

Valeska Becker\*

**Michael Doneus, Die hinterlassene Landschaft –  
Prospektion und Interpretation  
in der Landschaftsarchäologie. Mitteilungen  
der Prähistorischen Kommission 78. Verlag  
der Österreichischen Akademie der Wissenschaften,  
Wien 2013, 400 pages, 217 figures**

Like no other of the humanities, prehistoric archaeology draws on various fields of research to gain and augment insights into human behaviour in the past. From its very beginnings, geography has played an important role in this respect: as early as the 1920ies, archaeologists have reflected on the character and the history of ancient landscapes, soil types and palaeo-vegetation. As landscape archaeology, these early beginnings have a permanent place in modern-day research, with new methods still being incorporated into the already-large corpus of possible approaches to describe and analyze prehistoric landscapes.

It is this large and fruitful field of research that Michael Doneus deals with in his book “Die hinterlassene Landschaft – Prospektion und Interpretation in der Landschaftsarchäologie” (The bequeathed landscape – prospection and interpretation in landscape archaeology). The book was submitted as a *Habilitationsschrift* (post-doctoral lecture qualification) at Vienna University in 2009 and published in 2013. Michael Doneus is certainly predestinated for such a work: He is a professor for prehistoric and protohistoric archaeology as well as landscape and environmental archaeology at Vienna university and likewise vice director of the Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology in Vienna; furthermore, he is the director of the Vienna aerial archive.

The book is divided into six large parts with 19 chapters. After the acknowledgements (chapter 1, pp. 11–12) and a rather short introduction outlining the book’s setup (chapter 2, pp. 13–16), the first part with

---

\* Westfälische Wilhelms-Universität Münster Historisches Seminar, Abt. für Ur- u. Frühgeschichtliche Archäologie, Robert-Koch-Str. 29, 48149 Münster, Deutschland; valeska.becker@uni-muenster.de

the chapters 3–5 is dedicated to a discussion of terminology, methods and concepts of landscape archaeology.

It is evident that any form of landscape archaeology is closely connected to concepts of space and spatial order, but already since the beginnings of prehistoric archaeology as a scientific field and the invention of distribution maps, geography became an obvious choice for a transfer of methods. In chapter 3 (pp. 18–28), Doneus criticizes the rather careless use in German-speaking archaeology of terminology connected to landscape archaeology (*e.g.* landscape, territory, space). Meticulously, he even determines the linguistic roots of words like *Raum* (space), *Ort* (place) and *Landschaft* (landscape) and breaks down their connotations in archaeology. Especially important for the following chapters will be his distinction between the natural and the cultural landscape. Chapter 4 takes a closer look at the history of research regarding landscape archaeology (pp. 29–38). Doneus points out that settlement archaeology played a large part at beginning of the 20<sup>th</sup> century, especially in Germany, where these two fields were not so strictly separated at first. Doneus does not fail to mention names like Gustaf Kossinna and Herbert Jankuhn, although others, especially Kossinna's antagonists like Alfred Kiekebusch and Carl Schuchhardt, who pointed out the importance of incorporating the analysis of the landscape around a settlement into research, including the consideration of the character of the surrounding landscape, soil types, the climate and the biosphere (Kiekebusch 1928; Schuchhardt 1944), are not brought up. In any case, the interdependence of settlement and landscape archaeology at that time has to be stressed. It will not be until the 1990ies that these two concepts are being treated separately in Germany, *e.g.* by Jens Lüning in a paper published in 1997 (Lüning 1997), although Doneus pinpoints Thomas Saile's paper on "landscape archaeology in the northern Wetterau (Hesse): environmental analysis with a geographic information system (GIS)" from 1997 as the first work in this respect. Although short to the point of being sketchy, one might have mentioned Peter Haupt's introductory work on landscape archaeology (Haupt 2012). Doneus outlines the development of landscape archaeology in the English-speaking countries and outlines the influences from processual and postprocessual archaeology.

Finally, chapter 5 (39–46) deals with the concept of landscape archaeology in detail. Here, the reader may find a) useful definitions

both of landscape, settlement and environmental archaeology, and b) their respective fields of work, not neglecting to mention overlaps and intersections between the three.

Part 2 with its chapters 6–8 focusses on the description of a landscape. Doneus discerns between the physical and the cultural structure of a landscape and admits himself that these are entwined in many aspects since they are dynamic and influence each other (p. 47). Chapter 6 describes the methods of analyzing a landscape's physical structure (pp. 48–76). Some of this is again very detailed and may be intended for beginners to the subject, e.g. when Doneus describes the differences between the terms weather (*Wetter*), weather conditions (*Witterung*) and climate (*Klima*; cf. p. 49). Nonetheless, this thorough compilation of a landscape's physical conditions (pp. atmosphere/climate; lithosphere with relief, sediments, soils; hydrosphere with phreatic water, springs and river systems; biosphere) is very useful, and each of the spheres is discussed in relation to the landscape and its influence on humans.

