ETHNOLOGICAL PROBLEMS AND THE PRODUCTION OF ARCHAEOLOGICAL KINSHIP RESEARCH

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Ethnology traditionally guides most research on kinship practices. However, diachronic hypotheses are inadequately tested when using synchronic and normative information from limited periods of ethnological observations. Archaeological kinship analysis on residence, descent, and marriage, using middle-range factual correspondences between social practice and material remains, enable plausible inferences on variation and change in kinship practices over long periods of time. Therefore, archaeology is ideal for independently evaluating diachronic hypotheses. Taíno, Maya, and Hohokam case studies are presented and the results obtained from archaeological kinship analyses are summarized. These analyses show that variation and change are prevalent, thereby defying normative characterizations. Several long-standing functionalist hypotheses on the emergence of residence and descent practices are evaluated, and several of these find little support from long-term diachronic archaeological testing. In addition, archaeological kinship analyses can provide new insights on kinship practices unavailable to ethnology, further demonstrating the archaeological subfield's capacity to become a major contributor to the contemporary expansion of kinship research.

Introduction

The thesis of this chapter is that archaeological kinship analysis has the potential to address methodological problems involved in using ethnological research that has led to insufficiently tested, but long-maintained, explanations for kinship practices and beliefs. Ethnology (in which the author includes ethnographic field research, ethnohistory, and cross-cultural analysis) is the subfield of anthropology that has traditionally dominated anthropological research on kinship. As such, it has shaped trends but is also the source of methodological problems when it comes to developing and testing explanations for the diachronic emergence of kinship practices and beliefs. This chapter considers two of these problems: (1) the reliance on synchronic normative data in logical arguments and cross-cultural analyses and (2) the inadequate span of time for data observations relating

to diachronic changes. The first section of the chapter outlines these data limitations. Once the need for longer observational time periods than ethnology permits and for more broadly based empirical observations (so as to avoid inadequately documented normative generalizations) is recognized, development of archaeological research methods relating to kinship analyses becomes the obvious solution to the data problem.

The second section describes the challenges facing the development of archaeological kinship analysis and the methods favored by the author for resolving these challenges. These methods are centered on "middle-range" factual correspondence between ethnographically observed kinship practices and patterned dwelling arrangements that are the consequences of kinship practices. Unlike "high-level" theory, mid-level factual correspondence is not aimed at providing explanations, but instead enables archaeologists to infer kinship practices empirically from deep prehistory.

Three previously published archeological case studies are summarized in the following sections. The first case study examines the archaeological research conducted on the Caribbean Taíno of the Greater Antilles. This research addresses problems that arise when making ethnohistorical interpretations relating to kinship practices and to long-term diachronic changes, but is limited by reliance on normative archaeological characterizations. The second case study relates to archaeological research on a Chontal Maya community. The case study critiques nearly a century of problematic ethnological assumptions and interpretations on ancient Maya kinship by demonstrating, through an empirical approach, that social contexts within the tributary political economy variably structured class-based kinship practices. However, this research involved only one period of observation. Despite the normative characterizations in the Taíno case study and the synchronic data used for the Chontal Maya case study, both cases provide valuable information regarding the emergence of kinship practices. The third case study, which focuses on the Hohokam (US Southwest), best exhibits the potential of archaeological kinship analyses because it enables both empirical and diachronic analyses to be undertaken that address the development of numerous kinship practices.

The subsequent section examines popular and long-maintained explanations in the ethnology literature for the development of kinship practices in light of these three case studies. These explanations were developed largely during the heyday of functionalist theory, whose analytical methods included logical arguments and cross-cultural testing using nineteenth and twentieth century synchronic normative data. This line of research includes hypotheses aimed at explaining the emergence of, and factors associated with, various residence practices and forms of descent. Some of these explanations are still influential. Nevertheless, the long-term perspectives afforded by the archaeological case studies contradict most of the hypotheses. Furthermore, several observations stemming from the archaeological data on the development of kinship practices relating to descent groups provide valuable insights unavailable to ethnologists. These observations can profoundly influence our understanding of the dynamics of kin groups. Thus, engaging in archaeological kinship research aimed at solving problems in ethnological research has the capacity to go beyond just testing hypotheses regarding kinship practices and can contribute new data for an important anthropological topic.

Ethnology Data Limitations

Although diachronic in nature, practically all hypotheses on the development of, and changes to, specific kinship practices were developed and tested with normative synchronic data. Despite widespread acknowledgment that varying and changing social contexts within political economies differentially structure social organization, residence, marriage practices, nomenclature manipulation, and social identities, previous cross-cultural research has depended on synchronic normative characterizations of "cultures" (e.g., Aberle 1961; C. Ember and M. Ember 1972; M. Ember and C. Ember 1971; Ember et al. 1974; Murdock 1949). Tribal political groups, linguistic groups, or ethnographic localized communities are treated as being internally homogeneous and having one "kinship system." In part, this assumption was a methodological requirement for comparing, at a cultural level, one kinship practice with another aspect of the same culture. In addition, ethnological data are, by their nature, synchronic. Although seeking explanation for how kinship practices emerge (a diachronic question), cross-cultural studies determined synchronic associations after they emerged. Other hypotheses on the emergence of practices were based on logic alone. For example, ideationalists long assumed that descent caused residential behavior whereas later functionalists argued that descent and descent groups developed from residential practices (e.g., Fox 1967). Despite their popularity, these long accepted notions have never been tested with appropriate longitudinal data.

When we consider the extent to which ethnology relies on synchronic normative description in kinship research aimed at addressing diachronic questions, the importance of longitudinal data becomes apparent. Longitudinal data informs us on the degree to which people actually practice the normative characterizations we hypothesize, allows us to evaluate ethnographic descriptions and models derived from those descriptions, and contextualizes subjects' changing symbolic understandings of their relationships and identities. Ethnohistorical empirical analyses can also be used to discover kinship practices where normative accounts are lacking, fragmentary, questionable, or lead to competing interpretations (e.g., Haviland 1973; Keegan 2006) and to test broader hypotheses (e.g., Ensor 2003a; Haviland 1970a, 1970b; Moore and Campbell 2002). Ethnographic empirical data collection by age groups have also been used for interpreting short-term (ca. half century) variation and change in kinship practices (e.g., Blackwood 2007; McKnight 2004:129-146).

Even when ethnological studies on change have access to diachronic data, they are still limited by what can be observed. One hypothesis where ethnology provides sufficient diachronic data for testing is that the expansion of global capitalism breaks down collective kin groups into conjugal families dependent on wages or private property holdings, which in turn alters marriage practices, homogenizes ceremony among groups that previously had distinct ceremonies, and changes nomenclature once the "traditional" social organization no longer matches the new social realities (Gough 1961a; Murdock 1949:203; Steward 1959). These changes have been ongoing since the development of ethnography, making them observable by ethnographers. However, no ethnographer actually observed the formation of a lineage, the complete shift from one term system to an-

other, the emergence of a marriage system, etc.

Ethnohistorical empirical analyses have access to longer periods of observation through archival data. However, these data are often fragmentary and without guarantee that they are representative. In many instances, archival data were collected by colonial agents with biased world views, leading to recording social groups as being based on nuclear family units headed by men, rolls of persons with names forced to fit European naming systems, or court records with property considered to be private and subject to heir transference from individual fathers. If data are synchronic, different practices may be indistinguishable (e.g., bilocality versus ambilocality or bride service versus matrilocality). Further back in time, we find archival data to be even more fragmentary and in the form of synchronic normative descriptions by colonial agents who likely neither understood kinship practices nor considered how colonialism altered practices. Archival protohistorical data are scant and are typically subject to varying and competing interpretations (e.g., Curet 2002 versus Keegan 2006). Although extending the time frame for observation, historical materials often do not provide a sufficient span of time for testing diachronic hypotheses on kinship and can even be problematic as a way to identify the protohistoric practices from which to document subsequent historical changes.

Ethnological kinship research is essential for developing interpretations and broader hypotheses on diachronic change in kinship systems. However, as already noted, this involves using a number of assumptions and accepting limitations on the data available for analyses. Although not all studies are vulnerable to the problems described in this section, and though some of the problems discussed here may be overstated, nonetheless the problems exist and need to be acknowledged. In so doing, we arrive at the simple conclusion that only archaeology and bioarchaeology - the subfields specializing in data relating to prehistoric periods - can break through the chronological barriers that otherwise restrict our ability to test hypotheses on diachronic kinship (Ensor 2011).

