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## The historiography of landscape research on Crete

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### Citation

Gkiasta, M. (2008, April 15). *The historiography of landscape research on Crete*. *Archaeological Studies Leiden University*. Archaeological Studies Leiden University. Retrieved from <https://hdl.handle.net/1887/12855>

Version: Not Applicable (or Unknown)

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**Note:** To cite this publication please use the final published version (if applicable).

## 7. CONCLUSIONS: Archaeological Survey Data Integration

### 7.1 THESIS SUMMARY

The aim of this thesis has been to construct a historiography of landscape research in Crete from the time of the Travellers to the present day (chapter five). This has been seen in the context of Aegean and world-wide landscape archaeology (chapter one). In the analysis of archaeological landscape projects on the island, special attention has been given to theoretical frameworks that have guided landscape research and to its methodological practice, both of which are reflected in the results produced (databases, chapters three and four). The potential of various projects has been assessed (chapters three and six) and there has been an attempt to use results in order to reconstruct an overview of human activity in the area of Siteia as a case study (chapter six). As a result, we have concluded on the importance of landscape research from all traditions and approaches for the study of ancient societies, but also on the diverse possibilities different projects offer, and on the need to assess and filter the information retrieved so as to fit our questions and goals. A very significant outcome of this research has been the realization of the need to be explicit regarding 1) the relationship between data and interpretations and 2) on the kind of information we need to produce and publish from landscape research so that we promote archaeological knowledge and allow a higher level of communication within the archaeological community.

### 7.2 THE NEED TO INTEGRATE ARCHAEOLOGICAL LANDSCAPE RESEARCH DATA

It is beyond doubt that landscape archaeology and in particular modern intensive survey projects are an indispensable tool in the study of regional histories and the uncovering of socio-cultural processes. Through regional surveys we can study relationships between different kinds of human activity and the physical landscape, identifying patterns or lack of patterns, and assessing variability over space and time. We can also study relationships between socio-cultural expressions, space and time, as well as the survival of their material signature over time. It has to be acknowledged that a significant part of human activities is inscribed in the landscape, and it is through such inscriptions that we may guess social, economic, political and ideological conceptuality and practices. Regional surveys illuminate factors that contribute to the construction of cultural landscapes (from the expression of a religious feeling to subsistence potential) and allow a great flexibility in studying space through time and vice versa. A landscape ecological approach that seeks to understand the multi-scalar and polymorphic interrelationships between man and environment in multiple time and space levels, and which in fact studies the physical and the cultural landscape as a unity and not as two separate entities that are connected, offers better chances in acquiring some understanding of social processes.

The revolutionary character of regional surveys in archaeological interpretation is not equated simply to the greater number of sites that we are able to recover, even though site densities per period has been the principal interpretative platform. In fact, it is site densities that support patterns of nucleation / dispersal, population numbers, agricultural intensification, trends in locational preferences and hierarchy, which in turn are used to describe economic processes and socio-political structures. However, social explanation and change can not be studied purely on quantitative measures, on the contrary, unless we use sufficiently the qualitative nature of the data we collect, we are likely to be led to wrong conclusions. At the same time we need to explore multiple time scales as it is within temporal diversity that human beings, societies and landscapes are born and evolve. It is not enough to know how many sites occur per period; we need to know how many of what kind, what duration and why. To be able to extract all this information from the surface record would of course be ideal, but it is hardly feasible due to the fragmentary nature of survey data. However, we should try to approach such questions by exploiting to the best of our potential the wide variety of opportunities that archaeological landscape research offers.

Furthermore, one of the most significant attributes of modern Landscape Archaeology is that it has promoted regional and inter-regional comparisons, which allow us to ask complex questions looking at trajectories over wider spatial scales. In fact, unless we compare identified patterns with those of other regions, we are likely to be restricted to the description of patterns / trends, but not be able to approach in-depth explanations. Historical developments do not concern isolated spatial windows, which coincide with survey boundaries. At any rate, whether we want to understand historical processes in a specific region or view regional processes within a wider inter-regional framework, it is necessary to be able to understand and assess the relationship between survey data and interpretations and also to be able to integrate them with those from other surveys.

