 explains how to access and visualize geodata with the software program R. In Chapter 14, several web browser-based tools are discussed, including Google Maps, OpenLayers and Leaflet. Finally, Chapter 15 returns to the concept of geoweb and places its development in a broader social context.

The book has several strengths. The structure of the book is very good. Also, it is written very well and introduces a range of topics in a clear and accessible way. All the chapters conclude with a concise summary, making it easy for readers to see the main points and how they are linked to other chapters. Regarding the more practical chapters in the second part of the book, they contain clear explanations of the types of geodata and software programs that can be used for spatial data mapping. The chapters contain easy-to-follow examples and guide readers towards obtaining and manipulating datasets and creating a variety of maps. As such, the book clearly meets its goal in providing students, researchers and practitioners with a hands-on introduction into how geodata can be collected and visualized. Several types of software are explained, each with its own strengths that suit particular types of data. Importantly, Abernathy uses free and/or open source tools, which means that readers can start working with spatial data without facing financial restrictions by having to purchase software programs under license.

As for limitations, the list of suggested further readings is rather constrained. Especially given the fact that the book is intended for first-time users of spatial data, it would have been nice to see a more extensive list of suggested readings and material, guiding readers into the vast literature on spatial data visualization and analysis. Such a list could also include more examples of academic articles that use spatial mapping to study social phenomena. Furthermore, in some cases the examples and exercises only provide a first glance of what can be done with the various software programs. This means that readers need to be aware that they are expected to invest considerable time and effort in learning more about these various programs. This is also important when considering using this book in courses on spatial data collection and visualization. When moving beyond the examples and exercises provided in the book, instructors need to be aware of the possibility that students may have to rely rather strongly on the instructors' more detailed knowledge of the software programs. In relation to this, instructors will need to consider whether this book can act as stand-alone material for courses on the use of spatial data or that additional textbook material is required, especially as the book does not address spatial data analysis, focusing exclusively on how to collect and visualize spatial data.

Overall, the book provides a nice introduction of a variety of ways to collect and visualize spatial data. The book is written in such a way that it stimulates readers to actively start collecting data and map spatial and social phenomena, using the clear instructions that the book provides. Especially for first-time users, the use of spatial mapping software often involves a high degree of trial and error, which can be off-putting. This book makes it easier to try out a variety of mapping tools, limiting the occurrence of errors when following the examples and exercises provided. As such, it will help a broad audience to start incorporating the use of spatial data into their studies, teaching and research.

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GLOBAL CITIES AND URBAN THEORY

Donald McNeill

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McNeill writes for a specific audience, mainly students within the fields of sociology, geography, and urban studies. In this sense, the author takes some concepts and theories within these fields as common ground. Nonetheless, the book is accessible enough to a broader audience interested in the nature of the global city. Economists, for example, take a more micro- or macro-economic perspective to model urban spatial structures, and therefore can learn from McNeill's in-depth perspective of global cities, which provides "bright" insights in the understanding of why some cities around the world have been more influential than others. For this purpose, McNeill consistently elaborates on cultural and political aspects of cities as well as on the sociomaterial (represented by people and objects) who together produce

the spaces of cities. Many of these aspects are overlooked by economists, which makes reading McNeill's book a nice opportunity for reflection.

One of the nicest aspects of McNeill's book is the up-to-date and comprehensive literature references. While guiding the reader to the understanding of global cities and urban theory, McNeill discusses topics as wide as race and containerization. However, some of these topics come as side notes to which McNeill provides relevant references, and therefore a starting point to these additional topics to the interested reader. Furthermore, the author structures his story within the literature: there is hardly any (if any) page without a reference and/or citation. In essence, one of the biggest contributions of McNeill's book is to use the existing literature on political and cultural economy of global cities which connects it to materiality and practices to explain global cities and urban theory.

