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The Other Invisible Sex

Division of Labor and Domestic Space in the Mongolian Taiga

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Of the huge number of factors that condition variation in human behavior through space and time, *gender* is both incredibly important and difficult to study archaeologically. Gender describes socially constructed roles conditioned by sex distinctions (P. Walker and Cook 1998). We know that in most societies sex conditions the way an individual will spend time and the kinds of things one does (R. Bird 1999; Hawkes 1996; R. Kelly 2013; Murdock 1937; Murdock and Provost 1973; Waguespack 2005). The genders and activities of past peoples, therefore, should have affected the content and structure of the archaeological record.

The archaeological study of gender is also relevant to evolutionary questions operating on deeper time scales. The basic division of labor in foraging seen in hunter-gatherer populations in combination with monogamy, family social structure, and food sharing—especially male provisioning of offspring—are traits that are not shared by our closest living primate relatives (Hawkes 1996), and it has yet to be determined when, how, where, and why this uniquely human way of making a living arose in the hominin clade. Yet, with rare exceptions (e.g., Guthrie 2005; Mackie 2015; Sanders 2015; Snow 2006), the genders of material residues in the archaeological record remain problematic to ascertain. The difficulty of studying gender in prehistory impedes our ability to study variation in the gendered division of labor as well as its evolution.

In this chapter, we seek to make a contribution to archaeological gender studies with an emphasis on nomadic peoples by exploring differences in the way males and females use domestic spaces in an ethnographic context and to what extent those differences should be archaeologically visible. Even if the archaeological residues left behind by nomadic foragers and pastoralists are more ephemeral, the same questions pertain. And of course, with respect to the question of the evolution of human systems of labor division, those evolutionary origins happened within nomadic contexts. We would argue that hearth-centered activity areas from nomadic campsites (e.g., Gingerich this volume; Morgan this volume) provide one largely unexplored realm for investigating gender roles in prehistory.

As a point of departure and an organizing framework, we turn to two somewhat opposing perspectives on gender and archaeological visibility, in particular the visibility of the products of female labor. From one perspective, the archaeological record is inherently biased against the discovery of the fruits of women's labor because whether such fruits are the things women make, use, or gather they are most commonly made of organic materials that rarely survive

the ravages of the decay process (Adovasio et al. 2007; Adovasio et al. 2014). Waguespack (2005) has referred to this idea as the "Incredible Shrinking Prehistoric Woman." But a very different perspective comes from the work of Joan Gero, who argues with specific reference to household archaeology,

> [W]omen were especially visible and active in household contexts where they played significant roles in household production and household management (H. Moore 1988:32). Almost ironically, women can be expected to be most visible and active precisely in the contexts that archaeologists are most likely to excavate: on house floors, at base camps, and in village sites where women would congregate to carry out their work. (Gero 1991:169)

While it may be somewhat unfair to place these works in opposition, because no doubt these authors would find many areas of agreement, the general point is that they represent two very different perspectives on the archaeological visibility of female labor. In the former, women are invisible or at least the less visible segment of society when viewed through an archaeological lens; in the latter, they are expected to be the most visible part of the record in the places archaeologists are most likely to excavate.

Until gender can be deduced from material remains in the past, hypotheses concerning gender roles in prehistory will remain difficult to test. Thus, two questions are central to our study. First, should we expect there to be gendered spaces in the archaeological record? The phrase "gendered space" means a space that is predominantly, though not necessarily exclusively, used by individuals of one sex. Second, if gendered spaces are expected, should they be visible in the archaeological record?

Our analysis hinges on two simple premises—one ethnographic and the other archaeological. First, gendering as a human behavior fundamentally predicts systematic associations between sex and space, particularly when those associations are not explicable in terms of wrought biology. For a given geographic space, we might observe that males and females use it equally, in which case we would conclude that those spaces are not gendered. Or we might observe that females use a particular space slightly more than males, in which case we would conclude that the space is slightly gendered. If we observe that females use a particular space with much greater frequency than males, we might conclude that the space is strongly gendered. Archaeologically, it is extremely rare to observe females or males in particular spaces, with burials being the ultimate exception. But to the extent that activities tend to be sex biased, and those activities generate archaeologically durable materials, it may be possible to link space and sex to arrive at conclusions about gendered spaces in the deep past.

