Dual organization and social inequality in a Venezuelan chiefdom, AD 550–1000

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ABSTRACT

We use archaeological data from the El Gaván site (B12), the paramount center of a pre-Hispanic regional chiefdom during the Late Gaván phase (AD 550–1000) in Barinas, Venezuela, to test two hypotheses about dual organization derived from the ethnographic literature of lowland South America: (1) the hypothesis of gender-linked polarity-complementarity (GLPC); and (2) the hypothesis of exogamous moieties with virilocal residence (EMVR). Spatial analyses of artifact distributions on the floors of two excavated houses reveal that both houses were divided into two complementary activity areas that can be associated with the adult females and adult males of the households, consistent with the GLPC hypothesis. Shifting our perspective to the community level, we conduct statistical analyses of artifacts from test pits in each of the site's two sectors of house mounds; the results are consistent with the EMVR hypothesis. We then consider how dual organization might have intersected with conditions of social inequality in the El Gaván chiefdom.

Keywords:

Spatial analysis

Household archaeology

Gender

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Moieties

Exogamy

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1. Introduction

Among the most-discussed issues in South American anthropology have been the prevalence and significance of dual organization in the indigenous societies of the tropical lowlands lying east of the Andes (Hornborg, 1988; Lévi-Strauss, 1963, pp. 132–163; Maybury-Lewis, 1974, pp. 296–300, 1979a; Moore, 1995; Nimuendajú and Lowie, 1937). The ethnographic literature presents a range of variation. Some researchers report dualistic ideologies based on principles of “polarity-complementarity” and dyadic classifications of space and/or activities, linked to the opposition between male and female identities (Goldman, 1963, pp. 31, 281–283; Maybury-Lewis, 1979b, pp. 234–235, 1979c, p. 312). Others describe moiety organizations that vary in the form of lineal descent (patrilineal vs. matrilineal) and the degree and form of exogamy (virilocal vs. uxorilocal), sometimes cross-cut by other dualistic structures (Chagnon, 1968, pp. 58–72; Crocker, 1979; Hornborg, 1988; Lévi-Strauss, 1963, pp. 120–131, 1965; Maybury-Lewis, 1974, pp. 237–239, 1979b, 1979c; Nimuendajú and Lowie, 1937; Oberg, 1953, p. 127). For example, Chagnon reported that patrilineal descent plus virilocal (patrilateral) exogamy resulted in a form of dual organization among the Yānomamö of southern Venezuela: “First, people reckon descent through males and are grouped into exogamous, patrilineal lineages...Second, members of these lineages tend to intermarry with the members of a second lineage over a number of generations, being bound to them by obligations to reciprocate women in marriage. This results in a dual organization of kinsmen within the village, whose residents fall into one or the other of the two lineages” (Chagnon, 1968, p. 61).

Scholars have shown particular interest in reports of bilateral community layouts that appear to reflect the residential arrangement of exogamous moieties (Albisetti, 1953; Lowie, 1941; Nimuendajú, 1939, 1942, 1946; Nimuendajú and Lowie, 1937).

Nimuendajú, reporting from Brazil, described Šerente (Šere´nte) villages as follows: “Thus the houses were grouped in a north and south segment; on the north side of every village were the clans of the sdakrã moiety, on the south the clans of the šiptato´ moiety...The moieties are patrilinear, patrilocal, and exogamous...” (Nimuendajú, 1942, p. 16). In a separate study, he reported matrilineal, matrilocal moieties among the Apinaye´, though he noted an analogous correspondence between moiety structure and village layout: “The Apinaye´ are matrilocal and organized in matrilineal moieties (mẽ-gã-čã), each of which formerly occupied a definite part of the village. The one localized in the northern half of the circle is called Kol-ti or Ko´lo-ti, i.e., Sapucaia chestnut (*Lecythis ollaria*); the complementary division bears the name of Kol-re or Ko´lo-re, i.e., Pará chestnut (*Bertholletia excelsa*)” (Nimuendajú, 1939, p. 21). The Apinaye´ moieties were apparently not of equal status: “The Apinaye´ often speak of the Kolti and the Kolre as the Upper and Lower village, respectively, regardless of the actual topographic conditions...Village chiefs are always Kolti; and wherever both divisions jointly figure in ceremonial, the Kolti claim precedence corresponding to the status of the Šere´nte North moiety” (Nimuendajú, 1939, p. 21). In *The Eastern Timbira*, Nimuendajú reported matrilineal, matrilocal moieties for the Canella, though he noted no inequality between them: “Each of these moieties occupies one-half of the village—the ko´ ikateye (ko´i = east, hence: those of the east) the eastern part of the circle, the harã´kateye (harã = west,

hence: those of the west) the western part...The moieties are altogether equal in rank; specifically, the eastern moiety is in no way superior” (Nimuendajú, 1946, p. 79).

Some researchers have been skeptical of reports that depict a straightforward correspondence between moiety organization and village layout (Lévi-Strauss, 1963, pp. 132–163; Maybury-Lewis, 1979b, pp. 219–221, 232–233; Moore, 1995). Revisiting the Sherente (Šerente) two decades after Nimuendajú, Maybury-Lewis (1979b, p. 219) saw a society “somewhat different from the one presented by Nimuendajú...Their moieties and clans were not spatially located and nobody gave a thought to moiety exogamy.” Lévi-Strauss (1963, pp. 153–162) suggested that Nimuendajú’s view of symmetric, spatially discrete moieties was simplistic; he argued that inter-moiety relationships were frequently asymmetric and unequal, and their spatial distributions more often blended than discrete. Moore (1995, p. 176) went further, asserting: “The ethnographic data suggest that to characterize moiety organization as prevalent or widespread in South America is probably to overstate the case.”