Chapter 7 aims to pinpoint some of the factors that determine spatially relevant behaviour, thus creating a landscape's cultural structure (pp. 77–101). Very thoughtfully, Doneus places a section discussing environmental determinism at the beginning of this part and contrasts this with other models of human behaviour. Then, he sets out to examine the mutual reactions of a landscape's physical and cultural structures. Although Doneus stresses that environmental determinism is certainly outdated and that humans always have a choice how to act, bringing the term “agency” into the discussion (p. 80), the information given on the following pages leaves the reader with the impression that indeed a landscape's physical structure determined a large part of human behaviour in the past, and increasingly so the more one progresses into the past. However, Doneus' thoughts regarding the social-religious, the political and the historical sphere in landscape archaeology are very much worth reading and direct the attention to questions regarding communication, territoriality and religious concepts.

Chapter 8 is dedicated to the description of the material aspects of a landscape (pp. 102–125). Here, Doneus lists possible problems, advantages and disadvantages of traditional maps and GIS combined with archaeological data. Especially important is his statement that landscape archaeology aims at analysing the correlation and interaction

between sites and their landscape (p. 121), thus trying to shift the attention away from a find-based approach which is still common in German archaeology towards the space around a settlement; a demand which has been voiced time over time also by German researchers such as Georg Kossack (Kossack 1986; 1992) and others, yet without much of an echo.

Part 3 with its chapters 9–11 places methods of landscape archaeology in the focus. While chapter 9 (pp. 128–134) includes thoughts regarding site formation, site changes and site destruction, chapter 10 (pp. 135–240) can be viewed as the core of this part. It contains detailed information on methods of prospection, listing and elaborating procedures such as archaeological surveys, aerial photography, satellite remote sensing, LiDAR, geomagnetics, geoelectrics, geo-radar, electromagnetics, seismic technology, sonar, terrestrial topographic surveys, chemical prospection, biological prospection, the analysis of literature, documentation of finds, enquiries and the analysis of historic sources and field names. Each of these is described *in extenso*, and Doneus does not fail to point out possible pitfalls and problems with each method. Especially useful are the numerous figures in this chapter which illustrate and complement the text and which are taken mostly from the aerial archive of Vienna university. The chapter should be considered a must for all landscape archaeologists and is worth reading both for beginners and experienced researchers.

Chapter 11 (pp. 241–274) adds numerous examples for the methods described in chapter 10, most of which are based on Doneus' own works. Since he is himself the head of the Vienna university aerial archive, it is no wonder that the focus is on aerial photography and LiDAR, but other methods are covered as well. At the end of this chapter, Doneus points out that these, however, only constitute the basis for further work; he states that “archaeological prospection alone does not represent landscape archaeology (...) without data from prospections and excavations, the landscape under investigation remains empty and ahistorical” (p. 274).

This very problem is addressed in part 4 with its chapters 12–14. Here, Doneus distinguishes between an etic and an emic explanation in archaeology, differentiating “explaining” and “understanding approaches”. Chapter 12 (pp. 277–294) deals with the etic dimension of landscape archaeology which incorporates methods that search for and describe

patterns in settling. These are taken mainly from the field of mathematics and geography and incorporate models concerning distribution patterns such as nearest neighbour, kernel density estimates, Voronoi diagrams, Delaunay triangulations, site catchment analysis and predictive modeling. He offers examples for the use of these models and thoroughly describes shortfalls and problems when using them. Furthermore, he discusses models concerning the organisation of settlements (central places, core-periphery model, rank-size rules, gravity model), again with examples and a discussion of the underlying premises. Evidently, these models are based on assumptions of reproducible human behaviour and often contain a large proportion of environmental deterministic presuppositions; Doneus debates this concisely and points out their value if their restrictions are considered carefully (p. 293).

In order to cope with the deficits that arise from a sole use of rule-based models in landscape archaeology, chapter 13 attempts to tackle approaches to landscape archaeology from an emic side. The main aspect that is discussed in this chapter is phenomenology, a field of research that up to now is mainly observable in English-speaking countries. The focus shifts from the object to the subjective, including researchers' own understanding of a landscape, their feelings, thoughts and visual resp. audible communication. This *modus operandi* originates from postprocessualism and has earned a great deal of criticism. Doneus also voices his doubts regarding phenomenology and points out that, on the one hand, some aspects of phenomenology can be achieved by using GIS and, on the other hand, a modern researcher can hardly feel the same as a prehistoric human in a landscape; besides, a phenomenologist approach is rather time-consuming, and its applicability is debatable in the light of the drastic change most landscapes have undergone since prehistoric times.