Our archaeological premise, then, is that gendering as a human behavior fundamentally predicts systematic associations between sex and cultural materials, particularly when those associations are not explicable in terms of biology. Taking the spatial and material premises together, we arrive at the hypothesis that gendered use of space ought to be archaeologically evident as spatially biased distributions of archaeological materials. Our goal is to examine this hypothesis in an ethnographic context where the gendering of space and activities are known, and we are able to evaluate the extent to which gendered space manifests in the spatial structure of archaeological materials.

Given that we are ultimately interested in the evolution of gendered behavior over long timescales, ideal case studies would include small-scale, nomadic, forager societies. Unfortunately, much of the work examining gender in household archaeology has focused on sedentary populations with agricultural economies where a number of cultural and historical factors could conceivably convolute our sex-space relationships (e.g., Allison 2007; Brumfiel and Robin 2008; Hegmon et al. 2000; Roth 2010). We therefore explore these questions by examining the relationship between gender, use of space, and division of labor in campsites of mobile Dukha reindeer herders in Mongolia.

Dukha Reindeer Herders

The Dukha are nomadic reindeer herders who occupy portions of the Eastern Sayan Mountains north and south of the Shishged River in Khövsgöl Aimag, Mongolia (Haas et al. 2018, 2019; Inamura 2005; Kristensen 2015; O'Brien and Surovell 2017; Surovell and O'Brien 2016; Walker 2009; Wheeler 2000). This area forms an ecotone between the Mongolian steppe and the Siberian taiga. Dukha live in small camps with as few as a single household and rarely as many as eight or nine. The Dukha are ethnically Tuvan and traditionally spoke the Tuvan language, although the Darkhad dialect of the Mongolian language is spoken today. Shamanism is the traditional and most common ideology encountered in the taiga.

Dukha families move from relatively low-elevation camps at lower tree line in wintertime at 1,600–1,700 m ASL to higher elevation camps in the alpine tundra in the summer just over 2,200 m ASL. Spring and fall camps tend to occur close to upper tree line to provide access to both firewood and forage. Dukha subsistence is based on reindeer and other domestic animals (sheep, goat, cattle, and yak), store-bought goods (e.g., wheat flour and sugar), and wild plant and animal foods.

In managing reindeer, men usually tend the animals when they are out of camp, and women tend them in camp. Men are primarily, though not exclusively, responsible for pushing the animals out to pasture, keeping a watchful eye on the herds if wolves are in the area, and bringing the animals back to camp. In camp, women are responsible for milking the deer during dairy season (April through October) and managing calves in spring. Men are also primarily responsible for cutting the antlers and castrating two-year-olds in fall, although women regularly help with these tasks as well; both jobs are physically challenging and often require "all hands on deck." Hunting and fishing are male activities. Gathering wild plant foods is done by both sexes. In camps, the spaces we have studied exclusively, most activities are predominantly performed by women, including maintenance of the home, food preparation, fire-tending, water collection, childcare, and tending of other animals like dogs. Felling large trees for firewood is typically a male activity, although collecting other firewood and wood chopping is performed by both sexes.

Camps can generally be divided into two areas, domestic and animal-tending spaces (Figure 9.1). Domestic spaces include households and their "yards," the exterior areas just adjacent to the houses. Yard spaces, particularly those in front of the doorway, are used as workspaces in the warm season (Surovell and O'Brien 2016). Other features common in domestic spaces are woodpiles—typically one per household—and storage features in the form of cache platforms or piles. Animal-tending areas in most camps are for controlling reindeer and to a lesser extent dogs. Reindeer are kept in corrals and/or tie-down areas. In tie-down areas, they are secured to stakes, small diameter felled trees, or vegetation, including roots, stumps, trees, and sturdy bushes. Doghouses occur in some cold-season camps, and some dogs, particularly those with aggressive temperaments, are secured away from the house. Other features occur in summer camps where other kinds of livestock are tended, including corrals for goats, sheep, cattle, and yaks and hitching posts for horses. Animal-tending and domestic spaces tend to be spatially segregated, although nursery areas for calves in spring camps are adjacent to domestic spaces.