Archaeological Kinship Analysis

The subject of kinship has had a turbulent history within archaeology. Attempts were made in the 1960s to identify postmarital residence through spatial analysis of decorative elements that were assumed to be both engendered and inherited (e.g., Deetz 1965; Longacre 1966). The assumptions and uses of the archaeological contexts for this purpose were problematic. In addition, the structural-functionalist interpretations of descent from residence were critiqued and the topic of kinship was argued to be irrelevant to archaeology (Allen and Richardson 1971). The latter attitude persists. For example, most archaeologists consider kinship to be irrelevant to socioeconomic relationships, particularly after the critiques from “house” literature (e.g., Joyce and Gillespie 2000) that kinship is unapproachable without written documents. Generations of archaeologists have received little education on the nature of kinship systems. Attempts to entertain kinship as a relevant topic in archaeology have relied on direct historical analogy with ethnographic, linguistic, or ethnohistoric interpretations. These are problematic as they typically assume that kinship relations do not change. Other attempts have based interpretations on cross-cultural hypotheses of associations with subsistence (e.g., Gjessing 1975; Haury 1956),

succumbing to "ethnological tyranny" - the uncritical consumption of what are potentially problematic ethnological assumptions and interpretations (see Maclachlan and Keegan 1990; Wobst 1978).

Despite these problems, new efforts to interpret kinship practices using material culture have emerged. To understand these, a critical distinction needs to be made among low-, middle-, and high-level interpretations and theory (after Trigger 2006:30–33). Low-level interpretations are based on observation of patterns in what people do, which ethnography can describe but archaeology cannot, or observations of patterns in material culture that archaeology can identify. Mid-level interpretations are based on factual correspondence between ethnographically observed behaviors and patterns in material culture – linking what people do to the material culture patterns. A strong cross-cultural correlation between a specific behavior and a specific spatial pattern in the distribution of artifacts or features in space justifies archaeological inference of that behavior when that material culture pattern is observed archaeologically. In this way, mid-level factual correspondences enable plausible inferences on behavior so long as the cross-cultural associations are strong. However, mid-level interpretations do not explain the behaviors reflected in material culture. They are independent of theory-based explanation of behavior. High-level theories – to explain how things are or why they change - guide interpretations that are logically consistent with their models, philosophies, and assumptions. The mid-level archaeological inferences can test high-level theory-guided hypotheses regarding the emergence of the different kinship practices.

Archaeological kinship analysis therefore depends upon cross-cultural factual correspondence between kinship practices and material culture patterns. Reliable middle-range correspondences between dwelling arrangements and matrilocal, patrilocal, cognatic, and neolocal residential groups, and with unilineal descent groups and bilateral descent have already been established. Ember (1973) identified strong cross-cultural differences in living floor area for matrilocal versus patrilocal dwellings and these findings have been replicated by Divale (1977). Excluding elite palaces in state societies and the huts in temporary camps in mobile foraging societies, dwelling floor areas in matrilocal societies are consistently greater than 80 m2 whereas dwelling floor areas in patrilocal societies are consistently less than 43 m2. However, Ensor (2013a:65-66) notes that dwellings less than 43 m2 are not for patrilocal groups; but rather, for individual conjugal families (occurring with patrilocality, bilocality, virilocality, avunculocality, or neolocality). Based on his cross-cultural analyses, when conjugal family dwellings are spatially arranged in groups with entries focusing on a common plaza, they indicate patrilocal residential groups. In contrast, informally arranged groupings of conjugal family dwellings indicate cognatic residential groups using bilocal or ambilocal practices (Ensor 2013a:67-68). Furthermore, because some groups of women within cognatic groups may reside together matrilocally, some dwellings in these informal clusters may be larger than 43 m2, indicating the presence of a matrilocal residence pattern within an otherwise cognatic group. Matrilocal, patrilocal, and cognatic residential groups can thus be inferred within and across prehistoric settlements and over time.

Unilineal descent groups and bilateral descent are plausibly inferred from the dis-

tribution of dwellings and/or groups of dwellings. In an early example of using the Human Relations Area Files in cross-cultural analysis codings for archaeological purposes, Chang (1958) identified strong cross-cultural patterns in settlement layouts used by societies with unilineal descent groups versus those with bilateral descent. He found, in a worldwide cross-cultural analysis, that settlements for individual unilineal descent groups were always planned, with dwellings surrounding a central plaza and/or ceremonial structures. He also found a strong correlation between settlements shared by multiple unilineal descent groups and segmented layouts (that is, segments for each descent group), which were also commonly placed around a central plaza. In contrast, settlements for societies with bilateral descent rarely had segments and were never formally planned, but instead had haphazard arrangements of habitations in nucleated settlements or had dwellings widely scattered across the landscape (a ranchería community pattern). Ensor (2003b) conducted a similar analysis using text descriptions (not codes) for 62 North American societies, which confirmed Chang's results. In that study, all of the societies with exogamous unilineal descent groups (lineages and clans) had formally-planned villages. All but one society with bilateral descent had informal nucleated settlements or ranchería community patterns. Settlement layouts therefore indicate whether descent groups were present or if bilateral descent was emphasized.

Although the type of unilineal descent group cannot be determined from the formal community pattern alone, and although descent cannot be predicted from residence alone, the combination of a formal community pattern and the type of residence groups accompanying it does enable reliable inferences (based on cross-cultural correlations) to be made as to whether the descent group was matrilineal or patrilineal (Pasternak 1976:44-46). These correlations show that if a unilineal descent group is known to exist and is accompanied by patrilocal residential groups, then it was a patrilineal descent group. If it is accompanied by matrilocal residential groups or, less commonly bilocal residential groups, then it was a matrilineal descent group.

When describing virilocality, uxorilocality, and avunculocality, ethnologists are often vague in regards to the scale of the group that people reside with: Is residence location measured at the scale of a household group or the scale of a descent group? However, if we modify the meaning of these terms to refer only to residence location at the scale of descent groups, then these are patterns that archaeologists can identify (Ensor 2013a: 156-157). For instance, virilocality within a patrilineal descent group's location should also involve formally planned settlements. However, in this case, rather than extended residential groups surrounding a plaza, we would expect instead non-clustered individual conjugal family dwellings surrounding a plaza. Unfortunately, avunculocality with a matrilineal descent group's location should have exactly the same pattern. Nevertheless, both of these can be distinguished from neolocality, which is always associated with bilateral descent, and would therefore be represented by informally-arranged conjugal family dwellings in nucleated settlements or dispersed in ranchería community patterns.

Figure 1 illustrates the community patterns associated with these kinship practices. These mid-level interpretations regarding kinship practices are not guided by high-level theories. Instead, they are plausible inferences based on factual correspondence be-

tween ethnographically-observed behaviors and patterns in material culture. As such, they provide an independent source for identifying kinship practices that can be used to evaluate theoretical assumptions and the hypotheses generated from those assumptions. There are additional advantages. Because this approach focuses on observed dwellings and their relationships, it avoids the pitfalls of normative characterizations since variation in patterns is observable. Furthermore, through chronological assignments using dating techniques, changes over time can also be observed, thus overcoming the ethnological pitfalls inherent in having to rely on high-level theoretical assumptions to interpret diachronic change from synchronic data. Most importantly, the approach does not rely on "ethnological tyranny" for interpreting kinship practices in a given ancient society. Consider now three case studies showing how archaeological kinship analyses can be used to evaluate ethnological theory assumptions and derived hypotheses.

