

ARCHAEOLOGICAL SPATIAL ANALYSIS:
A METHODOLOGICAL GUIDE

Mark Gillings, Piraye Hacigüzeller, and Gary Lock (Eds.)
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Methodological guides are a rare phenomenon when it comes to digital archaeology. Often discussion and outlines are relegated to the methods section of a larger paper or to blog posts or video guides, where they are lost within larger walkthroughs. The exploration of different spatial methodologies is left scattered across a multitude of open-source and pay-walled articles, or glossed over in various textbooks. This volume provides an alternative, made for archaeologists and data scientists; it outlines current methodological approaches to archaeological spatial analysis with accessible case studies. It provides a timely and useful resource for teachers of spatial archaeology who want an overview reference guide for students, but established researchers will also find this a useful resource and an outline for further study.

The authors of the 24 chapters of the volume read as a who's who in the field of archaeological spatial analysis. The chapters follow no set themes, but rather roughly seem to follow a path from initial data acquisition through analysis, to visualization and considerations of the current state and future paths of spatial analysis. It could also be argued that the chapters are arranged to present the methodologies in order from the more fundamental (and therefore older) to the more recent and complex ones., but to describe the order of the book in this way would be to take away from the intricacies of the various methods outlined and the potential of each of them. A chapter by chapter description is beyond this review, but each chapter broadly covers all main forms of spatial analysis undertaken in archaeological research both past and present. Here I shall focus on some common themes throughout.

The volume begins with an introductory chapter by the editor which explores modern paradigms of 'spatial archaeology'. It explores four broad themes related to the book, primarily a brief theoretical overview of the relationship between archaeology and space, a history of the development of spatial archaeology, followed by a brief outline of the framework and aims of the volume. In this chapter the authors discuss the relationship between landscape archaeology and spatial archaeology, stating that 'landscape is a spatial metaphor' (p.7), and this is framed within its historical context. The aim of the book is to examine a range of spatial techniques, their histories, and contemporary

applications. Methodology walkthroughs and software solutions are avoided so as not to age the book, rather what is provided is a thoughtful discussion of spatial applications over the following 23 chapters of the book. This is largely achieved, but with some caveats returned to below.

The development of new ways of visualizing and presenting spatial data is an overarching theme throughout the chapters and case studies. In general maps in the traditional sense are taking a somewhat backseat to graphical representations of data, with the former increasingly providing a contextual background. This is exemplified in the chapter by Eve and Graham at the end of the volume that addresses 'Spatial data visualization and beyond'. In it they outline the use of sonification in the presentation of data, incorporating the auditory sense. Using sonification as an example they discuss that interaction with spatial data is no longer a visual-only approach, but rather will become a more total sensory experience through which people may engage with the past.

One comment on the publication as a whole is at the time of publication all authors involved in the book were associated with northern and 'western' hemisphere institutions and the case studies are from similar provenances, with few exceptions. As a result, ironically, the scope of the book seems geographically limited.

A facet of archaeological spatial analysis that is not covered in any detail in this volume concerns the ownership and use of archaeological data. There is much discussion of the collection of data, but little on whose data it is, the exception being the chapter by Gupta (see also Gupta *et al.* 2020). In the realm of archaeological spatial analysis there is now momentum to publish data openly wherever possible, but little consideration of whether ethically that data can, or should, be published, and how the data sovereignty concerns of indigenous peoples might be addressed. Certainly these are difficult, complex ethical considerations, as exemplified by conflict between regional governing bureaucracies and the rights of indigenous groups in many countries in regards to data use and availability (Kukutai and Taylor 2016); as such some greater acknowledgement of these issues would have been welcome. For academics in the southern hemisphere and working in areas such as the Pacific, New Zealand, and Australia, these issues are increasingly at the forefront of research and cannot be ignored.

The volume is a vital resource for the current state of play for spatial research, however, it also highlights the need to create a space for indigenous values, perspectives, and issues in archaeology. The methodologies presented in the volume are tools to be harnessed for different purposes, and which can be challenged and improved when alternative ways of thinking are incorporated. There are many avenues for future applications outlined that have the potential to challenge the status quo, and this volume

provides a comprehensive background for navigating those challenges.

References

- Gupta, N., Blair, S., & Nicholas, R. 2020. 'What We See, What We Don't See: Data Governance, Archaeological Spatial Databases and the Rights of Indigenous Peoples in an Age of Big Data.' *Journal of Field Archaeology* 45(sup1):S39–S50. DOI: 10.1080/00934690.2020.1713969
- Kukutai, T., & Taylor J. (Eds.) 2016. *Indigenous Data Sovereignty: Toward an agenda*. Research monograph (Australian National University. Centre for Aboriginal Economic Policy Research) no. 38. Acton: Australian National University Press.