The traditional Dukha house is a conical lodge called an *ortzen ger*, meaning a home made of *ortz* (Haas et al. 2018). The term "ortz" can refer to the house itself but typically means "lodgepole." Ortzen ger are used in camps in all seasons. In low-elevation winter camps near the town of Tsagaannuur, families often live in traditional Mongolian yurts (Mongol ger) because an insulating layer of felt makes the home much more comfortable when nighttime temperatures regularly drop to −40°C. Increasingly, Dukha families are building log cabins in the sites of their traditional winter camps near town. In taiga winter camps, ortzen ger are still used.

Both Mongolian and ortzen ger share properties of spatial organization (Figure 9.2).

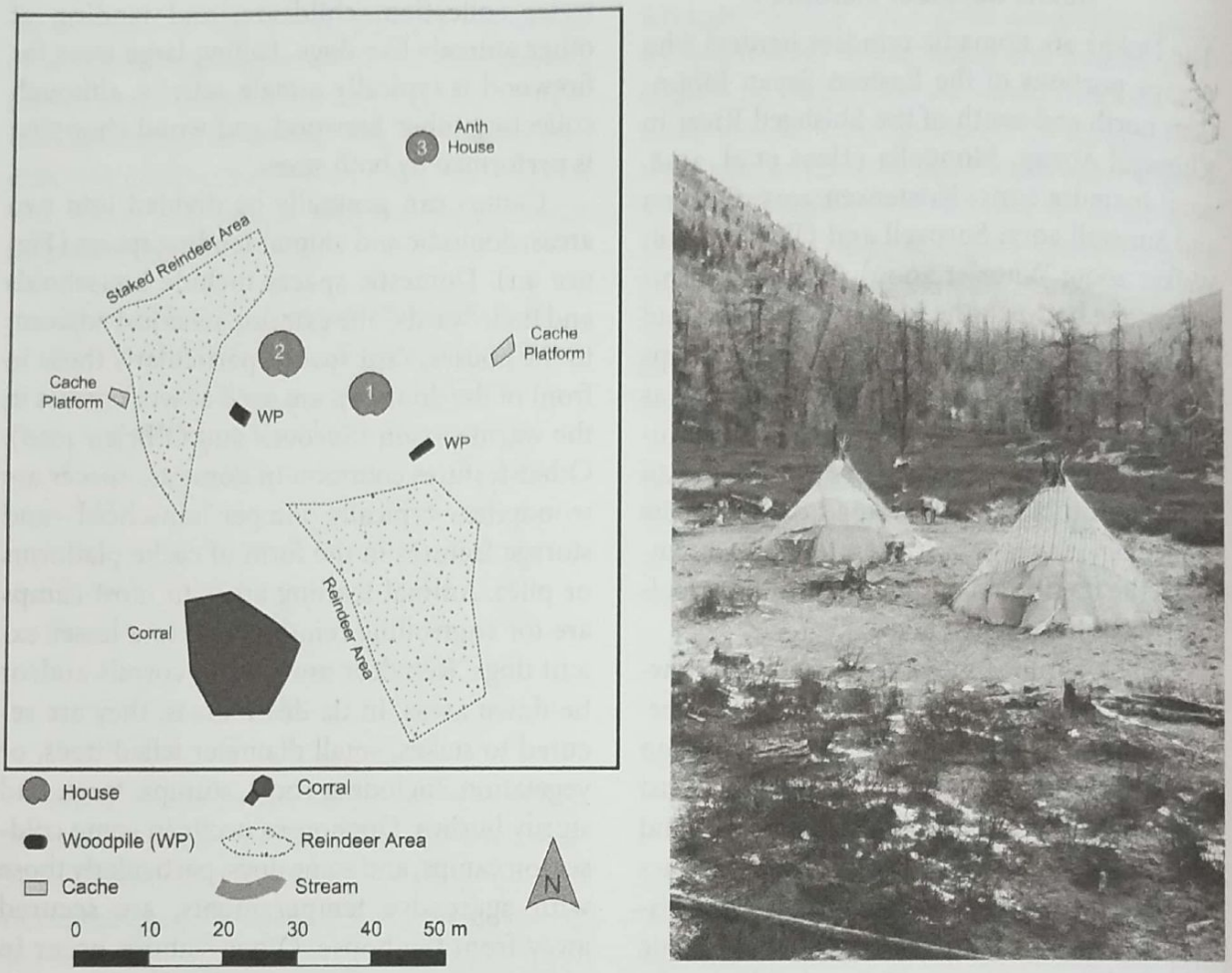


FIGURE 9.1. Plan map (*left*) and photograph (*right*) of a Dukha fall camp.

Doorways typically face south, although observed orientations vary dramatically from southeast to southwest. The kitchen occurs to the right of the door as one enters, or on the east side of the house, and it typically extends back to the east–west midline. The kitchen area usually has a small shelf for utensils, cups, seasonings, and knives. One or two cooking pots are typically kept in this area. Firewood is also kept just inside the doorway, to the west or east. An iron, sheet-metal stove sits in the center of the house. The perimeter, excluding the kitchen area, is reserved for beds and storage areas. Beds are used for both sleeping and sitting. The floor is also used as a sitting area. Most houses have floor coverings, which can be rugs, sheets of linoleum, canvas, and/or wooden planks. Opposite the doorway at the back of the house (north side), a small shrine called an *ongod* is sometimes present. If a television is present, it is typically in the same area as the ongod, most often on the northwest side of the house.

Among Mongolian nomads, including the Dukha, there is a gendered division of interior space (M. Walker 2010). The Dukha say that the eastern half of the house is the "woman's side," and the western half is the "man's side." It is not clear exactly what is meant by this classification, or the extent to which it describes how space is actually used in Dukha households, although our data allow us to answer the latter question. Another social division of house space is that the east side of the house is the family's side, and the west half is the guests' side. If the doorway of the house is deflected away from true south, all of these features are also rotated relative to the orientation of the house (Figure 9.2).

Our work with the Dukha was performed as part of the Dukha Ethnoarchaeological Project, which was organized around two questions.