It is possible, as some have proposed, that exogamous moieties and other expressions of dual organization were more prevalent in lowland South America prior to the European incursions and consequent changes in these traditional societies (Nimuendajú, 1942, p. 8, 1946, pp. 1–5, 79; Lévi-Strauss, 1944, p. 38). If so, then one might expect the pre-Hispanic archaeological record to yield evidence of such dualism. Yet published archaeological examples of dual organization have thus far come not from the eastern lowlands but from the central Andean zone of western South America (Anders, 1986; Moore, 1995; Moseley, 1992; Netherly, 1990; Netherly and Dillehay, 1986). Taking a skeptical view, Moore suggested that some researchers have been too

eager to seize upon “some form of paired construction, spatial division, or other architectural feature” as solid evidence of dual organization (1995, p. 168). He indicated that archaeologists should avoid “applying a generic dualism to all the prehistoric peoples and cultures of South America” (Moore, 1995, p. 177–178). Although this advice has merit, one could also argue that extreme skepticism runs the risk of being counterproductive. It would surely be imprudent to dismiss dyadic patterns in the archaeological record that might turn out, upon further analysis, to be evidence of some form of pre-Hispanic dual organization.

At this juncture, our own view is that researchers would be wise to put aside sweeping generalizations about dualism throughout lowland South America and pursue detailed investigations of individual cases. In this paper we examine the evidence of dual organization in the El Gaván chiefdom during the Late Gaván phase (AD 550-1000), located in the western llanos (savanna grasslands) of the Venezuelan state of Barinas. We use archaeological data to test two ethnographically-derived hypotheses: (1) the hypothesis of gender-linked polarity-complementarity (GLPC); and (2) the hypothesis of exogamous moieties with virilocal residence (EMVR). We also consider how dual organization might have intersected with conditions of social inequality in this pre-Hispanic society.

2. The El Gaván chiefdom

In 1983-1988, we carried out a program of archaeological survey and excavation in a study region that overlapped portions of the llanos and Andean piedmont zones in

Barinas (Redmond and Spencer, 2007; Spencer, 1998; Spencer and Redmond, 1992, 1998, 2014; Spencer et al., 1994) (Fig. 1). A major goal of our research was to determine whether in pre-Hispanic times this region was ever occupied by a chiefdom, defined by Carneiro (1981, p. 45) as “an autonomous political unit comprising a number of villages or communities under the permanent control of a paramount chief.”

In the llanos, our survey documented 34 habitation sites and two drained-field agricultural sites that date to the Late Gaván phase, AD 550–1000 (Fig. 2) (Redmond and Spencer, 2007, pp. 126–136, Fig. 4.2, Table 5.2; Spencer and Redmond, 2014, Fig. 1.3, Table 1.1). The largest site by far was B12 (El Gaván), which covered 33 ha and had numerous mounds, two of them reaching 10–12 m in height, along with other impressive earthworks (Fig. 3). We located five other sites that we consider to be second-tier settlements in the El Gaván region (B97, B21, B25, B17, and B30); these sites ranged in size from 4.6 to 9.4 ha and had two to four mounds that reached 2–6 m in height. We also defined a third settlement tier represented by the remaining 28 sites, which ranged in size from 0.5 to 5.0 ha and had no mounds detectable by surface survey. Such a three-tier settlement hierarchy would be consistent with chiefdom political organization, and we have proposed that first-tier B12 was the paramount center of a regional chiefdom dating to AD 550–1000 (Redmond and Spencer, 2007, pp. 323–324; Spencer and Redmond, 1992, 1998, 2014, pp. 754–755).

B12 was linked by a calzada (earthen causeway) network to four, and perhaps all five, of the second-tier sites, as well as to many of the smaller sites (Fig. 2). Three inter-site calzadas approached B12 from the northwest, southeast, and southwest (Fig. 3). We have estimated that the calzada network would have connected about two-thirds of the

total population of the El Gaván regional chiefdom (Spencer and Redmond, 1998, p. 107). We think it is significant that the two drained-field agricultural sites (B27, B52) both lay along a calzada (Fig. 2). The results of our survey and excavation at one of these drained-field sites (B27) revealed that maize was the primary crop, which we suspect was cultivated by farmers who lived at the nearby village of B26 (Spencer et al., 1994). We have calculated that the B27 fields were capable of substantial surplus production well beyond the needs of the local cultivators. Such surplus was probably transported along the calzada network to B12, where the regional chiefly leadership would have coordinated its mobilization, storage, and utilization (Spencer et al., 1994). Based on the extent of the regional calzada network and the associated pattern of settlement, we have estimated that the El Gaván regional chiefdom extended over a territory of roughly 290 km² in the Late Gaván phase (Redmond et al., 1999, p. 117).

We also found evidence of occupation at three sites dating to the preceding Early Gaván phase (AD 300–550). One of them was B12 itself, which had an occupation area of no more than 5 ha at this time; the other two (B97 and B21) were each about 3 ha in size. There were no mounds or earthworks at any of these sites that could be dated to the Early Gaván phase. We have concluded that these Early Gaván occupations are consistent with an uncentralized regional polity, and that chiefdom formation probably occurred in this area at the onset of the Late Gaván phase, around AD 550 (Spencer and Redmond, 2014, pp. 775–786).

