Reviews / Comptes rendus

Using Geodata and Geolocation in the Social Sciences: Mapping Our Connected World

by David Abernathy, Sage Publishing, London, 2017, 344 pp., paper $43.70 (ISBN 978-1473908185)

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The prevalence of ubiquitous computing has in recent years led to the proliferation of geospatial data. Responding to the "spatial turn" (p. 6) of research, David Abernathy authored *Using Geodata and Geolocation in the Social Sciences* to introduce the "geoweb" and to recommend "free and/or open source" (p. 7) mapping techniques to social scientists. The book consists of two parts. While Part One (Chapters 2 to 6) provides background, concepts, and concerns around the geoweb, Part Two (Chapters 7 to 15) includes hands-on exercises of geodata collection and visualization. After a brief introduction in Chapter 1, Chapter 2 touches on the history of geographic information systems (GIS) and Global Positioning System (GPS). Chapter 3 utilizes the "Four Vs"—volume, velocity, variety, and veracity—to discuss the properties of big geodata. Then, Chapter 4 discusses the relationship between neogeography, volunteered geographic information (VGI), and sousveillance. Chapter 5 expands on the previous chapter by covering the privacy and accuracy challenges of the geoweb. The final chapter in Part One offers conceptual knowledge of spatial data types to get readers prepared for the exercises in Part Two. Starting with GPS-related examples, this section describes spatial data collection methods using trilateration; social media (e.g., Twitter) and Internet of Things (e.g., Arduino); and visualization tools including Google Fusion Tables, QGIS, GRASS, R, and Leaflet. "Geocoding, geotagging and geoparsing" is also covered in Chapter 8. The book ends with Chapter 15, which reiterates the author's goals for the volume.

The book has merits. The included exercises are easy to follow, thanks to the author who selected the right tools and provided as much detail as possible. Contents are summarized at the end of each chapter, followed by connections to the later materials. The use of open-source packages also needs to be praised because proprietary GIS is financially infeasible for many organizations, and being familiar with the open-source world can be an important qualification when students enter the job market. Hardware exercises (e.g., Arduino) are incorporated into the programming contents to increase the attractiveness of the section and platforms such as Twitter and GRASS are revisited in Chapter 13, along with R, to strengthen readers' technical skills. Lastly, the book presents lots of relevant news and events, which cultivates both awareness of "real-life" geoweb applications and critical spatial thinking skills.

In terms of weaknesses, the primary concern is the lack of theoretical background in this book. The author himself admits this fact by mentioning that this is "not a book on data analytics" (p. 7) and "the computational and mathematical issues … are too complex to cover in depth" (p. 61). Although the aim of this book is to get readers "up and running with geodata fairly quickly and easily" (p. 317), it is also important to present the pros and cons of the mathematical models behind the visualization tools. Including a glossary at the end of the book would have been helpful for explaining the core concepts, such as heatmapping and interpolation. Some supplementary materials can be improved as well. For example, the book should include more citations (e.g., for "a study by the United Nations in 2013" on p. 26), links (e.g., for the Global Learning and Observations to Benefit the Environment Program described on p. 44), and further readings to expand readers' knowledge. Finally, in Chapter 14, a better approach might have focused on more features of a single tool instead of listing similar features of Mapbox, CartoDB, OpenLayers, and Leaflet all at once.

Published in 2017, David Abernathy's book is a great resource for anyone who is interested in but not so familiar with GIS. The book offers extra guidance to help beginners grasp the essential skills for common visualization of spatial data, which can be incorporated into research work of

geography and other fields in social science. At the same time, the book describes how technologies impact our daily life and historic movements, and urges readers to think beyond "mapping our connected world" and reflect upon "the social and ethical implications of geodata collection" (p. 317).

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