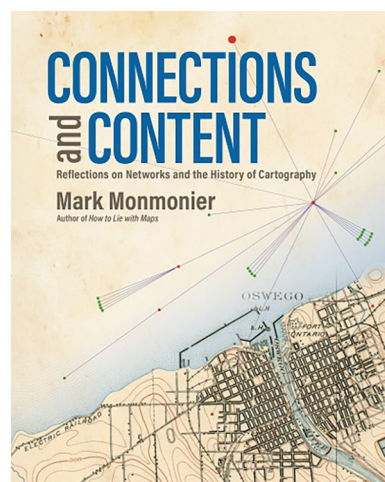


Mark Monmonier, distinguished professor of geography at Syracuse University and prolific book writer, is perhaps the world's best-known living cartographer. Readers have been entertained and educated by his *How to Lie with Maps*, though professional cartographers perhaps know him better for his editorship of the massive, encyclopedic *Cartography in the Twentieth Century*. Here he has written another intriguing volume, not a textbook, rather a “personal reflection on networks historically important in the development of cartography” (p xii), brimming with ideas for students and practitioners alike. Motivated by his fascination with networks, or interconnected systems, he picked topics that interested him, for example, the histories of surveying and mapping, and of the northeastern United States, and molded them into something gripping.

The structure of the book began thirty years ago, but it was not written until recently. Monmonier's family had no car: public transportation was a part of daily life, memories that nurture some portions of the book. There are seven chapters. Chapter 1, “Baselines,” examines how the scale of maps depends on triangulation from measured baselines, while chapter 2, “Geometry,” samples geodetic concepts - its focus on latitude and longitude dwells on the use of telegraphic networks to measure the latter. Though those grounded in land surveying would doubtless wish for more, it is amazing how much detail and instruction the author has packed into a few pages. Chapter 3, “Symbols,” is more directly cartographic, quite fresh for those of us who left cartography for other geospatial pastures. Monmonier's examples from the upper New York region that he knows are successful. Chapter 4, “Infrastructure,” is equally captivating, transiting from extensive material on canals to consideration of railroad and power networks. Chapter 5, “Telecommunications,” is also eclectic and the better for it, charming the reader with the practicalities of collecting weather data across the US from the nineteenth century to the present day. Chapter 6, “Topology,” introduces concepts from digital cartography, simply and persuasively, all the way to Google Maps, Waze, crowdsourcing, and positive train control. Chapter 7, “Control,” is a *potpourri*, from the navigation of vehicles with and without human drivers (cars, trains, drones), to ARPANET, the internet and psephological musings on the electoral college and the definition of congressional districts. Maps, therefore, “... depend on networks of measurements, observations and other data to provide the content portrayed by cartographic symbols” and the reverse reliance is true too, since, “many networks ... depend on maps for their design, planning, construction, maintenance and continued operation” (p 206).

There are two pages of acronyms and forty-one of notes, including not just references but useful, insightful comments. Readers can find, for example, information on the author's political convictions, interesting given his less than fulsome



Connections and Content: Reflections on Networks and the History of Cartography

Mark Monmonier

Esri Press, Redlands, California. 2019. xiv and 275 pp, 90 black and white illustrations, index. Softcover. ISBN 978-1-58948-559-4. \$39.99. eBook also available.

Reviewed by Stewart Walker, sole proprietor, photogrammetry4u llc, San Diego, California.

assessment of gerrymandering earlier in the book! Your reviewer's progress through the book was spurred, serendipitously, by a reference in the popular press¹ to Carl Abbott's *Imagined Frontiers: Contemporary America and Beyond*, where the role of boundary lines on maps is also pondered.

Your reviewer noticed but two typos in an attractive, copiously illustrated, well-produced book. In a discussion of scale errors (p 9), where readers are struggling to visualize the effect of incorrect measurement of the angles of an isosceles triangle (in the absence of the formula for the propagation of errors), 499.9 is printed as “4,999”. A complaint on the incorrect placement of names on an 1850s government basemap (p 133) seems to confuse Oswego, NY with Owego, NY! Intriguingly, Esri Press deocates the outer margin of every page with a colored map excerpt that fades into the text, but the author's maps are monochrome because the book was originally planned to be printed in black and white. Monmonier

¹Anon, 2020. Lexington: trouble in Trumplandia, *The Economist*, 436(9204): 21, 25 July.

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takes the opportunity to discuss how they were created – short descriptions that inform modern cartographers how to use greyscale to tell the story best.

Cartographic students and professionals may experience a stab of disappointment on opening this book. Maybe “Networks” in the title kindled an expectation of geometric rigor or conjured an image of a textbook with a new angle. Despite the author’s assertion that “Maps as networks is an ideal theme for teaching and understanding the historical development of modern cartography” (p x), *Connections and Content: Reflections on Networks and the History of Cartography* does

not meet these dreams. They should read it regardless and so should a broader public. As geospatial technologies diffuse through society, accessible works should be available to interested citizens. This is one: it links familiar aspects of the world with their depiction on maps in a compelling way and provides insights into the mapmaker’s art. It is remarkably wide-ranging, yet the material is well woven into a cartographic cloth that we recognize. Let us enjoy the output of a doyen articulating his introspections, and learn about cartography as we do.

CALENDAR

- 30 November - 4 December 2020, **Climate Change and Disaster Management — Technology and Resilience in a Troubled World**, Sydney, Australia. For more information, visit <https://conference.unsw.edu.au/en/ccdm2020>.
- 28 January - 4 February 2021, **43rd COSPAR Scientific Assembly**, Sydney, Australia. For more information, visit <https://www.cospar2020.org/>.
- 7-11 June 2021, **URISA GIS Leadership Academy**, Minneapolis, Minnesota. For more information, visit www.urisa.org/education-events/urisa-gis-leadership-academy/.
- 16-20 August 2021, **URISA GIS Leadership Academy**, Portland, Oregon. For more information, visit <https://www.urisa.org/education-events/urisa-gis-leadership-academy/>.
- 8-12 November 2021, **URISA GIS Leadership Academy**, St. Petersburg, Florida. For more information, visit www.urisa.org/education-events/urisa-gis-leadership-academy/.
- 23-25 April 2021, **GISTAM 2021**, Prague, Czech Republic. For more information, visit www.gistam.org/.

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