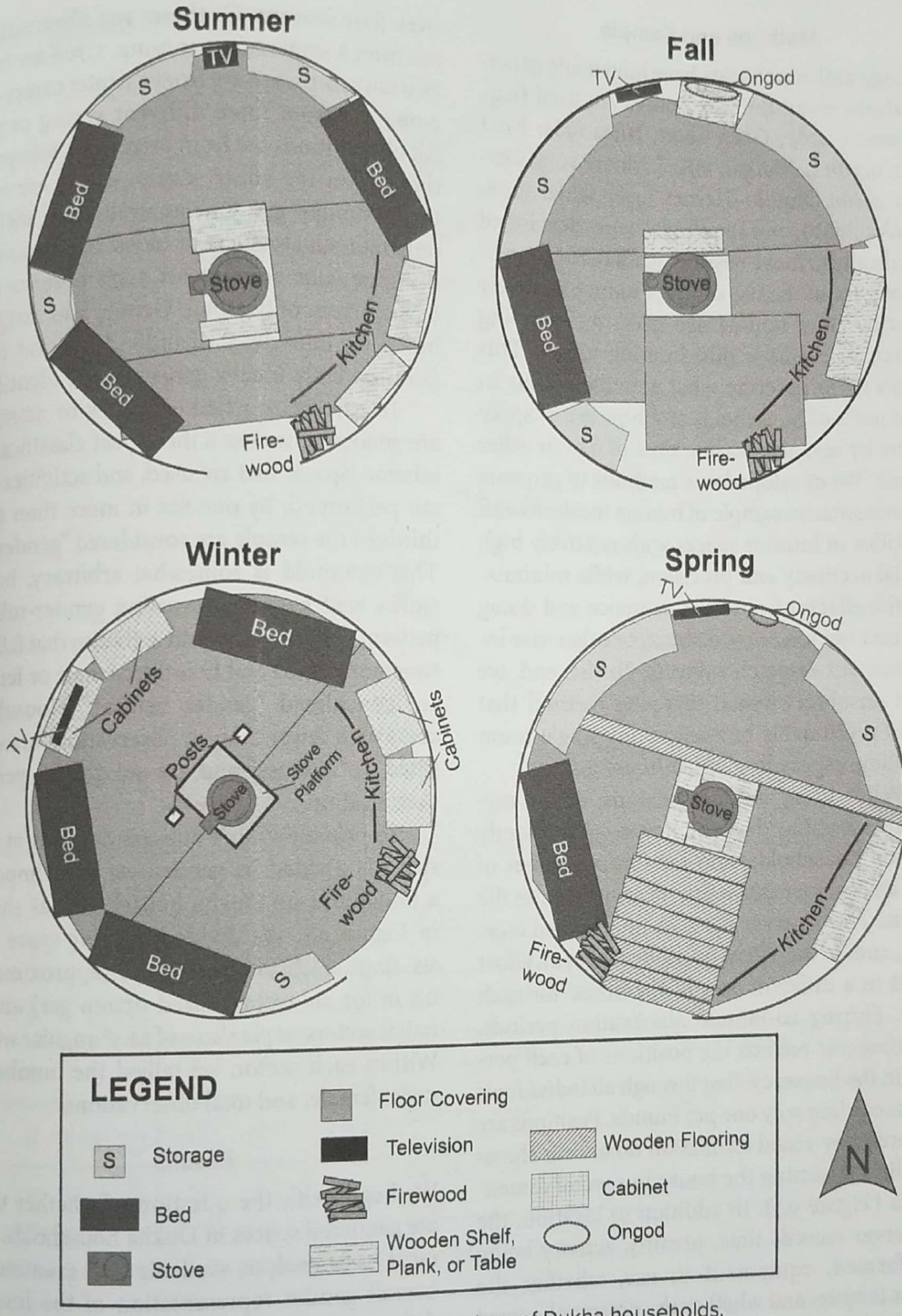


FIGURE 9.2. Examples of floorplans of Dukha households.

(1) How do people decide where to do what they do? (2) How might those spatial decisions be manifested archaeologically? Our research focused on very small scales (10^0–10^2 m^2), the scales at which archaeologists regularly excavate, because our primary intent was to develop theory and method for the study of intrasite spatial patterning. To that end, we shifted the empirical focus of our work from the mapping of features and material remains to the direct mapping of human behavior in Dukha camps and households.

Methods and Sample

Though anthropologists have long made generalizations about the way houses are used (e.g., Anderson 2007; Grøn 2006; Janes 1983; Kent 1990, 1991b; L. Morgan 1881; J. Moore 2012; Oetelaar 2000; Ohnuki-Tierney 1974; Saidel 2008; Tanaka 1980), our methods were developed specifically to move beyond qualitative generalizations about the use of space to quantitatively describe how houses are used by mapping human locations within interior spaces. This allows us to describe what activities occur in what parts of households and how use of space differs by sex, age, season, time of day, or other factors. We developed our methods to generate a representative sample of human locations and activities in interior spaces with relatively high spatial accuracy and precision, while minimizing the effects of observer presence and doing our best not to annoy, distract, or otherwise influence our research subjects. To this end, we used an observational mapping method that could presumably be used in any single-room dwelling, especially circular house forms.

While living in Dukha camps, within reasonable visiting daylight hours, at randomly chosen households, and randomized times of day, an observer asks for permission to enter the house. The observer sits in an unoccupied location, and, to the extent possible, makes an effort to sit in a different area of the house for each visit. During 20-minute observation periods, the observer records the positions of each person in the house, cycling through all individuals but recording only one per minute. Positions are recorded by visual estimation on a form showing lines bisecting the house in several dimensions (Figure 9.3). In addition to location, the observer records time, identity, activity being performed, equipment in use, whether the door is open, and whether the person observed is standing. These data also can be used to describe time allocation—at least within interior space. They also provide insight into division of labor, but again, only as it pertains to activities performed inside.