Doneus tries to answer the question of how to unite the two approaches sketched in chapters 12 and 13 in chapter 14 (pp. 301–310). He targets GIS as an integrative method to combine landscape analysis and aspects of perception, especially visibility maps (viewshed analysis). Doneus himself points out the difficulties concerning the interpretation of such maps, e.g. a lack of knowledge of the palaeovegetation, differences in visibility connected with changing seasons or atmospheric conditions and a supposed contemporaneity of settlements due to insufficient methods of precise dating. Also, and this may be

even more important, a great number of variables that affect human behaviour and that Doneus names himself (p. 302), such as religious, social and cultural filters, cannot be integrated into this kind of analysis since they are and remain widely unknown.

Part 5 concludes Doneus' comprehensive study with the chapters 15–17 (pp. 311–346). Doneus reflects again on human behaviour, this time taking approaches from sociology into account, especially rational choice theory whose methodological background is explained in chapter 15 (pp. 312–317). This is then tested on two examples in chapters 16 (pp. 318–335) and 17 (pp. 336–346). The first application (chapter 16) is taken from research on ancient roads. The region Doneus selected for this is the Leitha mountains in Lower Austria, for which an extensive network of ancient roads had been discovered in the course of LiDAR scanning of the region. Late Bronze Age / early Iron Age hillforts and ravines crisscrossing the mountains could be located. Employing cost-surface analysis (least-cost-path analysis) resp. friction surface, Doneus discusses the connection of the sites via the old roads and lists possible determining factors for the selection of paths (technology of transport, visibility, taboo zones, places of collective memory, topography, rivers, soil consistency and vegetation, p. 331). The results differ according to different parameters such as slope, visibility and openness / prominence, slope and openness being the most likely factors for the layout of the routes during the late Bronze / Iron Age.

The second example (chapter 17, pp. 336–346) is taken from the monastery St. Anna in der Wüste in the Leitha mountains. Doneus elaborates on environmental parameters of the site and points out that they offer only a limited access to the reasons why the monastery was placed in such a rather remote spot. A comprehensive analysis of written sources and etchings from the time, however, gives insight into the religious rules that were applied when setting up the monastery. The demand for seclusion and the wish to create the outline of the monastery boundaries to resemble a heart can be recognized in the layout of the site. A modeling of visibility and topographic prominence yielded evidence that the surrounding hermitages had a clear view of the monastery and that the church spire was likewise visible from the outside, whereas the monastery itself and its walls were only partly visible. Doneus states that even without the written sources, these factors would have become obvious in the analysis.

Part 6 with chapters 18–19 offers a German summary of the text and an extensive bibliography (chapter 19, pp. 356–398).

With this book, Doneus has certainly set new standards in the field of landscape archaeology. The text is worth reading both for beginners and advanced researchers, offering a broad overview of the subject as well as profound and careful considerations concerning methodology. The well-arranged composition of the work adds to its consistent comprehensibility. Although clearly meant for German-speaking readers, an English summary would have been useful especially for researchers from other parts of continental Europe.

It is understandable that most examples used in the book derive from Doneus' own work and his research at the aerial archive at Vienna university and the Vienna Ludwig Boltzmann Institute. He does offer bibliographic information on other works as well, but some important research in the field of landscape archaeology goes unmentioned, e.g. the works originating from the Kiel graduate school "Human Development in Landscapes".

The meticulous outline of the course of action one should follow when describing the physical and cultural structure of a landscape, as it is laid out by Doneus in part 2 of the book, is certainly a valuable guideline. One would wish that he would apply this once in one of his examples, but these do not bother with the physical description of the landscape and rather focus on selective aspects.

Nonetheless, the book will certainly become a benchmark in the field of landscape archaeology. Its richness in content, its thorough methodology and its illustrative examples invite any reader to pick it up again and again to explore sections of it in more detail and gain a comprehensive and state-of-the-art overview of a growing field of research in archaeology.

## References

- Haupt P. 2012. *Landschaftsarchäologie. Eine Einführung*. Darmstadt: WBG.
- Kiekebusch A. 1928. Siedlungsarchäologie. In M. Ebert (Hrsg.), *Reallexikon der Vorgeschichte* 12. Berlin: de Gruyter, 102–117.
- Kossack G. 1986. Nachwort. In H.J. Eggers (Hrsg.), *Einführung in die Vorgeschichte*. 3. Auflage. München: Piper, 298–312.
- Kossack G. 1992. Festvortrag „Siedlungsarchäologie als Weg zur Kenntnis von Leistungszusammenhängen bei agrarisch wirtschaftenden Verbänden in prä-

historischer Vergangenheit". In 5. Heidenheimer Archäologie-Colloquium: *Frühe Eisenverhüttung auf der Ostalb*. 2. Verleihung des Kurt-Bittel-Preises der Stadt Heidenheim für Süddeutsche Altertumskunde, 11. Oktober 1991. Heidenheim: Heimat- und Altertumsverein, 90–111.

Lüning J. 1997. Landschaftsarchäologie in Deutschland – Ein Programm. *Archäologisches Nachrichtenblatt* 2(3), 177–195.

Schuchhardt C. 1944. *Aus Leben und Arbeit*. Berlin: de Gruyter.