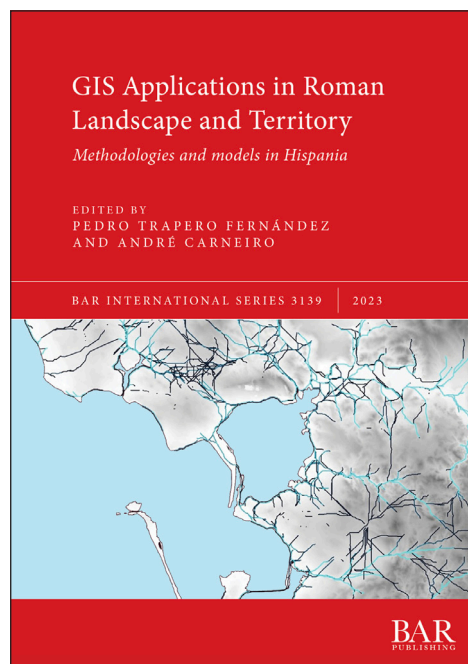


Book Review

Trapero Fernández, Pedro and André Carneiro. 2023. *GIS Applications in Roman Landscape and Territory. Methodologies and models in Hispania*. BAR International Series 3139. Oxford: BAR Publishing; 978-1-4073-5418-7 paperback £56.

This edited volume brings together twelve papers focused on the use of digital tools for spatial analysis in Roman Iberia. The contributions derive from a series of workshops organized by the volume's editors — André Carneiro (Universidade de Évora, Portugal) and Pedro Trapero Fernández (Universidad de Cádiz, Spain) — in 2021, when we were still experiencing an effervescence of post-pandemic virtual scientific meetings.

To start with, Carneiro and Trapero Fernández offer a synthetic state of the matter (Chapter 1) where they consider different factors constraining the development of studies on ancient landscapes in Iberia. These factors range from the political fragmentation of the territory, which transcends the existence of two countries, Spain and Portugal, to the presence of different heritage management bodies causing unequal access to geospatial datasets. They also add the existence of different academic traditions and higher education systems that have conditioned — if not hindered — the generation of innovative approaches and the implementation of digital competences.



The reader will immediately perceive that the asymmetry pointed out by the editors also affects the ten case studies included in the volume, which are very diverse in their objectives and approaches. The contribution of Antoni Martín i Oliveras, Víctor Revilla Calvo, Lisa Stubert, Sebastian Vogel (Chapter 11) is at one end of the spectrum. Solidly grounded in several research projects and the accumulated experience of its authors, it is a mature and comprehensive example of the enormous potential and the effort required to implement predictive models in spatial analysis to answer complex research questions. The analysis of the wine production system in northeastern Iberia results in a text recommended for hardcore GIS specialists as well as scholars interested in more widespread topics such as the economy or the articulation of the rural space in Roman times.

Chapter 3 faces the complex challenge of reconstructing terrestrial, fluvial and maritime mobility in the historically changing environment of the Bay of Cádiz (Spain). Francisco Javier Catalán González, Enrique Aragón Núñez and Pedro Trapero Fernández stress the importance of having robust archaeological, palaeogeological and palaeoenvironmental data to support an adequate reconstruction of the ancient landscape. Although the authors point out their work's experimental and limited scope — one might ask: what approximate model is not? — it undoubtedly allows us to detect a diverse and capillarized mobility in a complex territory.

In turn, Fernando Menéndez-Marsh (Chapter 5) shows how a reduced repertoire of spatial statistics and accessibility, topographic prominence and visibility analyses allow us to extract valuable information from a limited archaeological dataset. His methodologically rigorous approach sets the foundations for a deep analysis of Roman settlement patterns in the small geographical area around Capera (Spain). On a similar scale, Fernando Moreno-Navarro (Chapter 7) attempts to reconstruct mobility across the territory of Carpetania. The author aims to recreate a communications network beyond the main axes known from the *itineraria* and reassess the key role in this system of some secondary agglomerations around the city of Complutum. Focal Mobility Network, or MADO — which combines hydrological and cost analysis tools — was the primary approach used in this case study. Without this being a demerit to the work carried out by Moreno-Navarro, perhaps a more developed historical reading of the information generated is lacking.

