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Bridging the Gap – Integrated Approaches in Landscape Archaeology. Editorial

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1 Session

This special volume of eTopoi is dedicated to the proceedings of our session, *Bridging the Gap – Integrated Approaches in Landscape Archaeology*, held at the 3rd International Landscape Archaeology Conference (LAC) 2014 in Rome, Italy. The initial idea for our session was that the discipline of landscape archaeology is a mixture of at least two strands, resulting from the ambiguous definition of the term landscape in the participating disciplines: one strand thinks of landscape as a physical entity open to human intervention, while the other thinks of landscape in terms of its social and cultural constructiveness. The contributions at the 1st and 2nd Landscape Archaeology Conferences in Amsterdam and Berlin focused especially on the first strand. Studies investigating the second strand and discussions about an integration of both strands are rare. Nevertheless, at the 2nd LAC 2012 in Berlin, there was a session on *Theoretical Concepts in Landscape Archaeology* that raised the issues of this skewed focus on the subject and functioned as a platform to discuss the different disciplinary concepts and access points in landscape archaeology. For the 3rd LAC 2014 in Rome, our intention was threefold: (1) to cross-check the progress of the theoretical debate, (2) to continue the discussion, though this time with a focus on the actual practices of the researchers, and (3) to start a debate about the pros and cons of approaches that aim to integrate both strands of landscape archaeology.

2 Integration

It is common knowledge that landscape archaeology requires active collaboration among a broad range of disciplines. The task of understanding landscapes as holistic entities necessitates expertise from both the humanities and the sciences. One success story has been the multidisciplinary collaboration between geoscientists, who reveal information about environmental characteristics, and archaeologists, who investigate the traces of human occupation. The results from both are interpreted together in order to gain insights into natural as well as social dynamics. The investigation of pollen and phytoliths, for instance, enables researchers to gain information about the cultivated plants and vegetation history of an area. By collaborating with archaeologists and combining the results of both disciplines, they are able to answer complex interrelated questions of how these specific characteristics were shaped by the people who lived there.

But there is more. Once an understanding of the interrelation has been achieved, landscape archaeology must take a step further and question what the results mean: *What does interrelation mean to the investigated humans and societies?* and *What does interrelation mean to the participating disciplines?* For example, what are the societal consequences of adaptation

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1 Kluiving, Lehmkuhl, and Schütt 2012, 2, 4; Bebermeier et al. 2013, 1.
practices? What are the societal prerequisites to facilitate adaptation? Which societies did adapt, and which did not? Is the means of adaptation related to the characteristics of landscapes in terms of their natural characteristics? Or is the pattern of adaptation related to the societal strategy of creating landscapes, a strategy that is not related to the natural characteristics of the investigated areas? There are many more questions of this type, and what they share is a shift in perspective from etic to emic.

This shift in perspective forces us to rethink the meaning and explanatory value of our data. In the multidisciplinary version of landscape archaeology, i.e., in its etic perspectives, data are used and analyzed based on our discipline-specific paradigms. When we try to shift our focus to the emic perspective, it is these discipline-specific paradigms that need to be questioned. The creative process is to think about research strategies and methodologies from a different perspective; this is the moment when our interdisciplinary collaboration in landscape archaeology comes in. Discussions about the subject should start at the level of method selection and data evaluation. If geoscientists can help archaeologists to see what they see, and vice versa, the collaborative landscape-archaeological mode of conducting research becomes more fruitful, and the proposed 
interdisciplinary hermeneutics
of Meier and Tillesen take place.²

These claims are not new, nor have they been resolved. Challenges occur on the ontological and epistemological as well as the practical and personal levels. The contributions you will find in this special issue grapple with these questions in one way or another; reading them, it becomes obvious that there is no one appropriate way to conduct research in landscape archaeology. Rather, we see a potpourri of different approaches, ranging from the technical and computationally intensive to the more traditional approaches. What unites them is their aim: to investigate aspects relevant to humans, from an etic and emic perspective, during a time that is not directly accessible to us now.

3 Contributions

3.1 Benefits of interdisciplinary work

Nykamp et al. analyze LIDAR-based digital elevation data, applying geographical and geomorphometric methods to relate particular morphological and hydrological characteristics to human activities in the vicinity of a Late Bronze Age fortification in Romania.³ Following the hypothesis that human activities result in a significant alteration of the relief and the development of particular morpho-hydrological characteristics, this contribution shows how interdisciplinary work benefits from using landscape-archaeological questions as the driving guidelines for joint research.

Wagalawatta et al. present an inventory of ancient quarries and reconstruct the landscape development triggered by the quarrying activities, combining an archaeological survey of the ancient quarry sites in the hinterland of Anuradhapura, Sri Lanka with geoscientific knowledge.⁴ Their interdisciplinary approach provides new insights into the influence of humans exploiting stones as a natural resource for construction material and their landscape.

Thelemann et al. use a classical landscape-archaeological approach, settled at the intersection of archaeology and geography, as the methodological foundation to analyze the introduction of iron smelting to Lower Silesia, Poland, from an interdisciplinary perspec-

² Meier and Tillesen 2011, 31–33.
³ Nykamp et al. 2015.
⁴ Wagalawatta et al. 2015.
3.2 New methodological approaches

The natural character of a region influences the preservation conditions of archaeological artifacts and findings. Especially in dry regions like the European aeolian sand belt (North European Plain), the poor preservation conditions of archaeological remains impede the reconstruction of these long-settled traditional cultural landscapes. Groenewoudt introduces a new systematic methodological approach in his paper to integrate landscape-archaeological data from different landscape entities (in particular from drylands and neighboring wetlands). His approach allows landscape archaeologists to systematically analyze landscapes with different characteristics and to integrate data from different scales.