At the first-tier center of B12, we excavated 54 test pits (of which 43 were distributed according to a systematically-stratified, random-sampling design, while 11 were placed judgmentally), along with three areas of horizontal block excavations (Fig.

3). The two largest mounds, Mound A and Mound E, stood 500 m apart at opposite ends of a central avenue that was flanked by 134 smaller earthen mounds, most of them 1 m or less in height. All the earthen mounds at B12 lay within an oval earthwork, measuring 950 m by 470 m in plan view. Each leg of the oval (in cross-section) was approximately 8 m wide and 1 m in height. Our Area B excavation found evidence that a palisade originally sat atop this circumscribing earthwork (Spencer and Redmond, 2014, Fig. 6.117). Based on the results of our survey and excavations (Spencer and Redmond, 2014, pp. 185–530), we have concluded that the 134 smaller earthen mounds were probably all residential in function, as evidenced by the domestic debris (such as grinding stones and other food-preparation artifacts) usually associated with them. In contrast, no grinding-stone fragments were found in excavations placed in and around Mound A, which also featured an imposing 80-m-long earthen ramp that led from the central avenue to mound's summit (Fig. 3; Spencer and Redmond, 1998, p. 104, Table 3, 2014, p. 347). We suspect that this ramp was built to facilitate access by numerous people on a regular basis to whatever structure sat atop the mound. We noted that the top surface of Mound A appeared to be too small, relative to the mound's basal diameter (90 m), to have supported a residence of a size commensurate with the mound's overall bulk, which suggests that Mound A was a non-residential public building, perhaps a ceremonial structure. Although time limitations prevented us from excavating in or near Mound E, its conical shape resembled that of Mound A and would also be consistent with nonresidential use. In sum, at B12 we have two sizable earthen mounds (the largest in our entire study region) with probable public functions; the 134 smaller mounds were most likely all residential.

3. Dual organization on the household level

We chose two of the B12 house mounds for horizontal block excavations, called Area A and Area D, the locations of which are marked with lettered black rectangles on the site map (Fig. 3). The Area A and Area D house mounds were selected for excavation because they appeared to be relatively undisturbed by recent activity and because they lay on opposite sides of the main avenue (some 40–45 m wide) that bisected the settlement. We excavated each house mound by cultural stratigraphy, usually in levels no more than 5 cm thick, and by horizontal grid units of 1×1 m. We made a special effort to define living surfaces and to recover all the features and artifacts associated with those surfaces.

Let us use the distributions of the various artifact categories to conduct a spatial analysis of household activities, and proceed to test the hypothesis of gender-linked polarity-complementarity (GLPC). This hypothesis contends that domestic activities were structured by a fundamental principle of polarity-complementarity, linked to the binary opposition of male and female genders (Goldman, 1963, pp. 31, 281–283; Maybury-Lewis, 1979b, pp. 234–235, 1979c, p. 312). A measure of prior plausibility (see Smith, 1977) can be lent to the GLPC hypothesis by drawing an analogy with Early Formative (ca. 1400–700 BC) households in Oaxaca, Mexico, where archaeologists have reported evidence of a “conceptual division” between male and female activity areas, the former usually associated with tool making and the latter with food preparation (Flannery and Marcus, 2005, p. 37; Flannery and Winter, 1976; Spencer, 1981). Closer to our study region, the spatial organization of gender-linked artifacts and activities has been a focus

of recent ethnographic and ethnoarchaeological research in Venezuela (Frías, 1989; Hernández Pérez, 2007).

The excavation of Floor 1 of Area A recovered a rectangular pattern of postmolds measuring about 6×4.65 m, which we interpreted as the remains of a pole-and-thatch (wattle-and-daub) house with a roofed-over area of 27.9 m^2 (Fig. 4). We assume that a house of this size would be appropriate for a nuclear family. An additional cluster of postmolds about 1 m east of the house's easternmost corner we interpret as the remains of a small annex, perhaps a storage shed. There was a 1-m-wide gap in the line of postmolds marking the house's southwestern wall that was probably the main doorway, which would have looked out upon the site's central avenue. Inside the roofed-over area, we recovered the remains of a hearth, which was situated opposite the doorway, in the southeastern half of the house.

Given the hearth's location, we hypothesize that cooking and other food preparation activities likely took place in the southeastern half of the house, a hypothesis we can test by analyzing the spatial distributions of various artifact categories. Our analyses used all the Area A proveniences whose bottom depth stopped at the Floor 1 surface; in most cases, each provenience represented the last 5 cm above the floor. A basic assumption of these analyses is that the artifacts in this relatively thin layer represent items that had had been broken and/or discarded in the course of carrying out household activities. An additional assumption is that most of these discarded artifacts remained fairly close to their discard locations, with minimal post-depositional "smearing," so that their distributions in the archaeological record can be analyzed to make reasonable inferences about the distribution of the activities that utilized those

artifacts (Schiffer, 1972; Spencer, 1981). We created a grid-density file for each artifact category and then (for all the artifact categories save one, as noted below) used the Surfer 8.0 contour-mapping program to produce the best-fitting contour map based on the input densities (Golden Software, Inc., 2002).