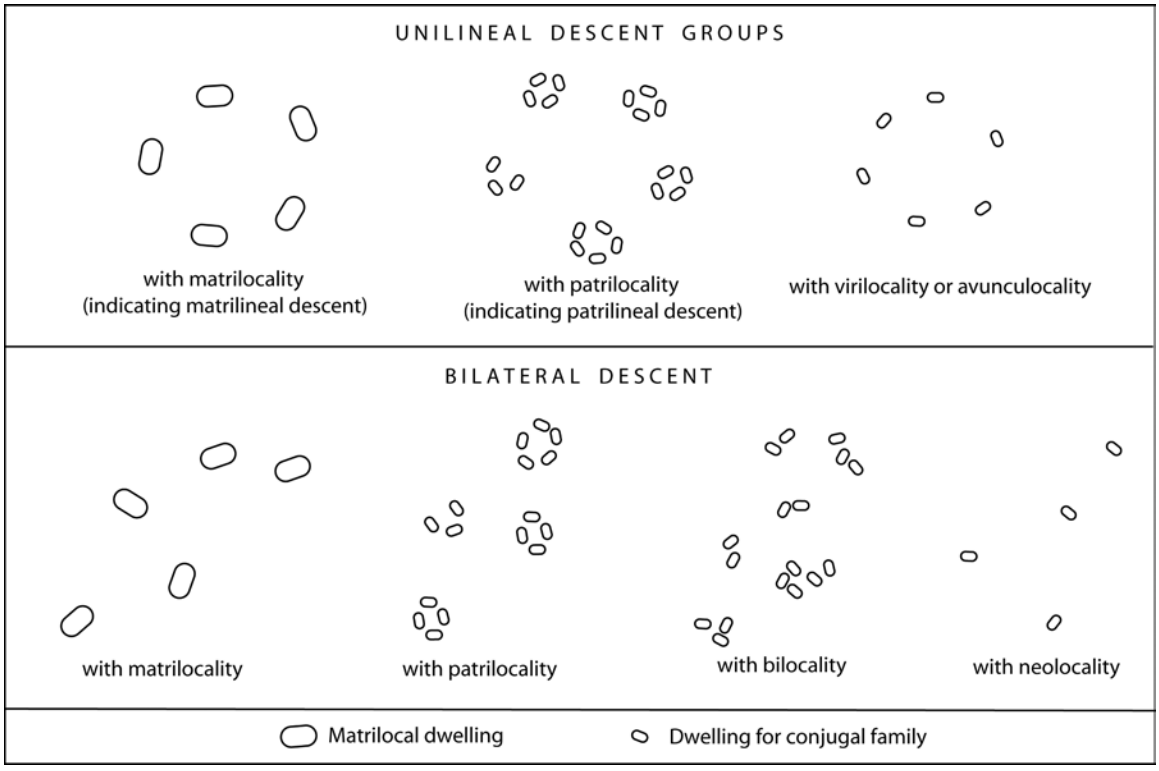

Figure 1. Community patterns by residence and descent.

First Case Study: Caribbean Taíno

Conventionally named "Taíno" (to distinguish them from the Arawakan speaking cultures of South America), the late prehistoric and early historic peoples of the Greater Antilles have been the subject of scholarly debates regarding their social organization. Disagreements stem from over-reliance on ethnohistorical research, often using early Spanish descriptions as if they were rigorous, objective accounts. However, these sources contain contradictions, the events were not actually witnessed by the "chroniclers," and the de-

scriptions were written after events and changes had occurred (Keegan et al. 2012:9-10). The use of the same sources for interpretation has led to debates over whether the Taíno had exploitative class-based societies or descent group organized societies (e.g., Cassá 1974; Guarch Delmonte 1974:38; Moreira de Lima 1999; Moscoso 1981, 1999) and whether or not they had matrilineal social organization and succession (e.g., Curet 2002; Keegan 1992a, 1992b, 2006, 2009), as suggested by direct historical analogy using interpretations of avunculocality based on kin nomenclature and normative Spanish statements (e.g., Keegan et al. 1998; Keegan and Maclachlan 1989).

An archaeological kinship analysis of the community patterns for the Saladoid and the Ostionoid eras -- the two major prehispanic eras characterized by sedentism -- indicate matrilineal descent group organization with a probable shift from matrilocality to avunculocality (Ensor 2012; 2013a:283). For the Saladoid era settlements dating to between 100 and 600 BCE, dwellings were generally large, indicating matrilocal residential groups (Curet 1992, Curet and Oliver 1998), and surrounded plazas with communal cemeteries (e.g., Keegan 2009; Morse 1997; Oliver 1998; Siegel 1989, 1992:372-374, 1996, 1999), indicating descent groups (Figure 2a). Because the descent groups were combined with matrilocality, they must have been matrilineal descent groups. Settlements of the subsequent Ostionoid era (ca. 600-1492 CE) continued to emphasize community patterns in which dwellings surrounded plazas (e.g., Alegría 1983; Deagan 1986, 1987, 1996; Keegan 1992a:109, 1997:53; Morse 1997; Oliver 1998; Righter 2002; Siegel

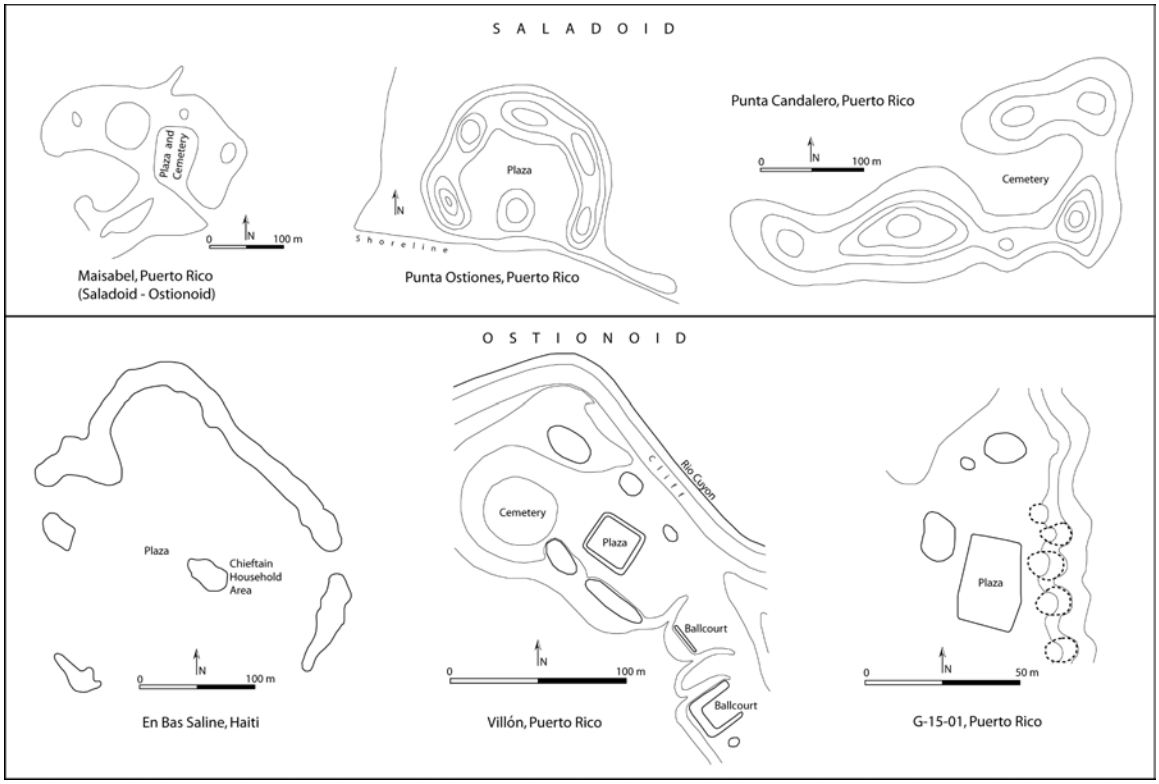

Figure 2. Saladoid and Ostionoid community patterns exhibiting unilineal descent groups (from Ensor 2012).

1999), indicating descent groups (Figure 2b). Large settlements had central plazas with ball courts, ceremonial structures, and large elite dwellings, whereas smaller settlements' plazas still contained communal cemeteries. However, residential architecture, excluding that for elites, became much smaller, indicating a change to conjugal family dwellings (Curet 1992; Curet and Oliver 1998). Although Curet (1992) interprets the small dwellings as an indicator of neolocality, the individual conjugal family dwellings surround the plazas, thus indicating residence with unilineal descent groups rather than bilateral descent associated with neolocality. Although not as well tested cross-culturally, the combination of unilineal descent group community patterns with conjugal family dwellings is, as noted above, likely to be an indicator of either virilocality with a patrilineal descent group or avunculocality with a matrilineal descent group. Given the strong evidence for matrilineal descent groups in the Saladoid era, and given that matrilineal descent is apparent in the early Spanish colonial period, matrilineal descent with avunculocality seems the more likely of the two possibilities.