Our sample of data points includes 6,630 observations from 21 households in six camps over four seasons. Of these, 902 observations are from a single summer camp, 2,708 are from two fall camps, 956 are from a winter camp, and 2,064 are from three different spring camps. All observations are from ortzen ger, except for those from the winter camp, which are from three Mongol ger. Our analyses here include only individuals age 12 or older. In our sample, those persons account for 5,375 observations or 81 percent of the total. Gender was assigned based on interviews of individuals and their families. Only binary genders were identified.

To categorize whether spaces or activities are gendered, we use a three-part classification scheme. Spaces that are used, and activities that are performed, by one sex in more than two-thirds of the sample are considered "gendered." This threshold is somewhat arbitrary, but it works well here for revealing gender-related patterns. Those spaces and activities that fall between one-third and two-thirds male or female are considered "gender neutral." Household areas with fewer than 10 observations are classified as "low use" and are not given a gender classification.

To provide a more fine-grained look at how space is divided by gender, we superimposed a radial grid on Dukha households, as shown in Figure 9.5. We divided interior space into six rings, each of equal width (approximately 0.5 m for an average-sized ortzen ger) and 16 radial sectors or pie slices of 22.5° angular width. Within each sector, we tallied the number of male, female, and total observations.

Results

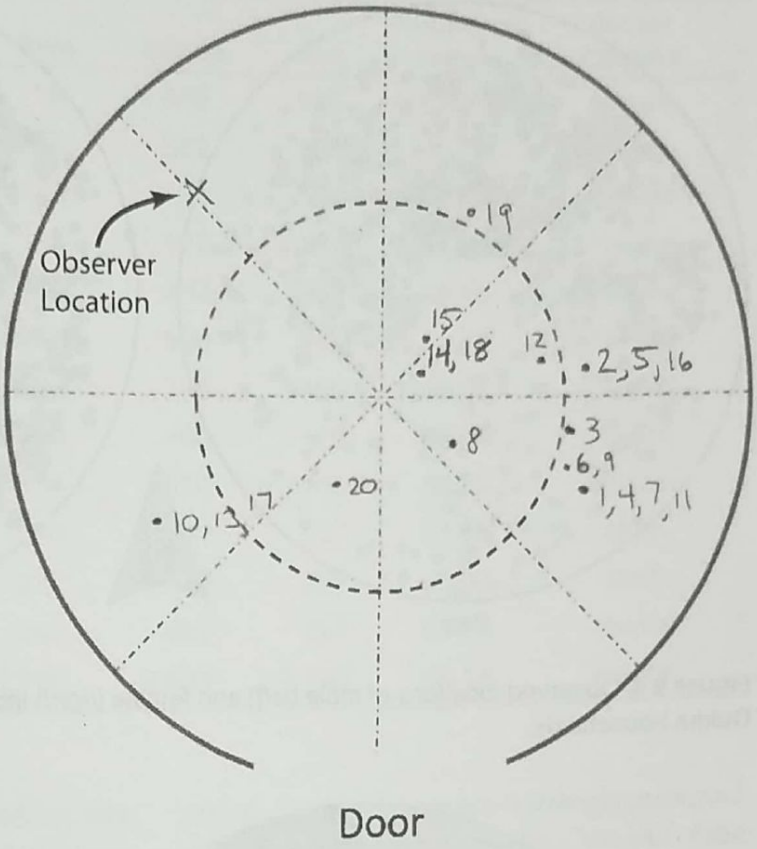
We begin with the question of whether there are gendered spaces in Dukha households. The most basic analysis available is to examine the overall gender representation of the interior data sample. Although participants in our study are very evenly split by sex, 44 males and 45 females, the interior data sample shows a very strong sex bias. Of all observations of individuals in interior spaces, 66 percent are females and 34 percent males. This split is just under our threshold to classify households in their entirety as female-gendered spaces and indicates that

Date _____

Site no. _____

Household No. _____

Initials _____



Pt No.	Time	Door Closed	Door Standing	Person	Activity	Equipment
1	12:21	☐	☐	1F3	Slicing Bread	Knife
2	12:22	☐	☐	1F1	Sitting	—
3	12:23	☐	☒	1F6	Talking to 1F3	—
4	12:24	☐	☐	1F3	Feeding 1F6	Bowl, spoon
5	12:25	☐	☐	1F1	Eating meat	Bowl
6	12:26	☐	☐	1F6	Being fed on 1F3's lap	—

FIGURE 9.3. Example of form used in the collection of interior data.

males spend considerably more time away from houses than females.