If food preparation activities tended to occur in the southeastern half of the house, we would expect this area to contain, among other things, ceramic vessels that reflect food preparation, such as large jars. One of the common Gaván jar forms was the tecomate (neckless jar), which was probably used as a ready container for water in food-preparation locations (see Spencer and Redmond, 2014, Fig. 4.23). The lack of a neck and the relatively large mouth of the tecomate (compared to most necked jars or ollas) would have made it easy to scoop up water with a ladle or small cup. The sherd-density contour map for tecomate rim sherds shows a single dense concentration focused on grid square N1964/E2011 (Fig. 4), just inside the doorway and not far from the hearth, providing support for our proposition that food preparation activities were concentrated in the southeastern half of the house.

Chipped stone tools were another artifact category used in food preparation, mainly to cut and process meat and plant materials (Spencer and Redmond, 2014, pp. 821–843). At B12, stone tools were mostly made of chert. We examined each chert fragment for evidence of utilization with a magnifying glass. The density-contour map of utilized chert fragments (Fig. 5) shows that the densest concentration of utilized chert lay between the doorway and the hearth, focused on grid square N1965/E2011, a pattern consistent with food preparation.

The production of chipped stone tools would have produced not only pieces suitable for utilization, but also waste material or debitage. We assume that these nonutilized fragments were usually left where they fell, in contrast to the fragments destined for utilization (which would have been taken from their production location to their use location). Accordingly, we can analyze the distribution of nonutilized fragments to detect loci of tool-making activities. The density-contour map of nonutilized chert (Fig. 6) shows the densest concentration of nonutilized chert fragments situated in the far western corner of the house, focused on grid square N1966/E2008; chert tools were evidently made here and then put to use in the southeastern half of the house. There also appears to have been a light amount of chert-working in the area of food preparation, which might reflect the sharpening and re-touching of tools that had become dull through use in food preparation.

We would expect an area of food consumption to be associated with serving vessels rather than large jars. One distinctive serving vessel at B12 was the footed bowl (Fig. 7; see also Spencer and Redmond, 2014, Figs. 4.34, 4.62–4.63). The sherd-density contour map of ceramic foot fragments (Fig. 8) shows two concentrations. A less-dense one lies just outside the roofed-over part of the house, focused on grid square N1968/E2013, which may represent discard activity behind the house. A denser concentration of foot fragments lies within the roofed-over interior of the house, focused on grid square N1968/E2011. This concentration, in the northwestern half of the house (on the opposite side from the main locus of food preparation), most likely reflects the consumption of food.

Another ceramic vessel that was probably used in food consumption was the outleaned-wall bowl, which lacked feet or other such adornments (see Spencer and Redmond, 2014, Figs. 4.18–4.19). The distribution of outleaned-wall bowl rim sherds on Floor 1 of Area A was too light to produce a useful contour-density map. We offer instead a map with shaded grid units indicating the presence of outleaned-wall bowl rims (Fig. 9). All the shaded grid squares yielded a single such sherd except N1967/E2014, which had two. It appears that outleaned-wall bowl sherds were distributed in both the southeastern and northwestern halves of the house, a different distribution from that of footed vessels. On the northwestern side some household members were evidently using footed vessels and also outleaned-wall bowls for food consumption, while on the southeastern side other members were using only outleaned-wall bowls for this purpose.

These analyses indicate that food preparation activities occurred in the southeastern half of the Area A house, supporting our original hypothesis based on the hearth's location. The artifact distributions also indicate that tool production largely took place in the northwestern half of the house. If we make the assumption that household food preparation (including final processing and cooking) was an activity performed mostly by adult females (Chagnon, 1992, p. 157; Goldman, 1963, pp. 77–84; Heinen, 1988, p. 647), while tool production was mainly carried out by adult males (Goldman, 1963: 87; Heinen, 1988: 612, Foto 5), then these results would be consistent with a division of the Area A house into two basic activity spaces linked to gender.

We note that footed vessels were concentrated in what we have identified as the male side of the Area A house, while outleaned-wall bowls occurred in both sides. An ethnographic example of gender-linked variation in the use of ceramics has been

documented for the Piapoco, of the Venezuelan Amazon territory, who produce a distinctive vessel on a pedestal for use by adult males when they consume yucuta, a special drink (Frías, 1989, pp. 86, 169, Fig. 6). Adult females, in contrast, consume yucuta in a flat-bottomed, convex-wall bowl (Frías, 1989, pp. 86, 168, Fig. 5). Both male and female yucuta vessels are decorated, but the addition of the pedestal (like the feet in the Gaván case) would appear to make the male version the more elaborate of the two. In addition to these yucuta vessels, the Piapoco produce food-consumption bowls whose use is not restricted according to gender (Frías, 1989, pp. 86, 167–168, Figs. 2–4). The situation in our Area A house at B12 was obviously not identical since we have not identified a vessel type used only by adult females. Yet, we would argue that the spatial association between tool making and ceramic feet in the northwestern part of the Area A house does indicate a connection between such footed vessels and the adult male members of that household.

We turn now to the Area D house, which also had a southeast-northwest orientation (Fig. 10). A pattern of postmolds defined a rectangular roofed-over space covering about 16.6 m², a size compatible with a nuclear family. Along the midpoint of the northeastern wall, we located a gap in the postmold pattern that we interpreted as the house's main doorway, which would have faced the site's central avenue. We did not succeed in finding evidence of a hearth associated with Floor 1 in Area D, so we cannot use hearth location, as we did for the Area A house, to hypothesize where the food preparation area might have been. But we can still analyze the distributions of the same artifact categories that we examined in the discussion of Area A, to see if there is evidence of a similar spatial segregation of household activities.