One major problem with this analysis, though, is that it is based on a normative assessment of Pre-Columbian Caribbean community patterns for the two eras. Whereas numerous sites in both eras document dwellings and domestic trash surrounding plazas, indicating that descent groups were generally a norm, less information has been gathered on dwelling sizes and their relationships in the residential zones surrounding the plazas. This is due, in part, to an emphasis on Culture Historical archaeology in the region, emphasizing the geographic distribution over time of "traits" to define "cultures," combined with an over-emphasis on ethnohistory for direct historical analogy, but without undertaking the horizontal archaeological excavations that can better define dwellings and their spatial arrangements. However, even where those broad horizontal excavations have taken place, difficulties may arise in the interpretation of dwellings (based on post hole distributions) when numerous successive structures overlapped one another. Until Caribbean archaeology accumulates more empirical data on dwellings and their spatial arrangements, we will need to assume a normative shift from large matrilocal dwellings to small conjugal family dwellings surrounding the plazas even though more variation than this across time and space may have occurred.

Second Case Study: Chontal Maya

For the past century, ethnologists have attempted to "discover" the ancient Maya kinship system, an exercise that has, however, led to multiple competing models, all with problematic assumptions. There is a long tradition of using the same, very few historic documentary sources on nomenclature and naming recorded in the sixteenth to eighteenth century to interpret the far more ancient prehispanic social organization and marriage patterns (e.g., Beals 1932; Borodatora and Kozhanovskaya 1999; Eggan 1934; Roys 1940; Hage 2003; Lounsbury n.d.; Tozzer 1907). Interpretations differ considerably: exogamous patrilineages, patrilineages with cross-cousin marriage, double descent, double descent and cross-cousin marriage, Kariera kinship, and cognatic descent and residence have all been proposed. Most of these are problematic as they rely on heavily-critiqued structural-functionalist assumptions, for assuming only one normative kinship system among di-

verse Maya societies and their disparate social classes, and for assuming direct historical analogy using Spanish documents created long after severe depopulations and Spanish social reorganization of property, social groups, residence, and marriage systems. Other ethnohistoric interpretations have been based on sixteenth century residence records (e.g., Haviland 1970b, 1973) and property inheritance records from the sixteenth to nineteenth century (Thompson 1978; Witschey 1991). These data suggest shifts from patrilineal descent and patrilocality to cognatic patterns. Ethnographic observations from the twentieth century, after several more centuries of change, were also used, in combination with ethnohistoric interpretations, to derive one interpreted normative kinship system for the diverse societies that was also assumed to be static throughout the historic periods of dramatic change and long into prehispanic times. This has also led to different interpretations being made over time (e.g., Gillespie 2000; Nutini 1961). Epigraphic data on nobility successions during prehispanic times were interpreted differently, and, although providing evidence on only a few elites, were used for inferring a normative prehispanic social system (e.g., Haviland 1977; Hopkins 1988; Thompson 1982). Archaeological interpretations of prehispanic Maya social organization were primarily based on analogies between ancient and ethnographically observed Maya plazuelas (conjugal family dwellings surrounding a small plaza, indicating patrilocal residential groups) (e.g., Haviland 1963, 1968; Rice and Puleston 1981; Sanders 1981, 1989), whereas dwellings were interpreted later as examples of Lévi-Strauss's (1982, 1987) cognatic "houses" (e.g., Joyce 2007).

In a recent book, Ensor (2013b) critiques the assumptions underlying these, largely ethnohistoric, efforts to identify prehispanic kinship and argues that archaeological kinship analyses can better address the matter. The first half of his book describes the history behind the competing interpretations on prehispanic Maya kinship and the numerous problematic assumptions: a belief in one normative pan-Maya system despite obvious diversity, structural-functionalist leaps from nomenclature to social organization and marriage, static kinship despite centuries of dramatic change, few attempts to distinguish social classes when different kinship practices should be expected, and all with little to no data dating to the prehispanic periods in question. Ensor then presents a class-based archaeological kinship analysis of Islas de Los Cerros, a prehispanic Chontal Maya community, so as to illustrate how the disparate class contexts within the tributary political economy differentially structured kinship practices and gender relations.

Islas de Los Cerros was a sprawling Chontal Maya community occupying five islands and a peninsula within a lagoon along the Gulf of Mexico coast in Tabasco, Mexico (Figure 3). Although this area was also occupied in earlier periods, the extant residential mounds and other features all date to the Late Classic period (ca. 600-900 CE) when the region was under the administrative control of the interior capital at Comalcalco, located approximately 12 km upriver from the lagoon (Ensor 2003c; Ensor and Tun Ayora 2011; Ensor et al. 2006). The extensive oyster reefs surrounding the islands, along with other coastal resources, provided a subsistence base and were the objects of tribute taken to Comalcalco (Ensor 2003c), such as the thousands of tons of oyster shell used to manufacture the lime for mortar and stucco used in the extensive brick palaces and temples in the capital. Epigraphic data from Comalcalco also point to Islas de Los Cerros as its ma-

jor tributary (Zender 1998).

Four social classes were identified based on their relationship to tributary production. These included two distinct commoner classes and two elite classes (Ensor 2013b). The two commoner classes included, first of all, a populous class of resource-deprived commoners defined by the absence of local subsistence remains and otherwise common tools at residences, along with poor-quality housing materials. The residential mounds from this class are scattered across the islands. A second commoner class, consisting of resource-owning commoners, was defined either by the presence of local subsistence remains and fishing-related tools (at the South Group of El Bellote), or by association with oyster shell-processing locations (at the Southwest Group of Isla Chable), along with better quality housing materials. A class of resource-controlling elites was defined by its association with a large-scale collective fishing-related platform and a large shell-processing feature, along with high-quality housing materials (the South Group of Isla Chable). The last class, a ceremonial elite class -- the local nobility --, was defined by its association with large ceremonial mounds and temples, along with high-quality housing materials. The mounds associated with this class comprise the Northwest, Northeast, and Central groups of El Bellote.

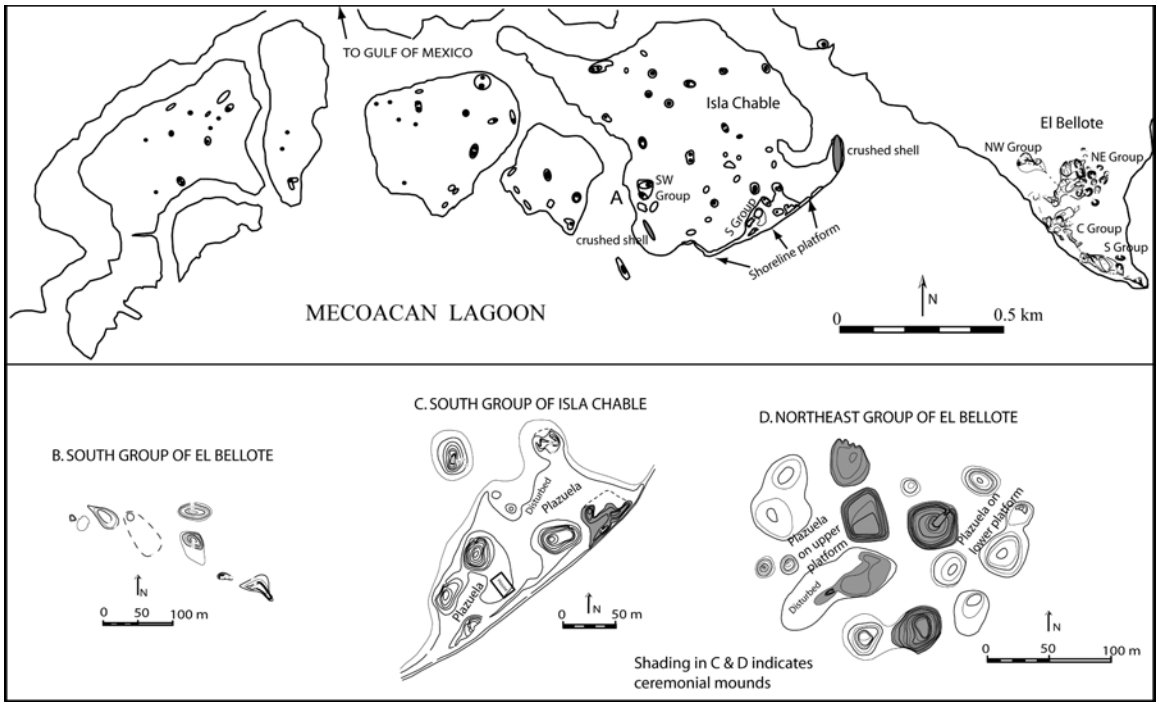

Figure 3. Community patterns at Islas de Los Cerros exhibiting neolocality with bilateral descent across most of the islands with bilocality (A and B), and patrilineages with patrilocality (C and D) (compiled and redrawn from Ensor et al. 2008).