### 7.3 PROBLEMS IN DATA INTEGRATION

The merits of combining data and interpretations from different surveys for the reconstruction of larger social schemes, have of course increased the desire to do so and this is apparent in two ways: on one hand there are more synthetic works that explore patterns and developments across regions; in Crete, most archaeologists compare the results of their landscape research with those from other surveys and comment on similar trajectories across the island or identify regional variation. On the other hand, there is a growing awareness of the problems that different methods cause in data integration and researchers commend on the need to produce data that is comparable (Cherry 2004; Millett 2000). Integrability problems, however, relate as much to different methods, concepts and approaches, as to their inadequate publication.

#### 7.3.1 METHODOLOGICAL VARIABILITY

Since the first days of systematic intensive surveys there have been numerous discussions on appropriate methods, site definition and the assessment of recoverability. It is now acknowledged that geomorphological studies illuminate episodes that may hide remains of human activity of certain periods, while the evaluation of visibility allows an assessment of pottery/finds recoverability. Likewise, sampling can help us define sites in relation to off-site activity, assess bias, extrapolate patterns and study intensity and nature of landscape use, as well as on-site changes over time. By default, the data collected in interdisciplinary projects have greater potential and differ from those of more traditional approaches (e.g. walking the landscape intensively but without sampling). However, different scales of collection and analysis cause integrability problems even within the same project and there are researchers who explore various techniques and methods in search of a solution (Bevan and Conolly: KIP web site).

There could of course be various suggestions regarding methods and approaches in the recording of the off-site and on-site record, the study of the environment and its relationship with material remains, the collaboration with other disciplines or the application of analytical techniques. However, it is not my purpose here to discuss and compare different methodologies. We will never have the same methods applied, sometimes not even within the same survey, and in fact methodological diversity is often dictated by the nature of research questions, as well as funding, time available, understanding of survey methods, difficulty of the landscape and potential for interdisciplinarity. To my opinion, a problem of higher priority we need to cope with, is that methodology, data and interpretations are not published in a consistent manner with the goal to exemplify how they interrelate.

#### 7.3.2 LACK OF PUBLICATION STANDARDS

To elucidate man-environment interrelationships over time and study social structures and changes, we need to understand landscape data and their potential to lead to interpretative schemes. There is an urgent need for some explicitness in definitions and data presentation, so that we understand what different concepts mean for different people (e.g. 'site' or a specific function such as farmstead) and how data are linked to interpretations.

Usually, reports present an inconsistent description of observations, which are not always clearly linked to interpretations. The fact that there are not some standards regarding presentation, results to the omission of important information. Thus, we usually do not know the exact area that has been surveyed or how precision relates to the recovery of different sites. We also do not know how site sizes change over time and what ranges of data quantity and quality are used to conclude on a specific function and chronology. Various terms are used with no explicit definition of what they mean and the same term may be used with different meanings in different periods. Quite often, it is extremely difficult to be confident of what researchers actually suggest, if they express certainty regarding an interpretation or if they do not know. However, to be able to integrate interpretations from different projects and assess whether we agree or not, it is necessary to obtain full understanding of what these essentially mean.

#### **7.4 TOWARDS A MEANINGFUL PUBLICATION OF SURVEY, DATA AND INTERPRETATIONS**

Landscape archaeology is supposed to aim at the reconstruction of social histories and not at static landscape pictures in chronological order. Interpretations may in fact discuss complex social relationships and indeed illuminate ancient societies, but it is of ultimate importance to understand what data are used to result to specific interpretations, and how these are interlinked in larger interpretative schemes. In other words, archaeological presentation should clarify the relationship between data observed and interpretations suggested. As a result of my attempt to understand interpretations from different survey projects and assess their integrability, I present a summary of suggestions regarding the information we need to know:

- A clear definition of research aims and problem orientation as well as of theoretical background. Also, a clear description of methodology and a discussion on its potential and restrictions, relevant to specific aims.
- Off-site and on-site walking and collection techniques and an assessment of their potential. The choice to use diverse methods should be explained and its probable impact on results assessed. We need to understand when techniques change and why, and how they may relate to data observed. A relevant issue is visibility. It should be clear how it is assessed and ideally it should be a variable relevant to material classes and not just a constant equated with vegetation coverage applied invariably to all classes of data. In any case, the most important thing we need to know is how it is used in relation to density counts and how the recoverability of certain sites and classes of data is assessed.
- The size of the sampled population, which may be only a small proportion of the target. Also, the precision of the surface seen, as it relates to the degree of recovery of different sites depending on their size. Precision is relevant to number of walkers, time spent on the field and walking interval. If appropriate, it should be given in ranges.
- Off-site and on-site densities. The latter should relate to sites of different function and chronology, and thus in multi-period sites on-site density should be estimated for all the different periods. It is important to have a range and average density for sites of different function and chronology.
- Site sizes per chronological and functional class used.
- As well as quantitative, we need the qualitative criteria used to infer site characterisations, e.g. environmental and landuse observations. There must be a clear understanding of how much and what kind of data lead to a specific interpretation. We should remember that a Minoan farm (for example) is not data, but an interpretation, linked to various observations.
- Since site concepts are used to describe socio-economic structures, we need clear definitions for the different chronological and functional interpretations used, which in fact may vary from period to period. Definitions, should not only explain their relationship to quantity and quality of data, but their meaning in relation to regional socio-political and economic patterns described. For example what does

a hamlet mean in socio-economic terms in a specific chronological framework and what is the difference between a farm and a metochi in the same and in different periods? What is to be said regarding a site's life-cycle, a permanent, temporary and seasonal use? Controversial terms such as 'farmstead' without further explanation of how the term is conceived can be rather problematic. 'Farmsteads' are usually compared with contemporary 'metochia', which however are of seasonal use and can not be used to boost population numbers; On the other hand, the ethnographic record shows that there are several sites in the countryside used temporarily or seasonally, which can greatly enhance our understanding of the relevant societies.

- Classes of function and chronology should be presented in multiple scales of resolution. For this, a similar methodology to the one followed in the 'Chronology/Functions' table of the 'Surveys' database is proposed, but at a better precision. If we are able to distinguish a CL burial in a 'GR settlement and burial' site, the site should be classified in both finer and more general classes of function and chronology. Function classes should include all levels and scales of human activity, from habitation to industrial, religious and ideological proliferation. The temporal component should be respected and classes should relate to the social aspects we study.
- Doubtful chronology and function interpretations as well as unknown should be treated as separate classes. Possible interpretative models should respect the variability of site characterisations, whether certain, possible or unknown and explore various models of explanation.
- Chronological and function interpretations should separate between sites on the regional scale and 'sites' on the site level. We need to distinguish between interpretations that illuminate regional use of the landscape and those that shed light into site organisation and history. Obviously, if a site catalogue includes e.g. 10 'sites' which are part of the same settlement, these can not be included in regional comparisons.
- Presentation should not be reduced to 2-dimensional dot maps. If the landscape is studied as a 3-dimensional surface, we should be able to visualise it as such and explore variations in human activity across space regarding intensity, character, time and its relationships with geography and environment. Visualisation is an important part of understanding; therefore, it should represent interpretative schemes, even possible ones.
- The environmental data observed, should also be linked to interpretations diachronically and not be treated as a 'taken for granted' context of human activity, separate from the description of social systems.

Most current research within landscape archaeology tries to decipher social structures and processes that are inscribed in the landscape and which can be used to reveal past histories. For this reason it is important to study landscape evolution in its wholeness (as the complex relationship between its environmental and social components) and not simply record changes of site locations over 'stagnant' time slices. We have to remember that social dimensions do not equal spatial patterns. Sites cannot be treated as a homogenous entity whose spatial distribution and rough chronological classification constitutes the appropriate analytical tool to study social history. It is necessary to explore space and time relationships at a variety of levels, and achieve better theorization on our interpretative methodologies. Above all, we need to pursue clarity over assumptions and interpretations and communicate successfully what we study and why, presenting our interpretations in ways that they can be understood and meaningfully used by the wider academic community.