In line with our Area A results, we would expect the locus of food preparation in Area D to be differentially associated with food preparation vessels such as tecomates, as well as with chert fragments that show evidence of utilization. The density-contour map for tecomate rim sherds (Fig. 10) shows a single concentration in the southeastern half of the Area D house, focused on grid square N1975/E1892, inside and to the left as one entered the doorway. If food preparation activities were concentrated in this area, then we would expect to find similar patterning in the distribution of chert fragments that show evidence of utilization. And, it happens that the density contour map of utilized chert exhibits a notable concentration in the southeastern half of the house (Fig. 11), near the density epicenter of tecomate rims. As we saw for Area A, food preparation activities in Area D were evidently concentrated in the southeastern half of the house. At the same time, we note that the locus of food preparation would have been inside on the left as one entered the Area D house, but inside on the right as one entered the Area A house, because the Area D doorway was on that house's northeastern wall, while the Area A doorway was on that house's southwestern wall, in both cases facing the central avenue.

In view of the similar location of food preparation activities in the Area D and Area A houses, it is not surprising to observe a corresponding similarity in the loci of chert tool production. As in the Area A house, the main epicenter of the density-contour map of nonutilized chert (waste) fragments lies in the northwestern half of the Area D house, on the opposite side from the inferred locus of food production (Fig. 12). Three secondary epicenters of nonutilized chert can be seen just outside the roofed-over area on the front (or northeastern) side of the house: the first lies between the doorway and the northwestern corner of the house, while two other concentrations lies farther from the

house's doorway. If we focus on the interior of the Area D house, it seems clear that tool production and food preparation activities were spatially segregated here, as they were in the Area A house, with tool production mostly taking place in the northwestern half and food preparation in the southeastern half of the house. This pattern is consistent with the idea that the Area D house was also divided into separate activity areas linked to gender.

Does Area D show evidence of a spatial association between footed vessels and chert tool production, as we found in Area A? The density contour map for ceramic foot fragments (Fig. 13) from Area D reveals one concentration inside the roofed-over area and two outside. The area of high density inside the house is located southeast of the centerline, near the density epicenters of tecomates (Fig. 10) and utilized chert (Fig. 11). Notably, the association between footed vessels and food preparation artifacts in Area D is different from the pattern observed in the Area A house.

Let us now consider the distribution of outleaned-wall bowls across Floor 1 of Area D. The sherd-density contour map for outleaned-wall bowl rim sherds (Fig. 14) shows two epicenters inside the Area D house: one lies in the southeastern half of the house, focused on N1975/E1891; the other is in the northwestern half of the house, focused on N1976/E1890. A third epicenter lies outside the house, about 2 m northwest of the house's northwestern corner, focused on N1978–1979/E1887–1888, an area where other artifacts were also concentrated and which may represent a midden deposit. The interior distribution, in contrast, probably reflects two loci of outleaned-wall bowl use. The locus to the southeast is associated with food preparation artifacts such as tecomates and utilized chert. The locus to the northwest is associated with stone tool production (evidenced by nonutilized chert). Assuming that food preparation was mostly a female

task and household tool production largely a male task, it appears that some outleaned-wall bowls were used, along with footed vessels, by the adult female of the Area D house for food consumption near the locus of food preparation in the southeastern half of the house; other outleaned-wall bowls were used for food consumption in the northwestern part of the house by the adult male, who also worked stone tools in that location.

In both Area A and Area D, the results of the distributional analyses were consistent with the hypothesis of gender-linked polarity-complementarity (GLPC). At the same time, our analyses revealed an intriguing difference between the two houses. In Area A, footed serving vessels were associated with what we have identified as the male side of the house, while in Area D they were associated with the female side. Let us try to account for this difference by expanding our perspective to the level of the community as a whole.

4. Dual organization on the community level

One of the striking features of B12 is the bilateral layout of the house mounds, arranged into two parallel lines and separated by a central avenue; as already noted, the Area A and Area D houses were located on opposite sides of this avenue (Fig. 3). We suggest that this bilateral arrangement could be a manifestation of spatially-discrete exogamous moieties, a situation analogous to that described ethnographically by Albisetti (1953) and Nimuendajú (1939, p. 21, 1942, p. 16, 1946, p. 79). In addition, we note that the dual alignment of house mounds is reminiscent of ethnohistoric descriptions of settlements built by the Caquetío, a cultural designation comprising a large number of

politically-independent chiefdoms that inhabited this part of Venezuela during the 16th century. Federmann (1958, p. 109) described Caquetío towns as being 0.8 km in length and one or two avenues in width, not unlike the layout we see at B12. Although we lack ethnohistoric information about moieties or post-marital residence rules for the Caquetío, we note that Chagnon (1968, pp. 54–63) reported virilocal exogamy in the case of the Yānomamö of the Venezuelan Amazon territory. Drawing upon these lines of ethnographic and ethnohistoric data, we propose a hypothesis of exogamous moieties with virilocal residence (EMVR), to be tested with our archaeological data from El Gaván (B12).

Before we proceed with such a test, however, we need to make four assumptions about how such a system of exogamous moieties could have operated at B12, and how footed serving vessels might have figured in that dynamic:

Assumption 1: people born in the Area A and Area D houses belonged to two different exogamous moieties that occupied opposite sides of the avenue; let us call them Moiety A and Moiety D.