Within Islas de Los Cerros, the resource-deprived commoners who occupied the mounds scattered across the islands were likely dependent on providing corveé labor in exchange for processed subsistence foods. This would have been the case at the fishing-related platform and at the shell-processing feature under the management of the re-

source-controlling elites. Presumably they were also laborers involved in constructing the mounds and temples of the ceremonial elites. The resource-owning commoners, having access to lagoon resources and having tools for processing resources at the Southwest Group of Isla Chable and at the South Group of El Bellote, independently met their own subsistence needs but also presumably contributed tributary surplus to the nobility at El Bellote who ultimately collected and shipped that surplus as tribute to Comalcalco.

The residential platforms and mounds associated with each of the social classes were too small to have accommodated matrilocal dwellings, thus indicating that each had a conjugal family dwelling. This inference is corroborated by the several floor sizes or lengths observed in these platforms and mounds. The residential mounds of the resource-deprived commoners rarely occurred in groups - nearly all were widely scattered and in the pattern cross-culturally associated with neolocality and bilateral descent (Figure 3). In contrast, the resource-owning commoners' residences occurred in informally-arranged groups associated with bilocal residential groups (Figure 3a and b). Both elite classes had plazuelas, indicating patrilocal residential groups. The resource-controlling elites at the South Group of Isla Chable had two adjacent plazuelas indicating patrilocal residential groups within a patrilineage (Figure 3c). The segment of the ceremonial elites in the Northeast Group of El Bellote had two plazuelas (indicating patrilocal groups), with one incorporating three ceremonial mounds and the other having one ceremonial mound. There was also a third subgroup with a residential mound adjacent to another ceremonial mound (Figure 3d). The segment indicates a larger patrilineage, which appeared to be internally ranked, as shown by differences in underlying platform heights, numbers of ceremonial mounds per plazuela, and differences in investments in architecture between the western and eastern patrilocal sub-lineage groups.

If we expect a normative pattern in kinship practices, the variation observed at Islas de Los Cerros would be confusing. However, once it is contextualized by class, the variation becomes structurally patterned, illustrating the problems with assuming normative models for Maya kinship. This case study also supports political economic theory (e.g., Moore 1988; Peletz 1995) on how kinship is manipulated in historically-contingent social contexts.

Third Case Study: Hohokam

The Taíno case study was forced to rely on normative residential information over time due to limited observations on dwellings. The Chontal Maya case study observed variation but only provided a synchronic example from one period. However, a Hohokam case study from the Phoenix Basin in the US Southwest, presented in Ensor (2013a), provides an opportunity to observe empirical variation within and across agricultural settlements for over 1400 years of prehistory, which makes it ideal for testing hypotheses and theoretical assumptions guiding ethnological generalizations on kinship. Three of the Hohokam sites are in close proximity to one another along the north side of the Salt River within the city of Phoenix: Pueblo Patricio (Cable and Doyel 1987; Cable et al. 1985; Henderson 1995), La Ciudad (Henderson 1987a, 1987b; Rice 1987), and Pueblo Grande (Bostwick and Downum 1994; Mitchell 1994). A fourth site, Snaketown (Haury 1976; Wilcox et al.

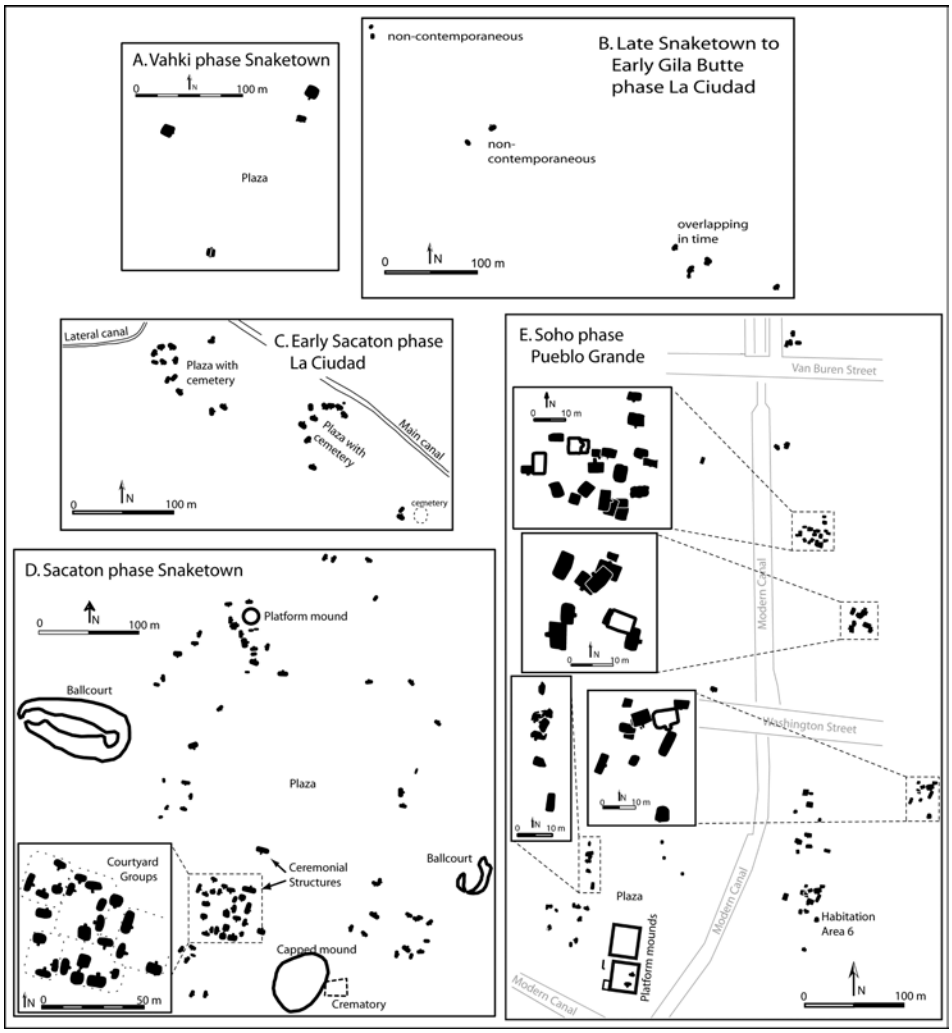

Figure 4. Community patterns from the Hohokam case study, illustrating a matrilineage with matrilocality (A), neolocality and bilocality with bilateral descent (B), patrilineages with patrilocality and virilocality (C), a patriclan with subclan lineages and patrilocality and virilocality (D), and cognatic residential groups (E) (compiled and redrawn from Ensor 2013a).

1981), is located along the Gila River, south of Phoenix,.

The earliest chronological components that have been examined date to the Red Mountain phase (CE 0-300) at the site of Pueblo Patricio. There were three non-contemporaneous and widely spaced conjugal family dwellings, one of which was merely an ephemeral structure. This community pattern indicates neolocality, presumably with bilateral descent, for occasional seasonal use of irrigable land (Ensor 2013a:70-72, 162).

