



A comparative ethnoarchaeological analysis of corporate territorial ownership



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ABSTRACT

Ecological models are a fundamental tool that archaeologists use to clarify our thinking about the processes that generate the archaeological record. Typically, arguments reasoned from a single model are bolstered by observing the consistency of ethnographic data with the argument. This validation of a model establishes that an argument is reasonable. In this paper, we attempt to move beyond validation by comparing the consistency of two arguments reasoned from different models that might explain corporate territorial ownership in a large ethnographic data set. Our results suggest that social dilemmas are an under appreciated mechanism that can drive the evolution of corporate territorial ownership. When social dilemmas emerge, the costs associated with provisioning the public goods of information on resources or, perhaps, common defence create situations in which human foragers gain more by cooperating to recognize corporate ownership rules than they lose. Our results also indicate that societies who share a common cultural history are more likely to recognize corporate ownership, and there is a spatial dynamic in which societies who live near each other are more likely to recognize corporate ownership as the number of near-by groups who recognize ownership increases. Our results have important implications for investigating the coevolution of territorial ownership and the adoption of food production in the archaeological record.

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1. Introduction

Basic economic theory tells us that as resources become more dense and predictable, rational individuals in competition with each other maximize their fitness by claiming ownership and defending their ownership claims over resource locations (Brown, 1964; Dyson-Hudson and Smith, 1978). This model of economic defensibility is foundational to explanations for territorial ownership in hunter-gatherer societies (Baker, 2003; Cashdan, 1983; Dyson-Hudson and Smith, 1978; Kaplan et al., 2009; Kelly, 1995; Sealy, 2006; Smith, 1988, 2012; Thomas, 1981; Zeder, 2012) and, increasingly, archaeological explanations for the adoption of agriculture (Bettinger et al., 2009; Bowles and Choi, 2013; Smith, 2012; Zeder, 2012). Despite the clear importance of the model of economic defensibility, arguments reasoned from this model have not been evaluated in comparison with arguments reasoned from

alternative models that might also explain why foragers adopt rules of territorial ownership. Such a comparison of arguments is epistemologically healthy. Observations consistent with a single argument tell us that the argument is reasonable, but, in complex systems, almost any reasonable argument will fit data to one degree or another. The key question is: Which argument best fits the available data?

In this paper, we compare the relative consistency of two arguments that might explain the evolution of corporate territorial ownership in hunter-gatherer societies. These two arguments follow from the logic of the model of economic defensibility and a recent model of forager-resource coevolution (Freeman, 2014; Freeman and Anderies, 2012) that comes out of a deep intellectual tradition in resource economics and community ecology (Clark, 1976; Noy-Meir, 1975). The goal of this comparison is to develop a more robust corpus of knowledge about the mechanisms that may lead foragers to adopt the corporate ownership of territories. In turn, we argue that this knowledge provides a basis for asking more nuanced questions about the archaeological record. In what follows, we define the basic problem of corporate territorial

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ownership. Next, we describe the model of economic defensibility (MED) and the foraging effort model (FEM). We describe these two models to elucidate why the models suggest different arguments for the evolution of territorial ownership. Finally, we conduct an analysis of corporate ownership rules in a global ethnographic database in an attempt to identify which argument is more consistent with the data.

The results of our analysis indicate that the emergence of social dilemmas drives up the costs associated with the exchange of information on the predictability of resources within a territory. This mechanism plays a heretofore under appreciated role in the adoption of rules of corporate ownership by populations of foragers. Our results also suggest that while ecological conditions have an immediate impact on the costs and benefits of territorial ownership, cultural transmission may have a longer-term effect on corporate territorial ownership. In a positive feedback loop, once foragers in particular locations begin to recognize territorial ownership, this recognition of new social rules exerts pressure on nearby groups to also adopt territorial ownership. Why this is the case requires further investigation. Our results have important implications for recent arguments in the archaeological literature that the adoption of territorial ownership by foragers was a necessary condition for the adoption of agriculture.

