



Local landscape organization of mobile pastoralists in southeastern Turkey



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ABSTRACT

Survey archaeology can contribute a unique perspective to the history of mobile pastoralism by investigating *local pastoral landscapes*—the organization of resources and features immediately surrounding a campsite. This paper examines empirical evidence for mobile pastoralists' modes of inhabiting and transforming local landscape over the last 600–700 years on the edges of the Upper Tigris River Valley, southeastern Turkey. Multispectral satellite imagery analysis is employed to spatially relate vegetation patterns and archaeological features connected with herding. Statistical analysis of cost distance rasters enables quantitative spatial analysis of feature distribution in the landscape. Three main conclusions about pre-modern mobile pastoralists are drawn: (1) Mobile pastoralists altered their local landscapes in order to shelter humans and animals, collect water, and improve fragmented pastures of variable quality. (2) Pasture and water features were fixed, re-usable investments that encouraged seasonal re-inhabitation. Over time, these features became *landscape anchors*—geographic foci that structured the spatial organization of local landscapes. (3) The topographical position of domestic and herding features would have resulted in vertical daily movement patterns for humans and animals. The study represents a first step in reconstructing mobile pastoralists' dwelling spaces and pre-modern land-use strategies on the fringes of Mesopotamia.

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Introduction

For approximately 9000 years, Near Eastern economy and society consisted of groups existing along a continuum between fully sedentary agricultural lifestyles and mobile pastoral lifestyles involving long-distance transhumance. To date, Mesopotamian archaeologists have collected data almost exclusively on the sedentary sector of ancient societies with economies based primarily on agriculture. As a result mobile pastoralists are typically incorporated into archaeological models solely through biased historical accounts written by urban elites and ethnographic analogy. These approaches have resulted in a limited understanding of the historical roles of mobile pastoralists in Near Eastern society, little recognition of change and individual agency in pre-modern pastoral land-use, and little knowledge of how mobile pastoralists transformed the landscape or how they organized or conceived of the territories in which they lived and moved. Recent books specifically focusing on mobile pastoralists' role in Near Eastern history (e.g., Porter, 2012) do not incorporate any archaeological data

directly concerning these groups or their primary subsistence activity (herding).

Pre-twentieth century AD mobile pastoralists have essentially been rendered “people without history” (Wolf, 1982) because their actions and activities are almost always viewed through the lens of the history of agricultural societies and/or the lens of ethnographic analogy to pastoral groups of the 1950s–1980s. The “silence” of mobile pastoral history (*sensu* Trouillot, 1995) has been created by a number of factors in the history of archaeological scholarship. Such factors include archaeology's role in furnishing museums with objects, the privileging of deeply stratified mounds for excavation, evolutionary theories linking agriculture with progress and sociopolitical complexity, and materialism in the modern world. Mobile and non-agricultural groups are frequently associated with tribalism, a lack of visible material culture in the archaeological record, and a relative lack of change and progress. The association of mobile groups with peripheral or marginal landscapes considered less modified and less economically productive than agricultural landscapes heightens this perception.

Archaeologists have rarely directly studied mobile pastoralists for a variety of additional methodological reasons. The idea that mobile pastoralists preferred containers of lighter, more ephemeral materials over ceramic vessels has long dominated explanations

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for the difficulty archaeologists experience in locating and dating mobile pastoral sites. However, a multitude of ethnographic examples show that mobile pastoralists sometimes use, produce, and form part of their identity around ceramics (Barnard, 2008; Doumani and Frachetti, 2012; Grillo, 2012; Hodder, 1982: 37–48, 92–93; Wendrich, 2008). Further, landscape archaeology offers more concrete reasons for why the archaeological sites of mobile pastoralists remain challenging to detect and to date. Perhaps most critically, research programs have not focused on the agriculturally marginal areas outside of alluvial plains in which mobile pastoralists spent a significant part of their annual cycle, and in which surface indications of their ephemeral sites are most likely to be preserved (Hammer, 2012; Ur and Hammer, 2009). Specific methodological challenges arise from harsh natural taphonomic processes at work in areas outside of alluvial plains, such as colluvial sedimentation in mountain valleys and aeolian deflation in deserts; short periods of inhabitation, which result in the accumulation of less materials and organics at a site; long periods of abandonment, which give natural or cultural taphonomic processes the opportunity to begin to erase or obscure thin inhabitation layers or to disturb stratigraphy; and the frequently ephemeral nature of architectural features within pastoral camps, which facilitates continual modification of the internal layout and structure of the campsite during times of re-inhabitation (or re-use of construction materials for the establishment of a new campsite). All of these factors result in a situation where archaeologists are unlikely to have access to substantial, stratified material assemblages.