In the subsequent Vahki phase, there were three components present at Pueblo Patricio and a more permanent settlement at the site of Snaketown. The first Vahki phase component at Pueblo Patricio (CE 300-450) had at least two widely spaced, informally arranged aggregates of conjugal family dwellings, indicating cognatic residential groups and bilateral descent (Ensor 2013a:72, 162). Another informal aggregate of conjugal fam-

ily residences represented the second component (CE 390-450), thus illustrating continuity in cognatic residence and bilateral descent. In the third Vahki phase component, there were two dwelling aggregates, one of which represented continuity in cognatic residence and the other, for which the dwelling arrangement was less observable, is suggestive of a second cognatic residential group (Ensor 2013a:72-73). Both are widely spaced, suggesting bilateral descent (Ensor 2013a:163). Meanwhile, completely different kinship relationships characterized the settlement at the site of Snaketown. There, the Vahki phase settlement involved three large matrilocal dwellings surrounding a plaza, thus reflecting the ideal cross-cultural pattern for matrilocality within a matrilineal descent group's location (Ensor 2013a:74-76, 163-165) (Figure 4a). Pueblo Patricio and Snaketown, then, indicate substantially different but contemporaneous kinship strategies used to form corporate agricultural land-occupying groups.

Kinship practices at Pueblo Patricio illustrate continuity through the Estrella (CE 525-600), Sweetwater (CE 600-675), and Snaketown (CE 675-750) phases, whereas residential practices were altered among the members of Snaketown's matrilineage. At Pueblo Patricio, an informal aggregate of conjugal family dwellings dating to the transition between the Estrella and Sweetwater phases, and another dating to the Sweetwater-Snaketown phase transition, depict cognatic residential groups and bilateral descent (Ensor 2013a:76-77, 165-166). Pueblo Patricio was abandoned thereafter. At Snaketown, the large matrilocal dwellings of the Vahki phase were replaced in the Estrella phase by conjugal family dwellings surrounding the plaza, suggesting avunculocality within the matrilineage's location (Ensor 2013a:78, 166). In the Sweetwater phase, this pattern continued but was joined by pairs of dwellings surrounding the plaza, suggesting both avunculocality and initial cognatic residence at the matrilineage's location. This latter pattern continued through the Snaketown phase (Ensor 2013a:79-80, 166-168). Thus, whereas the cognatic strategies used to form and maintain corporate land-using groups remained the same through time at Pueblo Patricio, the residence strategies at the Snaketown matrilineage's location changed over time from matrilocal to avunculocal and then to avunculocal and cognatic.

The community patterns at Snaketown and during colonization of La Ciudad illustrate different and changing kinship practices during the Gila Butte phase (CE 750-875). At Snaketown, informal aggregates of conjugal family dwellings are accompanied by formal aggregates of conjugal family dwellings that surround and face small plazas (termed "courtyard groups" in the Hohokam literature). These are positioned around the ancestral Snaketown plaza. These indicate both cognatic and patrilocal residential strategies with a descent group. The corporate descent group at this time grew in population size and included ceremonial structures among the residential groups surrounding the plaza. The combination of cognatic and patrilocal residential strategies has been interpreted as a change in membership and identity toward an ambilineal descent group (a "ramage") (Ensor 2013a:80-83, 168-170) because, cross-culturally, bilocality can accompany matrilineal descent but patrilocality does not (e.g., Pasternak 1976:44-46). Meanwhile, the site of La Ciudad was being colonized at the end of the Snaketown phase using a different kinship strategy. The first component, dating to the

Snaketown-Gila Butte phase transition, involved using widely dispersed conjugal family dwellings indicating neolocal strategies (along with one bilocal residential group) (Figure 4b) to colonize new agricultural lands. The second component, within the Gila Butte phase, shows the development of cognatic residential groups (exhibited by informal aggregates of conjugal family dwellings), which would have used bilateral relations in their formation after initial neolocal colonization (Ensor 2013a:87-89). The informal settlement layout for both of these early components indicates bilateral descent (Ensor 2013a: 170). When corporate descent group membership at Snaketown shifted from matrilineal to ambilineal descent, La Ciudad was colonized using neolocal strategies to claim lands with which to develop extended cognatic residential groups through bilateral descent.

Three sites were used in the analysis of the Santa Cruz phase (CE 875-975). The Gila Butte phase, with ambilineal descent group organization and cognatic and patrilocal residence at Snaketown, continued unchanged through the Santa Cruz phase while the descent group gradually grew in population size. Meanwhile, small patrilineages emerged at La Ciudad and at Pueblo Grande. At La Ciudad, in the earliest of three Santa Cruz phase components, some of the same, previously established, group locations maintained informal aggregates of conjugal family dwellings, whereas others were transformed into formal courtyards, thereby indicating both cognatic and patrilocal residential groups with bilateral descent (Ensor 2013a:87, 172-174). In the second component, formal courtyards and additional conjugal family dwellings surrounded plazas with cemeteries in two locations, indicating the development of two descent groups combining patrilocality and virilocality, which indicates patrilineage organization with different emphases on patrilineal residential affiliation: with the patrilineage or with a core patrilocal group within the patrilineage. In addition, one cognatic group persisted without altering its residential strategy (Ensor 2013a:87, 172-174). In the third Santa Cruz phase occupation, the two patrilineages persisted alongside the cognatic residential group (Ensor 2013a:87, 172-174). At Pueblo Grande, which was colonized in the Gila Butte phase, the Santa Cruz phase dwellings occurred in small formal courtyard arrangements surrounding a plaza, indicating a corporate patrilineage with patrilocality (Ensor 2013a:174-176). Although Snaketown's community patterns suggest continuity in ambilineal descent with diverse residential strategies, patrilineage organization was emphasized more commonly at La Ciudad and at Pueblo Grande.

At the outset of the Sacaton phase (CE 975-1150), significant changes occurred at Snaketown and Pueblo Grande. La Ciudad's two patrilineages that combined together patrilocality and virilocality, along with its cognatic residential group (Figure 4c), persisted into the beginning of this phase, albeit with fewer dwellings, until the settlement was abandoned (Ensor 2013a:91-93, 179-180). In contrast, Snaketown's population experienced further growth, but with dramatic changes to its social organization. At this time, the descent group incorporated more ceremonial features surrounding the plaza and three distinct residential segments emerged, each with multiple formal courtyards and dispersed conjugal family dwellings in proximity to each other. Also surrounding the plaza were non-aggregated conjugal family dwellings. The segments emphasizing courtyard groups exhibit the expected pattern for multiple patrilineages within a larger patrilineal

Table: Summary of kinship practices in the Hohokam case study

Phase	Pueblo Patricio	Snaketown	La Ciudad	Pueblo Grande
Polvorón	-	-	-	Bilateral descent with neolocality, bilocality, and patrilocality
Civano	-	-	-	Ramage with ambilocality and bilateral descent with bilocality
Soho	-	-	-	Ramage with ambilocality and bilateral descent with bilocality
Sacaton	-	Patriclan with 3 patrilineages, patrilocality and virilocality	Bilocality and two patrilineages with patrilocality and virilocality	Ramage with ambilocality and large immigrant population with bilateral descent and bilocality
Santa Cruz	-	Ramage with ambilocality and patrilocality	Bilocality and two patrilineages with patrilocality and virilocality	Patrilineage with patrilocality
Gila Butte	-	Ramage with ambilocality and patrilocality	Bilateral descent with bilocality	Patrilineage with patrilocality
Snaketown	-	Ramage with ambilocality and patrilocality	Bilateral descent with neolocality	-
Sweetwater	Bilateral descent with bilocality	Matrilineage with avunculocality and bilocality	-	-
Estrella	Bilateral descent with bilocality	Matrilineage with avunculocality	-	-
Vahki	Bilateral descent with bilocality	Matrilineage with matrilocality	-	-
Red Mountain	Bilateral descent with neolocality that developed into bilocality	-	-	-

descent group (i.e., a patriclan) (Figure 4d). The non-aggregated conjugal family dwellings within the segments suggest virilocality within the patrilineages. The additional non-aggregated conjugal family dwellings outside the segments but surrounding the plaza suggest virilocality within the patriclan. Thus, membership and identity were negotiated among three levels of patrilineal organization, namely negotiations with patrilocal residential groups within patrilineages, with patrilineages, or only with the patriclan (Ensor 2013a:91, 176-179). Meanwhile, at Pueblo Grande a significant number of new residential groups were suddenly established at the beginning of the phase. These were located to the north and east of the ancestral patrilineage's location. The new residential groups were aggregates of informally arranged conjugal family dwellings, signifying cognatic residence, and were spread out in an informal arrangement throughout the newly occupied areas, indicating bilateral descent. However, the patrilineage was transformed into an ambilineal descent group - the plaza orientation was maintained but with aggregated informal arrangements of conjugal family dwellings indicating cognatic residential groups (Ensor 2013a:93-95, 180-182). Thus, as Snaketown's descent group transformed from a ramage into a group with patrilineal segmentary organization, the patrilineage at Pueblo Grande simultaneously transformed into a ramage, presumably in response to the ecological demands on its ancestral resources due to the large influx of migrating bilocal residential groups. These community patterns continued throughout the remainder of the Sacaton phase until Snaketown was eventually abandoned.

