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MODELLING THE LANDSCAPE. FROM PREDICTION TO POSTDICTION

During the 7th edition of the Landscape Archaeology Conference (LAC 2022, online meeting), the session *Modeling the landscape. From prediction to postdiction* was held. The idea of the organizers was to allow different scholars to discuss the use of models for the study of ancient landscapes in both the "canonical" predictive mode and the more "experimental" postdictive use. But what is meant by these two terms? By the term predictive we mean all those models that have played a key and significant role in recent decades. They have been used in archaeology to handle the complexity of data. However, researchers have also used these tools to reconstruct past scenarios. Early attempts to create predictive models in archaeology focused on settlement choices and were driven by the need to manage cultural heritage (Van Leusen 1992, 2002, ch. 1.3; Van Leusen, Kamermans 2005). Today, the human-environment relationship seems the most fruitful development for obtaining new knowledge. Connectivity, resource exploitation, and long duration fit well with a predictive approach. Phenomenological experiments also look promising.

However, the set of predictivity-based approaches returns a certain degree of rigidity (Tab. 1). It is precisely this rigidity that underlies the criticism of determinism, made by more skeptical researchers against the use of models for historical reconstruction. Thus, the debate on the use of modeling is actually polarized between those who consider it a fundamental tool and those, on the other hand, who think that it generates inevitable and predictable results. The proposed session aimed to overcome this alternative toward postdictive models (Citter 2007; Brogiolo *et al.* 2012; De Guio *et al.* 2013, 2015; Arnoldus-Huyzendveld, Citter 2014; De Guio 2015; Arnoldus-Huyzendveld *et al.* 2016).

Predictive Model	
Strengths	Weaknesses
– Manage the data set's complexity – Reconstruct past scenarios too (settlement choices, heritage management, connectivity, production …)	– Certain degree of rigidity – (Determinism?) – Bias of available data

Tab. 1 – Strengths and weaknesses of predictive models.

Postdiction is flexible because it starts from observed data and produces simulated scenarios by mixing different human and environmental agents.

The best-fitting scenarios return the most likely set of agents involved. This allows us to take advantage of large amount of data already produced and, at the same time, to create a rigorous theoretical and methodological discussion. Reconstructing human behavior over time is no less important than reconstructing past landscapes. On the contrary, the former has shaped the latter. However, there is a somewhat problematic aspect: currently a serious and in-depth reflection (both theoretical and methodological) on the topic of postdictive models is missing (Tab. 2).

Predictive Model	
Strengths	Weaknesses
– Flexible (produces simulated scenarios by mixing several agents) – Allows us to profit of the large amount of data and, at the same time, to boost a serious theoretical and methodological discussion	– It lacks a rich theoretical and methodological discussion – Uncertainty of selected parameters among source data – Chronological set

Tab. 2 – Strengths and weaknesses of postdictive models.

To initiate a theoretical and methodological discussion on how to refine the use of these fundamental tools, scholars from various disciplines and backgrounds were invited to present different models used as case studies to analyze ancient natural and anthropogenic landscapes from Prehistory to Late Antiquity. In fact, regardless of the chronological span presented, through the comparison of different analytical techniques used and methodologies applied to different contexts, an attempt has been made to focus on the state of the art of the debate on the use of pre-postductive modeling for the analysis of ancient landscapes and to indicate possible ways forward.

The contributions cover a wide chronological and geographic span (Fig. 1): starting with the Prehistory of Asia (A. Kafash *et al.*) and Europe (G. Bilotti; G. Pizziolo; S. Caracausi *et al.*), continuing with the Protohistory of Italy (L. Burigana; A. Sotgia; M. Cabras *et al.*), moving to the borders of Europe in the Classical period (A. Bödöcs; V. Ria, R. Rizzo; P. Trapero Fernández), and concluding with the Middle Age, once again in Italy (C. Citter, Y. Paciotti; A. Cardone) – a country in which a *longdurée* approach is widely applied (C. Mascarello), as in the final text of this collection. From the point of view of the topics covered, however, there are many shared and overlapping points in the presented research (Fig. 2), such as resource management in the landscape (both from a productive and administrative point of view), settlement choices or connectivity between different sites. This shows how the use of models completely crosses the entire archaeological discipline and is one of its most important tools.