Assumption 2: the use of footed serving vessels was restricted to adults (both male and female) who had been born in Moiety A.

Assumption 3: unmarried adult males and unmarried adult females (born in Moiety A) would have had access to footed vessels on those occasions when they consumed food in the company of their fathers (also born in Moiety A).

Assumption 4: an adult female born in the Area A moiety would have been given one or more footed vessels as part of her dowry when she married and moved into her spouse's household in Moiety D, in line with the rules of virilocal exogamy; a Moiety A

male, after marriage to a Moiety D female, would have set up a new household on the Moiety A side or continued to live with his spouse in his natal (Moiety A) home.

These four assumptions, taken together, would account for the artifact distributions observed in our spatial analysis of the Area A and Area D houses. In the Moiety A households, footed vessels would be associated with married males (but not their female spouses, whose birth moiety would have been Moiety D). In the Moiety D households, footed vessels would be associated with married females (whose birth moiety was Moiety A), but they would not be associated with their male spouses, whose birth moiety would have been Moiety D.

Now let us test the EMVR hypothesis by examining if it is consistent with community-level excavation data. If the two lines of house mounds reflect exogamous moieties with virilocal post-marital residence, then we would expect to find relatively more footed vessels overall in the households of Moiety A than in those of Moiety D. There are two reasons for this expectation. First, if all adults who had been born in Moiety A were entitled to consume food with footed serving vessels, then all the married adult males, all the still-unmarried adult males, and still-unmarried adult females resident in Moiety A would have been so entitled. In Moiety D, by contrast, only the married adult females (whose birth moiety was Moiety A) would have been so entitled; the overall effect would have been relatively more adults using footed vessels in the Moiety A households. The second reason for this expectation is linked to the idea that virilocality tends to promote residential proximity and consequent bonding among biologically-related males, which can have important adaptive value in contexts with frequent warfare (Chagnon, 1988). Elsewhere, we have presented evidence of recurring episodes of

warfare associated with the Gaván polity (Spencer, 2013; Spencer and Redmond, 2014, pp. 263–265, 349–352, 773–775). We might expect such male bonding to have included frequent get-togethers and interaction among related men—no doubt involving food, the consumption of which would have required appropriate serving ware like the footed vessels. We shall test the EMVR hypothesis in two ways.

First, under the EMVR hypothesis we would expect to find a higher relative frequency of footed serving vessels in a given house of Moiety A than in a house of Moiety D. Looking only at our Area A and Area D excavations, if we compute the percentage of ceramic diagnostics (all sherds except undecorated body sherds) made up of sherds from footed vessels, we find that this percentage is 25% for the Area A house floor deposits, compared to 8.59% for the Area D floor deposits, consistent with the EMVR hypothesis.

Second, under the EMVR hypothesis we would expect to find a higher percentage of footed vessels throughout the households of the Moiety A side, an expectation we can test with data from our test-pit program (Fig. 3; Spencer and Redmond, 2014, pp. 188–267). If we compare the distribution of this percentage between the 17 pits on the northeast (or Moiety A) side of the central avenue and the 14 pits on the southwest (or Moiety D) side, the results are as follows. For the Moiety A side, the median of the percentage of footed-vessel sherds is 9.5%. For the Moiety D side, the median is 5.8%. We can use the SYSTAT 11 software package (SYSTAT Software, Inc., 2004) to conduct a (nonparametric) Kruskal-Wallis One-Way Analysis of Variance to test the null hypothesis that there is no difference between the two sides (Moiety A vs. Moiety D) in terms of the percentage of footed-vessel sherds. The resulting Mann-Whitney U test

statistic is 171.00, with an associated probability of 0.039 based on a Chi-square approximation of 4.261 with $df = 1$. This indicates a low (<5%) probability of no difference between the samples, giving support to the alternative hypothesis that there is in fact a significant difference between the Moiety A side and the Moiety D side in the percentage of footed-vessel sherds (which as noted is higher on the Moiety A side). In short, this analysis of test pit samples, like the one comparing the Area A and Area D houses, is consistent with the EMVR hypothesis.

5. Social inequality at El Gaván (B12)

In view of these results, we might ask why the adults who were born in Moiety D were evidently not using any special dish analogous to the footed serving vessels used by the adults born in Moiety A. One possible answer is that there was a difference in social status between Moiety A and Moiety D. We noted earlier that our data on the El Gaván regional settlement hierarchy during the Late Gaván phase are consistent with a politically-centralized chiefdom. It has been argued that one key feature of chiefdoms in general is a principle of institutionalized social inequality, which serves to legitimize and reinforce the centralized chiefly administration (Johnson, 1982). The persistence of a chiefdom over time is facilitated by such inequality, which to be optimally effective as a legitimizing principle ought to be manifested throughout the society (Spencer, 1987). Applying this line of thinking to B12, we hypothesize that Moiety A was of higher social status than Moiety D.