The quality of source data is a major research concern when developing spatial analyses in Archaeology. Margarita Ana Sánchez-Simón, Javier Quintana López and Jesús García Sánchez (Chapter 8) delve precisely into the problems involved in the use of the raw information provided by heritage management services and the need to perfect these resources through the adequate delimitation and chrono-functional

characterization of the sites. This tedious and arduous work is often overlooked — or taken for granted — when we read the results of studies focusing on the evolution of settlement patterns.

Bruno Gambinhas Leal (Chapter 2) and Victor Martínez Rubio (Chapter 10) focus on the use of GIS in the specific context of intensive archaeological surveys (Terrugem, Portugal and Yecla, Spain). The authors provide methodologically sound contributions, making the most of the rather limited information obtained in the field. However, it should not be forgotten that the scale of analysis of both papers is relatively modest and that both researchers are still in the early stages of their careers.

This also applies to the contributions of Newton Ribeiro Machado Neto (Chapter 4) and Pablo Jesús Fernández Lozano (Chapter 6). The first proposal is less consistent. It relies on a broad set of GIS spatial analyses to examine the study of the territory of the ancient city of Conimbriga (Portugal), but it results in a somewhat disjointed contribution where no approach is fully matured. In contrast, the second paper is a very focused approach. Thanks to studying historical cartography and using hydrological models, the author progresses in understanding the ancient lagoons and marshes of Cadiz (Spain), again highlighting the complexity of the ancient landscape shown in Chapter 3.

Gil Filipe Vilarinho's paper (Chapter 9) is an excellent exponent of another tradition of studies that has flourished in the Iberian Peninsula in recent times: remote sensing strategies based on the combined use of different open-access geospatial datasets. The good results obtained in a small section of the Portuguese territory transpire a revolution in the making, which is only analogous to those experienced by other European countries in the last decades. I can neither hide nor deny a well-meaning envy at this prospect.

As is usual in these cases, the volume ends with a general reflection on the subject that motivated it (Chapter 12). After analysing the potential and limitations of spatial analysis tools and predictive models in archaeology at a time when these studies seem to have reached maturity, Philip Verhagen and Apostolos Sarris briefly assess the different contributions in the specific context of archaeological GIS in the Iberian Peninsula.

I mostly agree with the opinions expressed by the editors at the beginning of the volume and those authors responsible for concluding it. In their modest scope, the contributions in this book reflect that the use of GIS has finally caught on in the study of Roman archaeology in the Iberian Peninsula and that there is a pool of young researchers interested in taking up the baton in the near future. However, these tools are sometimes used in a very formulaic and finalistic way, relying on fully-tested solutions to answer specific questions. One may have the impression that these technologies

are quite often relegated in Iberian archaeology to a mere validation method instead of fully unravelling the potential of spatial analysis and predictive modelling on solid data grounds.

As a member of the academy myself, I believe it is worth reflecting on the extent to which this situation results from an archaic and unsatisfactory educational system for both students and docents. We usually fail to instil the importance of adequately formulating ambitious research questions and encourage independent thinking to look for imaginative solutions. In connection with this, we continue to face the challenges of the digital age with formal rather than substantive solutions. The inferiority complex and social depreciation of Humanities and Social Sciences in the Iberian Peninsula might be causing unexpected effects on the field of study in question. GIS can be seen as a hard science for many, with its results considered as reliable as its mechanisms are inaccessible. Do these social views also project a gender bias in this particular field as it happens in STEM disciplines? An 18-2 ratio in this volume's authorship is highly expressive yet inconclusive.

In short, the volume expresses to a large extent the contradictions of a discipline which has not yet adopted its mature form and which is developing unevenly across the territory. At the same time, it is the vivid impression of a change that is irreversible but whose course is still in our hands to decide.

José M. Costa-García
Departamento Prehistoria, Historia Antigua y Arqueología
Universidad de Salamanca
jm.costagarcia@usal.es