We hope that the publication of the papers presented in the conference session will be both a good starting point for those who want to approach

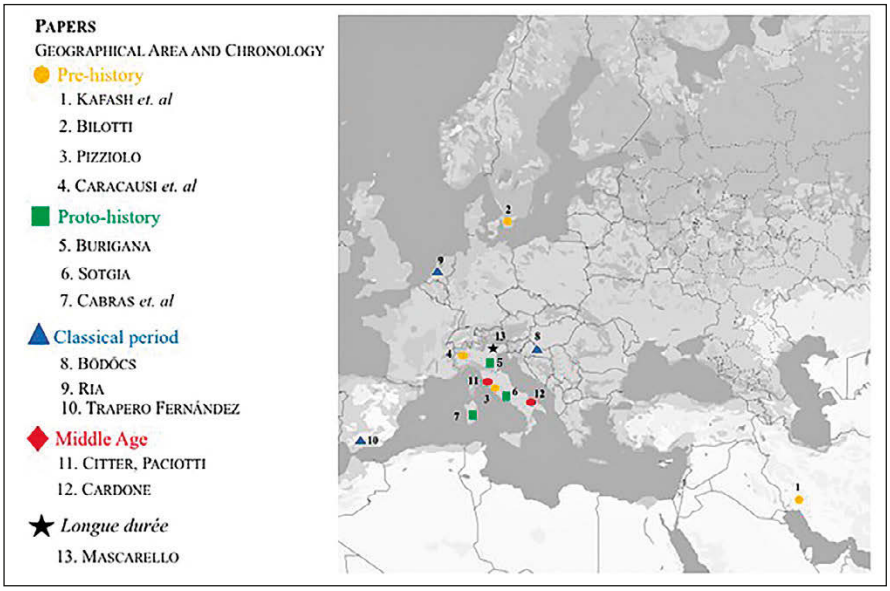

Fig. 1 – Geographical area and chronology of the papers of the session.

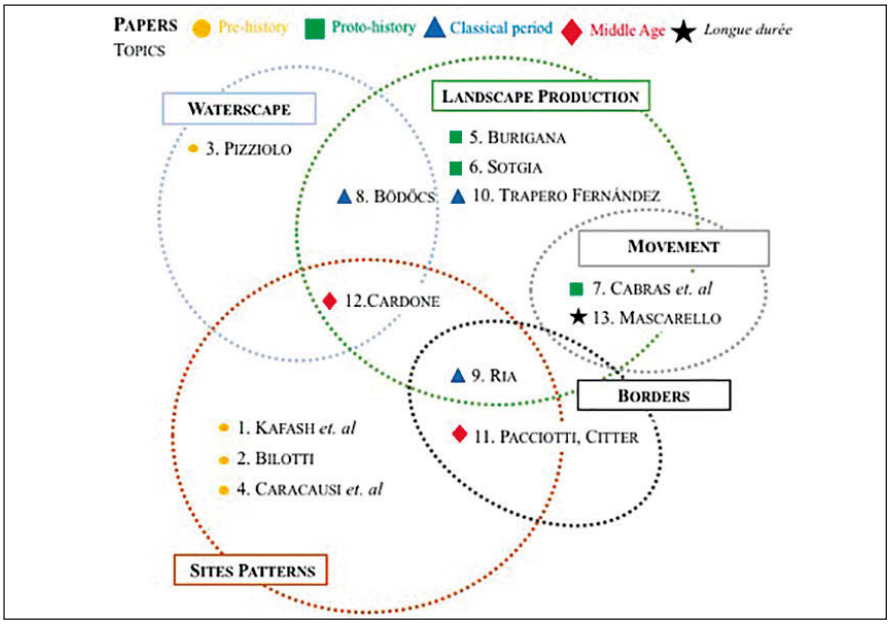

Fig. 2 – Main topics of the papers of the session.

this topic, as well as a further support for those, on the other hand, already making use of models and wanting to contribute to broaden the theoretical and methodological reflection about this very important tool of the archaeological discipline.

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