Our investigations of the Area A house (in Moiety A) and the Area D house (in Moiety D) did provide evidence of social differentiation. The Area A house mound reached 1 m in height, while the Area D house mound was just 55 cm high. The postmold pattern in Floor 1 of Area A represented a roofed-over area of 27.9 m², whereas the postmold pattern in Floor 1 of Area D represented a roofed-over area of 16.6 m². Based on these differences in mound height and house size, we would infer that the occupants of the Area A house were of higher social status than those of the Area D house, an inference we can test with artifact data. An artifact category that would likely reflect social status differences at B12 is the relative frequency of chert used in the production of stone tools. Although there were several different kinds of raw materials used for making chipped stone tools, the material that was most often used and best suited to this purpose was chert, the natural source of which was not local to B12 but quite distant: the La Quinta Formation in the high Venezuelan Andes (Sifontes and Schubert, 2014). If we compute the chert/diagnostics ratio (the ratio of chert fragments to total diagnostic sherds) for each house, we would expect this ratio to vary according to social status differences, if such indeed existed. The Area A house floor deposits (taken together) yield a chert/diagnostics ratio of 1.02, which is 3.6 times the value for the Area D house floor deposits (0.28), indicating much greater access to the imported chert by the Area A household.

A parallel difference can be seen if we compare the test pits on the northeast (Moiety A) side of the central avenue to those on the southwest (Moiety D) side. For the Moiety A side, the median of the chert/diagnostics ratio is 0.44. For the Moiety D side, the median of this ratio is just 0.22. We can use a Kruskal-Wallis One-Way Analysis of

Variance to test the null hypothesis that there is no difference in the chert/diagnostics ratio between the test pit samples from the two sides (Moiety A vs. Moiety D). The resulting Mann-Whitney U test statistic is 178.00, with an associated probability of 0.019 based on a Chi-square approximation of 5.497 with $df = 1$, indicating a very low probability of no difference. This gives support to the alternative hypothesis that there is a significant difference between Moiety A and Moiety D in the chert/diagnostics ratio (which is higher on the Moiety A side). The results of this analysis, and the one comparing the Area A and Area D houses, support the hypothesis that Moiety A was of higher social status than Moiety D at B12, consistent with our overall interpretation of the Late Gaván polity as a chiefdom with institutionalized social inequality.

Now let us adopt a more diachronic perspective and ask whether the Late Gaván pattern of unequal or ranked moieties also obtained during the preceding Early Gaván phase. As we have noted, Early Gaván occupation was recorded at three sites, B12 (5 ha), B97 (3 ha), and B21 (3 ha); at none of them did we find evidence of earthworks dating to the Early Gaván phase. We have argued that the modest site-size differential among the three villages could reflect the faction-building activities of aspiring leaders at B12—perhaps an expression of achieved leadership or what Redmond (1998) has called a “chieftaincy,” which she sees as an evolutionary precursor of the chiefdom (Spencer and Redmond, 2014, p. 775). To assess whether the Early Gaván phase at B12 was characterized by unequal moieties like the Late Gaván phase, we can draw upon the data from six test pits that contain evidence of both Early and Late Gaván occupation. Three of these test pits (T.17, T.18, and T.27) were located on the southwest (SW) side of the central avenue (Fig. 3), the sector called Moiety D in our analysis of the Late Gaván

occupation. The other three pits (T.170, T.171, and T.173, the last being the original test pit that was expanded to produce Area A) were located on the northeast (NE) side of the avenue (Fig. 3), the sector called Moiety A in our Late Gaván analysis.

First, we calculate the ratio between ceramic foot fragments and total ceramic diagnostics for the following test-pit samples: (1) Early Gaván, SW sector; (2) Early Gaván, NE sector; (3) Late Gaván, SW sector; and (4) Late Gaván, NE sector. Then we plot the values recorded for each sample, along with the sample mean (Fig. 15). For both the Early Gaván and Late Gaván phases, the differences between the two sectors are similar, with the three NE sector pits showing somewhat higher relative frequencies of ceramic feet than the three SW sector pits, much like what we found in our analysis of the 17 Moiety A (NE) pits and the 14 Moiety D (SW) pits for the Late Gaván occupation. These results would be consistent with a pattern of virilocal exogamous moieties (i.e., the EMVR hypothesis) during both Early Gaván and Late Gaván times at B12.

Next, let us examine whether there was a status difference between the two Early Gaván moieties, as was observed for the Late Gaván phase, using the ratio of imported chert fragments to total diagnostics. The distribution of this ratio for each sample, along with the sample mean, is plotted for: (1) Early Gaván, SW sector; (2) Early Gaván, NE sector; (3) Late Gaván, SW sector; and (4) Late Gaván, NE sector (Fig. 16). There is little difference in the relative frequency of imported chert between the SW and NE sectors for the Early Gaván proveniences. However, the Late Gaván proveniences show a different pattern; the NE-sector pits tend to have higher relative frequencies of imported chert than the SW-sector pits for the Late Gaván proveniences. This result is similar to that found in our larger-scale analysis of the 17 NE (Moiety A) pits and the 14 SW (Moiety D) pits of

the Late Gaván occupation at B12. A reasonable conclusion is that the earlier pattern of exogamous moieties of roughly equal status underwent a transformation, resulting in the exogamous moieties of unequal status that characterized the Late Gaván phase. This change in social organization, we suggest, was part of the process of chiefdom formation, which occurred in our study region between Early Gaván and Late Gaván times (Spencer and Redmond, 2014).

6. Conclusion

We see this paper not as conclusive, but as exploratory and heuristic, an invitation to others to experiment with similar approaches in their own research areas. What we have done is use archaeological data from the Late Gaván phase (AD 550-1000) occupation at the El Gaván site (B12) to test two hypotheses about dual organization that were derived from the ethnographic literature of lowland South America: (1) the hypothesis of gender-linked polarity-complementarity (GLPC); and (2) the hypothesis of exogamous moieties with virilocal residence (EMVR). A spatial analysis of artifact distributions on the floors of two houses, both of a size compatible with a nuclear family, revealed that both houses were divided into two complementary activity areas (food preparation vs. tool production) that could be associated with the adult females and adult males of the households, respectively, consistent with the GLPC hypothesis. However, we did note a significant difference between the two houses: in the Area A house, sherds from a special footed vessel were associated with the male side of house; in the Area D house, sherds from the same type of footed vessel were associated with the female side.

