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Foragers, tropical forests and the formation of archaeological evidences: An ethnoarchaeological view from South India

David E. Friesem^{a,*}, Noa Lavi^b^a McDonald Institute for Archaeological Research, University of Cambridge, Downing Street, Cambridge, CB2 3ER, UK^b Department of Anthropology, University of Haifa, Mount Carmel, Haifa, 31905, Israel

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ABSTRACT

Foraging societies present unique ways of livings and sociality which are manifested by distinctive practices and use of space. From an archaeological point of view, understanding forager sociality and studying their practices and the resulted material deposition patterns is crucial to reconstruct archaeological site formation processes. When studying archaeological sites in tropical environments, such as rainforests, one must take into account and study the role of the tropics in the formation of the archaeological record. Human adaptation to tropical environment influences people's practices, use of space and materiality. In addition, the environmental setting plays a significant role in post-depositional processes which may alter, preserve or disrupt archaeological materials. This study involve a long term ethnographic research among a contemporary forager group in South India, which allowed us to associate the social aspects of forager ways of living – such as mobility, immediacy and adaptation to the tropical forest - with patterns of use of apace and material deposition. Excavations of an abandoned open-air site and a rock-shelter of the same group, included field observations and sediment sampling followed by laboratory analyses which enabled the investigation of post-depositional processes at both the visible and invisible (microscopic and sub-microscopic) scales. Overall, although forager ways of living and the environmental conditions in tropical forests challenge the formation of a well preserved archaeological evidence, an integrated approach examining the different scales of the archaeological record can successfully reconstruct the formation processes of archaeological sites in tropical forests and associate the archaeological evidence with social aspects of forager ways of living.

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1. Introduction

Tropical forests have been an important habitat for various human societies since the Late Pleistocene (Mercader, 2002; Gosden, 2010; Perera, 2010; Summerhayes et al., 2010; Barker, 2013; Roberts and Petraglia, 2015). Although some have questioned the ability of foragers to live independently in tropical forests (Hart and Hart, 1986; Bailey et al., 1989; Headland and Reid, 1989; Bailey and Headland, 1991), more recent studies have shown, through archaeological, ethnological, ecological and linguistics evidence, that tropical forests could be and have been rich ecological environments for human habitation (Dufour, 1990; Bahuchet et al., 1991; Colinvaux and Bush, 1991; Endicott and

Bellwood, 1991; Stearman, 1991; Willis et al., 2004; Roberts et al., 2015). Nonetheless, direct archaeological evidence for human occupation of tropical forests remains sparse and is mostly confined to caves and rock-shelters (Mercader, 2002). Few studies have also presented archaeological evidence preserved in open-air sites (e.g., Mercader et al., 2002; Simpson et al., 2008; Perera, 2010; Summerhayes et al., 2010). This situation raises the question whether the archaeological record presents evidence of absence or absence of evidence. While the former has significant implications regarding the role of tropical forests as a habitant for human dispersal and evolution, the latter option may simply be the result of research bias or post-depositional processes.

The ethnographic and historical data from the last century point out that the majority of forager groups in South and Southeast Asia tropical forests live in open-air sites (e.g., Endicott, 1979; Morris, 1982; Bhanu, 1989; Gardner, 2000, 2012; Lye, 2004; Bird-David, 2009). Thus, there is no reason to assume

* Corresponding author.

E-mail addresses: df360@cam.ac.uk, friesem.david@gmail.com (D.E. Friesem).

that prehistoric foragers differed and avoided open-air sites in tropical forests (Anderson, 1997). However, apart from a few sites in Papua New Guinea (Gosden, 2010; Summerhayes et al., 2010), archaeological evidence for open-air sites associated with forager activity in tropical Asian forests is almost completely absent. It is believed that the environmental conditions in tropical environments do not favour the preservation of open-air sites as opposed to caves and rock-shelters (Tappen, 1994; Mercader et al., 2003; Taylor, 2011). However, the few geoarchaeological studies which have examined the post-depositional processes of archaeological materials in open-air sites in tropical environments have shown that anthropogenic materials (mainly charcoal, phytoliths and chemical residues) can be preserved (e.g., Mercader et al., 2002; Simpson et al., 2008; Perera, 2010). We are therefore most probably facing research bias or intensive post-depositional formation processes, which have led to the underrepresentation of open-air sites associated with foragers in tropical forests, rather than facing a true reflection of a preference made by past human populations.

In this paper we examine the archaeological site formation processes related to foragers' ways of living in a tropical forest and how their daily practices and adaptation to the environment influenced the formation of the archaeological evidence. We present an ethnoarchaeological case study from South India as part of an integrated project involving social anthropology, ethnoarchaeology and geoarchaeology. Here we present the results from our long-term ethnographic work among a contemporary forager community and the excavations of their abandoned sites located deep in the forest (For detailed description of the laboratory-based analyses see Friesem et al., submitted). We use the ethnographic data in order to link the social behaviour of the studied group with patterns of material deposition and then study the potential of these deposits to preserve archaeologically in open-air sites in tropical forests.

