

## REVIEWS

***Network Science in Archaeology*. Tom Brughmans and Matthew A. Peeples. 2023. Cambridge University Press, Cambridge. \$130.00 (hardcover), ISBN 978-1-00917-066-6. \$44.99 (paperback), ISBN 978-1-00917-064-2. \$44.99 (e-book), ISBN 978-1-00918-615-5.**

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This volume is meant as a thorough, start-from-the-bottom guide to applications of network science in archaeology for both seasoned archaeological network scientists and newcomers (including those who deem themselves quantitatively challenged). Indeed, the purpose of this volume is to (1) practically outline movements from archaeological questions to archaeological data, to network data, to network analysis, to useful results; and to (2) provide the tools necessary to collect, manage, and analyze archaeological network data and address substantive questions on one's own. With complicated mathematical functions and equations fortunately relegated to a glossary, and an overarching framework that enforces a critical balance between method and theory, *Network Science in Archaeology* should be accessible to almost all archaeologists interested in network applications.

Tom Brughmans and Matthew A. Peeples state at the outset that they wish to provide the necessary tools for archaeologists to be able to explore applications of network science in their own work. The *extensive* Online Companion to this volume exemplifies their efforts to not just introduce readers to these tools but *give* readers those tools. The Online Companion (<https://book.archnetworks.net/>) includes all downloadable datasets used in the volume and an extensive documentation of R code that provides examples of network data management and basic analytical techniques for all of the methods covered in the volume. The provided code gives readers a step-by-step guide to replicate all examples in the book and re-create all figures.

The first three chapters cover important topics on appropriate selection of methods and models for a range of common research problems in archaeology. These chapters serve as an easy-to-follow introduction to network concepts, terms, and applications. Chapter 1 outlines the relevant contours of network science and where such applications fit into archaeology. An important thread introduced here, which runs through the rest of the volume, is the critical connection between method and theory, and the recognition that network science is *both* method and theory—specifically, a broad set of relational theories that represent both a critical epistemological shift *and* a set of useful middle-range theories and models from the network sciences. Chapter 2 summarizes the most common applications of network science to archaeological problems and data, whereas Chapter 3 defines network data.

These first three chapters should be read by any archaeologist interested in learning more about network applications in archaeology. Chapters 4 through 7 are meant as reference guides to specific methods and analytical tools. These chapters include a wide range of practical topics and guidance covered under the chapter titles “Exploratory Network Analysis,” “Quantifying Uncertainty in Archaeological Networks,” “Network Visualization,” and “Spatial Networks and Networks in Space.” These chapters provide explicit guidance for analyses and visualizations that archaeologists may be interested in producing.

Chapter 8 returns to one of the most substantive contributions of this work: the call for synchronization of method and theory in the application of network sciences in archaeological research. Brughmans and Peeples pointedly argue that archaeological applications of network science must

directly and explicitly engage with relational theories, and that it is not enough simply to say that relationships matter. They go on to posit that network applications in archaeology will be most productive when they are used to explain or validate statements derived from such relational or network theory, and throughout the volume they demonstrate how this can be done.

Beyond the invaluable, practical methodological guidance, this strong commitment to highlighting the necessary links between method and theory is what makes this such an important resource. Brughmans and Peeples refuse to present network methods in a vacuum, disarticulated from the conceptual frameworks that drive their utility and power. Even for those uninterested in network sciences, this volume represents a master class in demonstrating the irreducible articulations between archaeological method and theory. Furthermore, this volume showcases (1) how interdisciplinary approaches in archaeology are much more than simply borrowing method and (2) that such approaches have the potential to not only provide new answers to old questions but also enable us to ask questions that we have yet to consider or that we have not had the tools to consider.

Brughmans and Peeples's *Network Science in Archaeology* will likely prove to be one of the most effective and substantive handbooks written in the area of archaeological method (and theory). I suspect many a copy's pages will become well worn, thoroughly highlighted, and plastered with protruding, neon-colored sticky notes. Although at face a methodological guide, *Network Science in Archaeology* would fit just as comfortably on an archaeological theory syllabus as it would on a quantitative methods syllabus.

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***Vapaki: Ancestral O'Odham Platform Mounds of the Sonoran Desert.* Glen E. Rice, Arleyn W. Simon, and Chris Loendorf, editors. 2023. University of Utah Press, Salt Lake City. xx + 305 pp. \$80.00 (hardcover), ISBN 978-1-64769-117-2. \$64.00 (e-book), ISBN 978-1-64769-119-6.**

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The quantity and quality of research on ancestral O'Odham (Hohokam) platform mounds and their associated communities conducted in the past 50 years are nothing short of remarkable. *Vapaki* synthesizes this research, addresses it, and reconsiders it through the lens of current anthropological thought in essays by many of the archaeologists who conducted the original fieldwork. As an archaeologist who lived and worked in the region in question, and who was directly or peripherally involved in some of the projects discussed, it is gratifying to see such a thorough and readable book. Archaeologists and anthropologists will find much of interest because the historical narrative being constructed has much to say about pathways that humankind takes and the consequences ensuing therefrom.

The range covered in the 15 chapters is impressive. Chris Loendorf and Barnaby V. Lewis's preface makes the important point that the oral histories of the O'Odham have been misconstrued and that the defeat of the Vapaki (O'Odham for platform mound) rulers was not by an invading people: instead, it was the O'Odham who conquered the rulers. In Chapter 2, Mark D. Elson updates his work on ethnographic analogies for platform mounds, altering his former perspective to acknowledge variability in residency at the mound locations. Suzanne K. Fish and Paul R. Fish offer in Chapter 3 a long-overdue discussion of west Mexican connections to the Hohokam Classic period, the portion of the sequence