The book is divided in an introduction, six chapters, and a conclusion. The starting point of the book is a discussion of what McNeill names the "original global city": Rome. It is widely accepted that religion, and its organization, were influential in particular in terms of economic growth, setting up of institutions and divisions of nation states. From this perspective, McNeill's argument that Rome is the "original global city" makes perfect sense. Nonetheless, McNeill is critical about the fact that religion is absent from the current global cities literature. According to him, religion is still relevant in contemporary cities. To provide facts for this argument, the author elaborates on the development within the Church to increase its power, such as the embracement of materiality and changes in the organization of spaces of worship. Although the ideas in this chapter are not necessarily false, it is one of the least convincing chapters as it is not aligned with his own definition of global cities, "as being about concentrations of power and influence" (p. 14). Power and influence are currently determined, among others, by business activity, politics, knowledge and connections. The forces behind the global cities of today, which the author explores in the other chapters of the book seem to be of much more relevance.

Chapter 2, "Flat Cities," is a fundamental chapter of the book. McNeill explains the relevance of actor-network theory (ANT) for urban theory. The ANT comes back throughout the remainder of the book. The devotion of one chapter to ANT illustrates McNeill's fascination on how objects are relevant in making a city global. McNeill zooms into 'small' things to understand the "big" issues. Nonetheless, at times, one can get lost in the 'small' things, such as the voting booth and the public toilet, and lose sight of what makes such objects relate the city to the global context. These are fun things to read, but not always clearly relevant.

Chapters 3–5 are closer to answering McNeill's question about the organization of the global cities. McNeill relates global city to a "vision of orderliness, where certain 'global' standards... are the norm," but also with the idea of "being ordered" (p. 52). This ordering or categorization of cities, in turn, is the first step to analyze the (relative) connectivity of cities. Besides leading to research on connectivity of cities, the ordering of cities leads to the analysis of cities ranked lower in the list: those of developing countries. Although McNeill provides some references of authors who have tried to expand urban theory towards developing countries, this is not the focus of his narrative. That is not strange, as he emphasizes the existing controversy in the "ordinary cities" approach. Can we abstract from the diversity among cities in different development levels to embrace all of them within one urban theory? The answer to this question is debatable and one which McNeill does not address, although his book provides some elements to answer this question, such as the ideas of "big city" and "big building". Another hint is his fascinating analysis of standards (e.g., ISO 9000) and in particular global standards, as exemplified by the hotels after the Second World War, and air conditioning. As a result of these standards, "a resident of a high-income area of Shanghai will likely have more in common in terms of their access to domestic technology with a resident of Sydney or Los Angeles than with a low-income dweller in their own city" (p.72).

One central standard is the one of container size because the standardization of this size has drastically reduced transportation costs. McNeill argues that ports affect the "speed of globalization, and organize the surficial crossing of the globe" (p. 76). Global cities were for many centuries determined by the presence of ports (p. 83). Nonetheless, the advance of air travel changed how cities around the world are connected to one another. Moreover, it changed the cities' spatial strategies, which evolves nowadays around their airports (p. 89). This final point is nicely illustrated with the case study of the production of Hong Kong international airport.

McNeill moves from the logistical territories (ports and airports) toward the “central business district,” bringing back light to the centers of cities. His story here is intuitive and provides justification to why “some cities” are “more worthy of study than others” (p. 98). In this chapter entitled “Centres of Calculation” McNeill approximates from the ideas of economic complexity based on which more complex economies are ones which have larger amount and diversity of useful knowledge. McNeill points out that cities concentrate knowledge, in particular, because many of the products produced by the global firms are complex (p. 110). The similarity with the ideas from the economic complexity literature are remarkable, and raises the question of whether global cities can be seen in terms of their economic complexity.

The final chapter discusses “how economic practices are engaged in world making” (p. 124). The accumulation of economic practices, in turn, are essential to the formation of a global city. Thus, knowledge is not the only ingredient for a city to become global, but also the way firms are managed, how people are inspired, and other practices. With this last final ingredient to explain the nature of the global city, McNeill reaches the end of the book indicating that one way to define global cities is as “sites where firms are gathered” (p.152). That is probably the most evident description, but McNeill’s book is much more than a mere description of the global cities. The author provides an essential analysis of what constitutes a global city, and what is necessary for a city to be global.

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