1.1. Archaeological site formation

Archaeologists encounter human occupation sites long after their abandonment. Many different agents and processes might have altered, preserved or disrupted the archaeological material and site since its initial occupation phase, via its abandonment until it is unearthed by archaeologists (Schiffers, 1987). While most of the archaeological investigation is focused on the formation of the archaeological record, which can be directly associated with past human behaviour, it is evident that the environmental setting plays a significant role in the formation of the current archaeological context. Many geoarchaeologists who study site formation processes distinguish between natural and anthropogenic formation processes, while also acknowledging their interaction (Butzer, 1982; French, 2003; Goldberg and Macphail, 2006). Nonetheless, a clear distinction between natural and anthropogenic (human-related) formation processes might oversimplify their complex relationships in terms of archaeological site formation processes. Environmental influence can be observed through human adaptation to the environment. In certain environments there are specific materials and resources available to humans. On the other hand, human habitation modifies and alters the landscape. Post-depositional and post-abandonment processes may occur both as a result of human activity as well as due to the natural environmental conditions. Thus, archaeological sites are formed as a result of a complex interplay between humans and their environment (Butzer, 1982; French, 2003; Goldberg and Macphail, 2006). This paper examines the archaeological formation processes resulting from forager social and ontological ways of living in a tropical forest in South Asia.

1.2. The study area

The study area is located in the forested hills of the Western Ghats in South India (Fig. 1). These forests form parts of the Nilgiri Biosphere Reserve (NBR) (10° 45'N to 12° N and 76° E to 77° 5' E) on the borders between the States of Karnataka, Kerala and Tamil Nadu. Sites were located at an altitude of 700–900 m above sea level. The natural vegetation type depends on the area and altitude. Generally, the natural vegetation types of the NBR range from wet evergreen tropical forests to thorn forests (Varghese et al., 2015). The temperatures range from 17 to 37 °C, with an average annual precipitation of 2600 mm. Most precipitation falls during monsoon season, from June to September (Jayakumar and Nair, 2013).

Fieldwork was conducted among a Nayaka community. The Nayaka were classified as immediate-return forest dwelling hunter-gatherers by Bird-David (see selected publications Bird-David, 1990, 1992, 1994, 1999). Apart from the studied community, other forager groups have been studied in this region (e.g., Misra, 1969; Morris, 1982; Bhanu, 1989; Demmer, 1997; Gardner, 2000, 2012; Norstrom, 2003; Naveh, 2007), which exhibit significant similarity in their social perceptions and ways of living. While this study presents a case study from our work among one Nayaka community, the social and material features presented are by no means unique to them and can be observed in many other foraging societies in general and in particular among South Indian forest foragers. This by no means implies that all the forager groups around the world or even among the Western Ghats are the same, but we do, as other scholars have (Gardner, 2012), think that there are many similarities which override the differences, especially when compared to other societies around them.

The study presented here is based on long-term ethnographic work through numerous visits to the same Nayaka community, in 2010, 2012 and 2014, for a period of two, four and six months respectively, that included living in the contemporary dwelling site, participating in everyday social life and activities, observations and interviews. Although this locality once consisted of grass and bamboo houses, today concrete houses are built by external development institutions and a few people practice to some extent agriculture and animal husbandry (both saplings and animals were provided by development agencies). Recent studies (Lavi, 2012; Lavi and Bird-David, 2014) demonstrated how the perception, interaction and use of farming-related materials among the Nayaka cannot be simply read as a transition toward farming, encompassing a new social order, practices and world views. Rather, the way the Nayaka perceive and relate to these recent changes reveals much more complex processes of inner-social dynamics, interpretation and negotiations based on their own ways of living. The ethnographic data presented here focuses on peoples' sociality, materiality, use of space and adaptation to the environment in relation to their everyday life in a tropical forest.

In addition, to this ethnographic work, field observations, excavations and sediment sampling were conducted in 2015 in abandoned sites of the same group in the same forest area. An open-air site and a rock-shelter, abandoned ca. 20–30 years ago, were recognized and introduced to us by elder Nayaka, pointing us to the location of the site covered by dense vegetation. The sediments samples were then analysed in a geoarchaeological laboratory in order to trace microscopic anthropogenic materials. This geo-ethnoarchaeological approach (Friesem, 2016) provided invaluable information regarding the post-abandonment site formation processes. A detailed report of the excavations and geochemical analyses of sediments from the abandoned sites is reported elsewhere (Friesem et al., submitted).

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