The final three phases in the study were observed only at Pueblo Grande. Although significant changes occurred to Hohokam ceramic, burial, and architectural "traits," there is remarkable continuity in kinship throughout the Sacaton, Soho (CE 1150-1300) and Civano phases (CE 1300 - ca. 1400). The same dual strategies observed for the beginning of the Sacaton phase - the ancestral descent group (having become a ramage) alongside a growing number of bilocal residential groups using bilateral descent (Figure 4e) - continued until Pueblo Grande was either depopulated or abandoned and then re-occupied by other groups in the Polvorón phase (ca. CE 1400-1450). In that final phase of occupation, there were formal courtyard groups, informal aggregates of conjugal family dwellings, and isolated conjugal family dwellings scattered informally across the settlement, illustrating a diversity of residential groups (patrilocal, cognatic, and neolocal) under bilateral descent (Ensor 2013a:102-104, 188-189).

The Table summarizes the different kinship practices within and across the four settlements over time. During the Red Mountain and Vahki phases, the colonization of Pueblo Patricio entailed neolocality with bilateral descent whereas a matrilineage with matrilocality was established at nearby Snaketown. During the subsequent phases, biolocal residential groups developed at Pueblo Patricio while the matrilineage at Snaketown persisted, but with a shift to avunculocality and then to both avunculocality and bilocality. The colonization of La Ciudad was through the same neolocal strategies used centuries before at Pueblo Patricio. Those conjugal families soon developed into bilocal residential groups. Two of these developed into patrilineages, whereas a third became a patrilocal group and a fourth remained a bilocal group within the same settlement. Meanwhile, the matrilineage at Snaketown was transformed into an ambilineal ramage and

Pueblo Grande was occupied by a patrilineage. The ramage at Snaketown was transformed into a patriclan with three internal patrilineages accompanied by both patrilocality and virilocality. The patrilineage at Pueblo Grande was transformed into a ramage at the same time that a large population of bilocal residential groups was suddenly established there. These practices continued at Pueblo Grande through the Soho and Civano phases until the Polvorón phase when there was a mix of neolocal, cognatic, and patrilocal residential groups using bilateral descent. During each phase there was variability among settlements, even within settlements. If nothing else, Hohokam kinship practices were situational, manipulable, and negotiable.

Evaluation of Hypotheses

The three case studies are also examples showing how archaeological kinship analyses can be used to test ethnologically derived hypotheses. As described in the first section of this article, ethnology lacks sufficient time depth to provide the diachronic observation needed to evaluate most of its hypotheses on how kinship practices change. Archaeological kinship analysis, which can infer residential practices and discriminate between descent groups and bilateral descent, provides a solution to this problem. The strong cross-cultural associations between dwelling arrangements and residence practices, and between community patterns and descent groups versus bilateral descent, provide the needed mid-level inferences. These mid-level inferences establish "empirical" observations of kinship practices within societies (thereby enabling the observation of variability) and over longer periods of time than is possible through ethnology - precisely what is needed to evaluate hypotheses on the origins of kinship practices.

Functionalist theory generated questions about the socioeconomic and ecological circumstances associated with kinship practices as a means to explain their emergence. Ensor (2013a) has evaluated several functionalist-derived hypotheses using the Hohokam case study and the evidence from the Chontal Maya (Ensor 2013b) and Taíno (Ensor 2012) case studies that have been synthesized and summarized here. Readers are directed to those sources for a more in-depth discussion.

Normative Characterizations

Ethnological testing of hypotheses has depended upon an assumption of normative kinship practices among bounded cultures: i.e., that each defined "culture" has one dominant or universal behavior. Functionalist hypotheses on how kinship practices change are most commonly generated through logic consistent with high-level theory and tested cross-culturally for correlations with factors that, in accordance with functionalist theory, should influence kinship practices (e.g., ecology or mobility, yet with synchronic associations in each culture used in the analysis). Whether using one culture for illustration, or numerous cultures for cross-cultural analysis, each defined culture (actually an ethnographic community serving as the basis for a generalization) is assigned a normative characterization. For the reasons described above, the Taíno case study needed to assume normative practices and therefore cannot be used to address the degree of adherence to normative practices. The empirical analyses in the Chontal Maya and Hohokam case studies do address

this question. At Islas de Los Cerros, postmarital residence and descent varied by social class. Across, and sometimes within, the Hohokam settlements there was no uniform practice regarding residence or descent during any phase (see Table). Furthermore, it is highly doubtful that normatively described practices or kin terms from a nineteenth or twentieth century descendent ethnographic community could be used to successfully identify the amount of prehistoric variation and change. These case studies demonstrate that any theoretical or methodological assumption of normative cultural behavior is highly problematic.

Residence

Several hypotheses on residence can be addressed, thereby illustrating archaeology's potential to test ethnologically derived explanations. Driver and Massey's (1957) gendered division of labor hypothesis - that matrilocality occurs when women's subsistence labor is localized and patrilocality occurs when men's subsistence labor is localized - was supported by Korotoyev's (2003) cross-cultural analysis, for the Americas by Ember and Ember (1971) (but not universally), and, in the case of matrilocality, found support by Gough (1961b) and Aberle (1961). In the Caribbean Saladoid periods, when matrilocality is normatively interpreted, subsistence primarily included localized horticulture (associated with women) and nonlocalized fishing (associated with men). The gender division of labor hypothesis explains the Saladoid matrilocality but not the Ostionoid avunculocality when the same gender roles occurred. In the Hohokam case study, matrilocality at Snaketown was associated with women's local crop-production, while most other subsistence activities by both men and women were nonlocalized, which conforms with the gender division of labor hypothesis. However, the hypothesis fails to predict the more numerous other forms of residence and descent throughout the majority of the sequence using the same, albeit intensified, irrigation farming. Thus, the hypothesis is not supported most of the time. Ensor (2013a:279) notes that men's ceremonial work at settlements increased over time, suggesting that any localized labor among men (not just subsistence) may have promoted patrilocality. So the gender role hypothesis finds greater support if it is not based exclusively on subsistence, but rather, by also considering other important localized roles (in this case, ceremony).

Bilocality has been explained as the result of small populations, depopulation, migration, gender equality in inheritance, and/or resource shortages/unpredictability (Eggan 1966:58-64; Ember and Ember 1972; Murdock 1949:204; Pasternak 1976). Bilocality in the archaeological case studies occurred when resources were controlled by commoners at Islas de Los Cerros, after avunculocality with Snaketown's matrilineage, shortly after neolocal colonization at La Ciudad and the founding of the first corporate kin groups (and continuing alongside patrilocality and virilocality at that settlement), and among the late new populations at Pueblo Grande sharing resources with that settlement's ancestral patrilineal descent group, which responded to the change by shifting to ambilineal descent. Population size and gender status does not explain bilocality in these cases. It did occur under conditions of migration and resource stress, though it appears to have been a strategy for founding new corporate groups even without resource stress. Thus,

none of these hypotheses provides a universal explanation - bilocality appears to have been a strategy used under numerous social and ecological circumstances.

All is not negative, however. The archaeological analyses do support some hypotheses used for generalizations. For example, Gough's (1961b) hypothesis that matrilineal descent groups are a precondition for the emergence of avunculocality is supported by both the Taíno and Hohokam case studies. In both cases, avunculocality with matrilineal descent group locations were preceded by matrilocality along with matrilineal descent groups. Also, hypotheses used to explain neolocality include private property, dependence on wages, and capitalist markets (Ember 1967; Gough 1961a; Linton 1952:84; Steward 1959). This is supported by the resource-deprived class of commoners at Islas de Los Cerros, who were dependent on corvée labor. This was the only class with neolocality, which supports the notion that neolocality is associated with economic dependence on non-kin due to a lack of resource ownership.