2. Models, arguments & territorial ownership among foragers

By the term “model” we mean the abstract description of relationships between variables in a system. Models may be verbal descriptions or formal equations, but in either case, they are tools for clarifying one’s thinking about the interaction of variables in a system. The model of economic defensibility (MED) and foraging effort model (FEM) are similar models in that they both describe the relationships between the density of resources, competition for resources, and the predictability of resources. As such, we view these models as tools that help one propose explanations for some set of phenomena. By explanation we mean an argument that states the conditions under which a phenomenon will and will not occur; in this case, the phenomenon is corporately recognized territorial ownership. We belabour the above distinction to point out that our analysis is an attempt to compare alternative arguments that might explain the evolution of territorial ownership. The two arguments were arrived at via an analysis of the MED and FEM respectively, but it is conceivable that arguments other than the two we describe below could be reasoned from an analysis of each model.

2.1. Territorial ownership

We define territorial ownership as the social norms that define access to a territory for some and limit access for others. Territories for our purposes are collections of habitats in which foragers might reside, and habitats are collections of patches that contain many different types of resources. In anthropology, the ownership of territory is often conceptualized as a continuum from open access at one pole to private property at the other pole (Smith, 1988). Here, we start from a different premise. Rather than a continuum, we suggest that hunter-gatherers have nested sets of *contingent* norms that define the ownership of resources and territories. This means that multiple rules of ownership may exist simultaneously and apply at different levels of social organization. Which rule is activated depends on context and negotiation.

The most basic rule of “ownership” in forager societies is that individual foragers own the resources that they harvest. Steward (1938, p. 253) describes this norm among the Western Shoshoni,

“But once work had been done upon the products of natural resources they became the property of the person or family doing the work.” In any society there are multiple competing norms that may apply in a given situation, so just because we propose that hunter-gatherers have a basic norm of ‘you harvest it, you own it’ does not mean that this norm will always be activated. Sharing norms, in the correct context, may supersede the individual ownership norm of ‘you harvest, you own’. For example, when Hadza foragers harvest berries outside of their overnight camps, the rule of ‘you harvest, you own’ applies; however, if berries are transported back to camp, individuals share their harvests more frequently (Marlowe, 2010, p. 237). There is a huge literature on when and why individuals share. Our point here is not to address this literature, we simply note that there is a basic norm of individual ownership of harvested food, but whether or not this norm is activated depends on competing norms of sharing and reciprocity. In societies in which the only ownership rule in place is the contingent: ‘you harvest, you own’ rule, territories are open access, while individual resources are contingently owned once harvested.

Our concern in this paper is to assess competing explanations of the processes that lead hunter-gatherers to adopt rules of corporately recognized territorial ownership. Practically, this means the adoption of a rule by social groups in which access to a territory is limited for individuals who are not members of the social group. This is a situation that requires cooperation; the exclusion of non-group members may be enforced by territorial defence (i.e., attacking intruders) or requiring participation in a ritual or ceremony to gain access to a territory. Both of these activities are common ways of insuring compliance with a social norm in human societies (Bicchieri, 2006). For example, Ray (1963, p. 201) tells us that territorial “boundaries were precisely defined and understood by the Modoc and transgression meant war.” This is clearly a case of a group defined territorial boundary. However, among the Modoc, the contingent rule of ‘you harvest, you own’ still applied. Individuals and families, for example, were the recognized owners of the roots and tubers that they dug for winter storage (Ray, 1963, p. 163), but cases of illness would invoke norms that put pressure on families to share their food supplies. Other examples of a corporately recognized rule of territorial ownership include the Tiwi, among who “the band was the land-owning, workaday, territorially organized group which controlled the hunting, the food supply and the warfare” (Hart and Pilling, 1965, p. 13). According to Steward (1938, p. 255), the Owens Valley Paiute “were distinctive for their band ownership of hunting and seed territories.”

In a small number of hunter-gatherer societies recorded ethnographically, we see three or possibly more norms of ownership over territory and resources in coexistence. Corporately recognized norms of ownership, as those described above, may be augmented by additional norms that define the ownership of particular locations for smaller segments of society within corporately recognized territories. In this case, we see stable rights vested in smaller segments of a group to control access to particular locations. These rules exist alongside the rules that define group access and limits to territory, as well as the most basic rule of ‘you harvest, you own’. To illustrate, among the Clear Lake Pomo Gifford (1923, p. 81) writes.

“Rattlesnake Island, on which was located the village of Elem, was communal property, and any villager might help himself to the acorns or other products of the island; not so on the mainland, however, which to the north, east and south was claimed by Elem, but was not communal property. It was divided into nearly ninety named tracts, owned by the various families of Elem.”

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