This study addresses such biases and problems by reconstructing winter land-use patterns of mobile pastoralists over the last 600–700 years on the upland edges of the Upper Tigris River Plain in southeastern Turkey through the use of high resolution survey data and satellite imagery analyses. Previous archaeological, ethnographic, and historical work has either approached mobile pastoralism through a broad regional perspective focused on annual transhumance cycles or through small-scale studies of the internal arrangement of individual campsites of a particular season. The archaeological study presented here provides a picture of the missing “middle” scale, that is, the local landscape organization most directly relating to dwelling spaces, daily movement patterns, and seasonal land-use within particular environments. This is the scale at which ethnographers could write narratives describing the “taskscape” (Ingold, 1993) of mobile pastoralists. The local landscape analysis applied here takes a first step towards reconstruction of pre-modern mobile pastoral taskscape by using fragmentary archaeological remains to describe a heterogeneous set of locales in which mobile pastoralists engaged in a range of daily activities outside of the campsite and by providing an example of how to analyze the relationships between these locales.

A synthesis of archaeological survey data, vegetation and water models, and quantitative spatial analyses shows that mobile pastoralists of the last 600–700 years in the study area in southeastern Turkey cumulatively created a subtle but pervasive cultural landscape designed to increase the herding potential of the local area. Over four field seasons, the Hirbemerdon Tepe Survey documented campsites and suites of spatially associated landscape features, including corrals, cisterns, caves, cairns, and check dams. A Normalized Difference Vegetation Index (NDVI) raster generated from averaging 20 years of multispectral Landsat imagery allowed the identification of ideal pasture areas and surface water sources in the study area. The distributions of these sites, features, and resource zones, assessed on the basis of statistical analysis of cost-distance rasters, enabled the examination of seasonal inhabitation patterns, daily herding patterns, water accessibility, and the factors that shape them. Although limited in time and space, this study presents grounds for optimism for a robust landscape archaeology of

mobile pastoralists in the Near East and elsewhere. With high-resolution survey data and satellite imagery analyses, applied in suitable regions, as well as analyses of the spatial relationships between different types of pastoral sites, activity zones, and resource areas, archaeologists can investigate the investments and infrastructure that mobile pastoralists created in their local landscapes and empirically reconstruct historically specific land-use practices. By examining the organization of the local landscapes surrounding campsites, archaeologists have an opportunity to gain a window into mobile peoples' history, daily activities, and senses of place, as well as an opportunity to analyze pastoralists' agency in the productive use and transformation of pastoral and so-called peripheral landscapes.

Mobile pastoralists in the Near East

In recent years there has been an explosion of interest in ancient mobile pastoralism in the Near East, demonstrated by the appearance of multiple full-length studies and edited volumes especially focused on the topic (Barnard and Wendrich, 2008; Fleming, 2004; Porter, 2012; Rosen, 2011; Saidel and van der Steen, 2007; Szuchman, 2009) as well as innumerable journal articles. This concentration of studies has grown out of new theoretical attention to issues of mobility, methodological developments in the ability to recognize mobility, seasonality, and ephemeral occupation in the archaeological record, and long-standing interest in the relationship between pastoralism and complex society. Close to 30 years ago, Chang and Koster (1986: 115–116) argued that site catchment and landscape-scale analysis could contribute an important perspective to the study of pastoral societies. Outside of the Near East, archaeologists have moved beyond common tropes such as the exteriority of mobile pastoral groups to state level societies, the “invisibility” of mobile pastoralists, and pastoral degradation of the environment and instead have attempted to examine mobile pastoralists from their own perspective by studying pastoral landscapes. Analyses of the spatial organization of environmental, economic, ritual, and social aspects of pastoral landscapes and movement patterns have been critical for new studies of the archaeology of pre-modern mobile pastoralists (Aldred, 2006; Frachetti, 2008; Holl, 1998; Honeychurch et al., 2009; Pryor, 1996; Reinhold et al., 2007; Wright, 2007) as well as the ethnography (Dominy, 2001; Gray, 2000; Pederson, 2003), ethnoarchaeology (Carrer, 2013; Chang, 1992; Chang and Tourtellotte, 1993) and ecology (Butt, 2009; Coppolillo, 2000, 2001; Moritz et al., 2010) of modern pastoral groups. Archaeological surveys in the Israeli Negev (Rosen, 2008) have examined the landscape organization of desert-based mobile pastoralists and investigated long-term spatial patterns in the relationship between agricultural and pastoral groups, while surveys in eastern Yemen (Harrower et al., 2012, 2013) have analyzed the hydrological landscape and distribution of tombs associated with pastoral and agro-pastoral groups. Such approaches have not yet been applied in Mesopotamian archaeology, despite the significance of mobile pastoral groups throughout Mesopotamian history.

Discussion of the importance of mobile pastoralism in Mesopotamia has tended towards the hypothetical or theoretical, relying primarily on indirect evidence (Adams, 1965; Porter, 2012; Wilkinson, 1994). Archaeologists have assumed the presence of mobile pastoral groups on the basis of modern analogy or have inferred their presence from voids in regional settlement patterns (Alizadeh, 2010; Hole, 2003; Zagarell, 1975, 1978), based on the assumption that such people are “invisible” in the archaeological record (Cribb, 1991b: 65–68; Rosen, 1992). For example, analysis of regional survey data from the Mesopotamian plains concluded that populations turned to mobile pastoralism during periods of decline in settlement numbers and settlement area (Adams,

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