To explore this difference further, we shifted our analytical perspective to the community level. We noted that the Area A and Area D houses were located on opposite sides of a central avenue that separated two parallel lines of house mounds. We suggested that this bilateral arrangement of house mounds might represent exogamous moieties (hypothetically, Moiety A and Moiety D), a situation perhaps similar to the community organization of certain societies described in the ethnographic literature. We proposed that the difference between the spatial distributions of footed serving vessels in the Area A and Area D houses could be accounted for by the dynamics of exogamous moieties with virilocal residence (EMVR). Consistent with this hypothesis was our finding that the Area A house contained relatively more footed-vessel sherds than the Area D house. We also tested the EMVR hypothesis by comparing artifact samples from test pits on the Moiety A side of the central avenue and pits on the Moiety D side. The results of a statistical analysis were consistent with the EMVR hypothesis: the pits on the Moiety A side had significantly higher relative frequencies of footed-vessel sherds than the pits on the Moiety D side. This pattern, along with those documented within and between the Area A and Area D houses, would be expected if footed vessels were used only by adults who had been born in Moiety A, each male of which would have used the footed vessels on his side of the house after his marriage to a female of Moiety D (who would not have used the footed vessels on her side of the Moiety A house). Meanwhile, each Moiety A female would have taken some of the footed vessels along for use after she married and went to live with her spouse in Moiety D (who would not have used the footed vessels on his side of the Moiety D house).

We then took up the question of why only the adults of Moiety A (and not those of Moiety D) evidently had access to special footed serving vessels, since other, less-elaborate serving vessels were apparently available for use by all. We noted that our regional settlement pattern data are consistent with a chiefdom form of political organization, which scholars have argued is generally associated with institutionalized (and pervasive) social inequality. Accordingly, we hypothesized that the households comprising Moiety A at B12 were collectively of higher social status than those of Moiety D. Both household-level and community-level data were consistent with this hypothesis of social inequality.

We went on to investigate whether this pattern of unequal moieties was also characteristic of the preceding Early Gaván phase (AD 300-550) occupation at B12. Although we found evidence of moiety organization during the Early Gaván phase, we did not recover evidence of inter-moiety social inequality for that early phase. Our results indicate that social inequality between moieties appeared at B12 in Late Gaván times (AD 550-1000). In closing, we propose that an underlying symmetric dualism was probably part of the organizational legacy of the pre-chiefdom society of the Early Gaván phase, but was transformed after A.D. 550 into an asymmetric dual organization based on social inequality, as a consequence of chiefdom formation in the Late Gaván phase.

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Figure Captions

Fig. 1. Western Venezuela, showing the location of our study region in the state of Barinas, along with other key archaeological sites and the contemporary cities of Barinas and Guanare.

Fig. 2. Settlements of the Late Gaván phase (AD 550-1000).

Fig. 3. Map of El Gaván (B12), showing the major mounds, earthen causeways, the circumscribing earthwork, the smaller house mounds, the areas of horizontal block excavations (marked with capital letters), and the numbered test pits.

Fig. 4. Density-contour map of tecomate rim sherds on Floor 1, Area A; contour interval = 0.5; minimum value = 1; maximum value = 6.

Fig. 5. Density-contour map of utilized chert fragments on Floor 1, Area A; contour interval = 0.5; minimum value = 1; maximum value = 7.

Fig. 6. Density-contour map of nonutilized chert fragments on Floor 1, Area A; contour interval = 0.5; minimum value = 1; maximum value = 7.

Fig. 7. Artist's reconstruction of Late Gaván phase footed bowl, extrapolating from a typical ceramic foot fragment (Spencer and Redmond, 2014, Fig. 4.62, G-147).

Fig. 8. Density-contour map of ceramic foot fragments on Floor 1, Area A; contour interval = 0.5; minimum value = 1; maximum value = 4.

Fig. 9. Distribution of outleaned-wall bowl rim sherds on Floor 1, Area A; presence indicated by shaded grid squares.

Fig. 10. Density-contour map of tecomate rim sherds on Floor 1 of Area D; contour interval = 0.4; minimum value = 1; maximum value = 2.

Fig. 11. Density-contour map of utilized chert fragments on Floor 1 of Area D; contour interval = 1; minimum value = 1; maximum value = 7.

Fig. 12. Density-contour map of nonutilized chert fragments on Floor 1 of Area D; contour interval = 0.5; minimum value = 1; maximum value = 6.

Fig. 13. Density-contour map of ceramic foot fragments on Floor 1 of Area D; contour interval = 0.5; minimum value = 1; maximum value = 6.

Fig. 14. Density-contour map of outleaned-wall bowl rim sherds on Floor 1 of Area D; contour interval = 1; minimum value = 1; maximum value = 11.

Fig. 15. Sample distributions of the ratio of ceramic foot fragments to total ceramic diagnostics; horizontal bars indicate sample averages.

Fig. 16. Sample distributions of the ratio of chert fragments to total ceramic diagnostics: horizontal bars indicate sample averages.

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