Descent

Hypotheses on descent can also be evaluated through archaeological kinship analyses. Logically consistent with functionalism's materialist perspective, descent is widely believed to stem from residence practices, a viewpoint that overturned the mid-twentieth century ideational view of residence following from cognitive descent beliefs. Thus, according to functionalist assumptions, matrilineages should develop from expanding matrilocal groups and patrilineages should grow from expanding patrilocal groups (e.g., Fox 1967:84). However, ethnological cross-cultural analyses do not support strong associations between residence and descent, casting doubts on the descent follows from residence hypothesis. In the Hohokam case study, which provides diachronic observations on the appearance of different forms of descent, the bilocal residential groups at La Ciudad were transformed into small patrilineages. At Snaketown and at Pueblo Grande, descent strategy and residential strategy also changed at the same time. These indicate that neither residence nor descent followed from the other, but rather that both were simultaneously manipulated.

Another functionalist hypothesis has been that patrilineal descent groups are associated with intensive agriculture (e.g., Haury 1956) but Aberle's (1961) cross-cultural correlations between the two were not strong enough for predictive reliability. In all three of the case studies presented here, subsistence strategies changed little yet were associated with a variety of forms of descent. In the Hohokam case study, intensified irrigation agriculture was accompanied by a wide range of descent practices, which also suggests little relationship between subsistence strategy and descent.

Stemming from Ember and Ember (1971, 1972) and Ember et al (1974), another explanation for both residence and descent is the warfare hypothesis. Their cross-cultural analyses suggested an association between internal warfare and patrilocality, external warfare and matrilocality, and warfare and unilineal descent groups. Although scrutinized for evidence of warfare, there is little to no evidence for violent conflict in the Hohokam region during most periods (Fish and Fish 1989; LeBlanc 2000:45-46; Nelson 2000:326) when a diversity of kinship practices and changes to them occurred. There is also little

evidence for warfare in Taíno prehistory. Thus, warfare cannot explain any of the kinship practices. The regional Chontal state under Comalcalco's rule, in contrast, was founded through warfare and consolidation. After consolidation, a diversity of kinship practices were present at Islas de Los Cerros, which are, instead, far better explained by class contexts within the tributary political economy.

New Insights

Archaeological kinship analyses also contribute insights unavailable through the limited time periods for ethnological observation, yet can significantly influence how we understand kinship practices. The descent group at Snaketown experienced multiple changes to its membership descent principles over the course of its 800 years of existence. Other long-lasting descent groups, like those at La Ciudad and Pueblo Grande, also changed membership descent principles over time. In the case of the Snaketown descent group, the latest form was patrilineal and was reproduced through patrilocal postmarital residence (along with virilocality). Using just that as an observation, however, we would not likely predict that the same descent group was previously ambilineal, or matrilineal before that, nor could we predict the numerous forms of residence that accompanied those changes. Furthermore, these examples illustrate how individual corporate descent groups may persist. The groups did not simply disappear only to be replaced by different groups. Instead, they went through changes in the way people recognized their descent from the same founding ancestors as a way to justify group membership, access to resources, and/or sources of mutual support. Such changes also illustrate a distinctly social foundation behind Sahlin's (2013) concept of "mutuality of being" among descent group members. This contrasts with the limited glimpses ethnographers have regarding how descent groups may alter membership criteria, which is only under periods of expanding capitalism (e.g., Ellison 2009).

New insights may also be obtained on kinship practices under contexts rarely observed during the time periods for ethnological observation. Although neolocality occurred during initial colonization at La Ciudad, these conjugal families quickly developed into larger bilocal groups in two generations and two of them were quickly manipulated into patrilineages. This suggests that neolocality may also be favored as a temporary strategy to found larger corporate kin groups by using bilateral networks when resources are available to be claimed. Having resources open to claim is a rare circumstance during the historical periods of ethnological observation. Even rarer are ethnological observations on founding ancestors of indigenous groups. Thus, archaeology can contribute a broad range of observable contexts under which kinship practices appear.

Summary and Conclusions

Ethnology, the subfield that has traditionally generated the most research on kinship systems, relies too heavily on synchronic and problematic normative data, and provides insufficient chronological depth for satisfactorily testing many of its hypotheses, which are diachronic in nature. Although ethnohistory can extend the time frames, archival records can be fragmentary or biased by colonial perspectives, leading to additional caveats in

assumptions and interpretations. Acknowledging these problems identifies the need to develop methods for independent archaeological kinship analysis as a way to test ethnological hypotheses and produce new insights on kinship practices.

Unlike high-level theory, where explanation is logically consistent with the theory, mid-level theory involves factual correspondence between ethnographically observed behaviors and patterns in material culture without making the assumptions of high-level explanations. Strong cross-cultural correlations allow archaeologists to infer kinship practices from patterns in spatial data for dwellings in settlements. As a form of empirical kinship analysis, the inferences can identify variation and change. Unlike ethnology, the archaeological inferences can be made deep into prehistory, enabling significantly greater time-depths for evaluating diachronic hypotheses on the emergence of, and change in, kinship practices.

Three, already published, case studies were summarized. The Caribbean case study illustrates matrilocality with matrilineal descent groups during the Saladoid era, which transformed into avunculocality with matrilineal descent groups in the subsequent Ostionoid era. In the Chontal Maya case study, what superficially appears as enormous variation in residence and descent is identified as class-based structuring of kinship relations when classes are defined by their social contexts within the tributary political economy. Resource-deprived commoners, depending on corvée labor, practiced neolocality with bilateral descent. Resource-owning commoners had extended bilocal residential groups. The resource-controlling elites used patrilocality. The ceremonial elites included one patrilineage with ranked patrilineal subgroups and additional patrilineal groups practicing patrilocality. The Hohokam case study provides over 1400 years of variation and change in numerous kinship practices both within and across settlements (see Table).

The archaeological analyses add to previously expressed concerns about using normative characterizations of kinship practices. Contrary to these normative assumptions, class-based variation is demonstrated at Islas de Los Cerros. In the Hohokam case study, the variation within each phase, even among coeval groups within some settlements, defies normative depictions. These findings highlight the problems inherent in cross-cultural analyses that must assume one set of practices per "culture."

Several functionalist-driven generalizations were evaluated. The gender division of labor hypothesis for postmarital residence did not explain well the residential groups among the Taíno or the Hohokam, and it seems even less relevant to residence at Islas de Los Cerros. Rather than the singular causes previously hypothesized as a way to account for bilocal residential groups, the archaeological kinship analyses show that multiple factors need to be taken into account. In contrast, the hypothesis that matrilineal descent is a precondition for avunculocality was supported by the case studies, along with the hypothesis that kin groups (e.g., extended residential groups and descent groups) developed as resource-holding groups, whereas neolocality was associated with lack of resource ownership. However, according to the case studies, descent groups did not develop from residential practices, as has been hypothesized. Instead, residence and descent group membership principles changed simultaneously. Further, neither subsistence base nor conflict explained unilineal versus bilateral descent in the case studies. Overall, then,

most of the functionalist hypotheses are unconvincing in light of the archaeological case studies, suggesting a problem with functionalist theory itself and/or the ethnological methods, data, and limited periods for observation that have been used in the past for testing them.

New insights unavailable through the limited ethnological periods of observation were also generated from the archaeological kinship analyses. Long-lasting descent groups are observed to have dramatically altered their membership descent principles over longer periods of time than is available through ethnological observation, a result that could influence how anthropologists understand descent groups. The ancestral founding of descent groups could also be observed – something generally unobservable to ethnology. In one case, the archaeological observations added a new condition under which neolocality was strategically used to initiate groups using bilateral networks to form bilocal groups, some of which became patrilineages.

Acknowledging the data limitations underlying ethnological testing of hypotheses on kinship practices illustrates the need to develop the methods of archaeological kinship analysis. The main lessons learned from the case studies are that normative depictions of kinship practices are inaccurate; that even well-accepted ethnological explanations for kinship practices need reconsideration through the long-term and empirical capacities of archaeology; and that the production of archaeological kinship research not only expands our understandings of past societies, but also provides new insights generally unavailable through limited periods of ethnological observation. In short, archaeology has a major contributory role to play in kinship research.

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