Groenhuijzen and Verhagen introduce a new set of GIS-based tools as a means for the spatial analysis of local-scale transport during the Roman period in the Netherlands. Their computational approach permits the integration of results from palaeogeography, physiology, and archaeology and sheds light on aspects of local to interregional transport during this period.

Michel et al. investigate the potential orientations toward topographic and/or astronomical points of two roundels located in Germany, specific archaeological sites that date to the Neolithic period. Besides the application of well-established view-shed algorithms, the authors present a methodological approach to investigating the archaeo-astronomy setting of these roundels. Presenting a routine developed by the researchers to match possible astronomical features to palisade gaps, this contribution enhances the variety of methodological approaches in archaeo-astronomy. Furthermore, the authors highlight the meaning of a precise database that includes data from geophysical surveys and excavations.

Addressing the problem of tracing the introduction of wool as a raw material for textile production, Schumacher et al. present an approach that also integrates data and methods from different scientific disciplines. In this paper, it is the thematic research focus, namely the analysis of spatial and temporal trajectories in the spread of the wool-bearing sheep, that constitutes the bridge between the different disciplines involved.

Based on a case study on settlement strategies in Tuscany during the Bronze Age, the contribution from Morabito sensitizes readers to (1) the integration of the senses of landscapes (religious, physical, etc.) to their inhabitants and (2) the meaning of combining different scales and data sources in a GIS-based analysis of a settlement pattern. In their conclusion, the author addresses the different advantages of GIS-based approaches as a framework to overcome the limitations of archaeological data.

3.3 New scientists

Lindholm et al. present a pedagogical approach to integrating the humanities and natural sciences in the academic training of young scientists. The foundation of the concept
introduced lies in the idea that training in landscape analysis, archaeology, and GIS, based on a deeply rooted theoretical background, sustains students and young researchers to develop skills and methodological competences in analyzing and understanding landscapes in an interdisciplinary context.

4 From Bridges to Pillars?

The compilation of contributions in this special issue addresses the question of how to bridge the gap between the humanities and the sciences in landscape archaeology. The authors in this special issue address the following aspects of implementing integrated approaches:

1. Negotiation and discussion of joint research questions for the development of a methodological research design
2. Relevance and applicability of GIS-based approaches to manage and organize ‘big’ spatial data, as well as the spatial and geostatistical tools for its analysis
3. Integration of data of different scales and precision
4. Education of the young researcher

These categories address rather heterogeneous but nevertheless important aspects of a potential bridge in landscape archaeology and indicate that successful landscape archaeological collaboration “cannot be achieved on the basis of traditional archaeological research alone.” Such a modern understanding of research helps to develop new methods that enable [landscape] archaeologists to obtain both a holistic perspective on ancient landscapes and to focus on specific issues and activities connected to ancient landscapes.

New questions can be stated and new insights achieved. Hence, “landscape [archaeological] research […] is a collaborative learning process.” This nicely indicates that landscape archaeologists are people characterized by continuous open-mindedness. As one person in the audience during the discussion on our session at LAC 2014 said: “Building bridges is not so much about theory. It is rather an endeavour of mutual respect and communication that enables shared questions and collaboration.” We hope that these activities continue and intensify. Perhaps this will build the foundation for a community of scientists who are able to develop a shared theoretical paradigm that no longer needs to ask questions about bridges, but constitutes itself as a “pillar” between the sciences and the humanities – a challenging task for all integrative and holistic disciplines that has yet to be achieved.

15 Groenewoudt 2015, Groenhuijzen and Verhagen 2015, Morabito 2015
16 Lindholm et al. 2015
17 Groenhuijzen and Verhagen 2015, 41.
18 Morabito 2015, 74.
19 Lindholm et al. 2015, 103.
20 See, e.g., Weichhart 2005, Wardenga and Weichhart 2006
References

Bebermeier et al. 2013

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Groenhuijzen and Verhagen 2015

Kluiving, Lehmkuhl, and Schütt 2012

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Morabito 2015
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Schumacher, Schütt, and Schier 2016

Thelemann et al. 2016

Wagalawatta et al. 2015

Wardenga and Weichhart 2006

Weichhart 2005
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Dr. rer.nat. (Berlin 2013), received his doctorate in Berlin with a thesis on Central Places and the Environment – Investigations of an Interdependent Relationship; M.Sc. and B.Sc. in Geography. Since 2013 he has served as a research assistant and coordinated the Topoi Lab in Research Area A. From 2009 to 2010 he was a research assistant in Topoi, working on the project Monti Navegna e Cervia (A-I-9). Currently his research is focussed on “Integrative Modeling of Socio-Environmental Dynamics” within the CRC1266 at the Christian-Albrechts-Universität zu Kiel. Research interests: human-environmental interactions, especially in connection with geomorphological and geomorphometrical processes, (pre)historic landscape development under human influence and theoretical geography.

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