Another simple analysis is to examine the extent to which the use of space by males and females compares to the cultural model of the gendered division of interior space. The cultural model described by M. Walker (2010) is a reasonable but imperfect descriptor of how space is actually used (Figure 9.4). Males occur on both the male (west) and female (east) sides. The same is true of females. Nonetheless, the use of space by gender is highly patterned. Males preferentially use the northern sides of houses, while females preferentially use the eastern sides. Notably, there are no areas of the house that are exclusively male or female. When

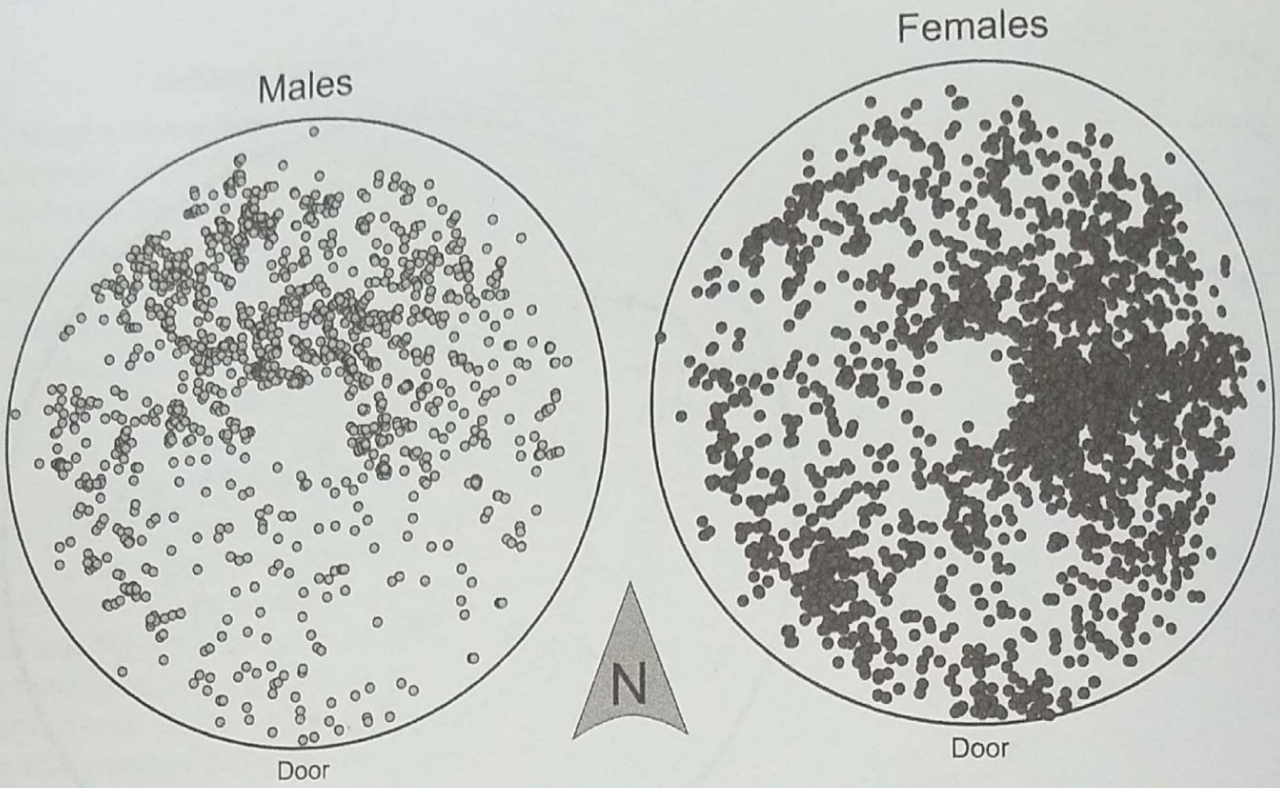


FIGURE 9.4. Observed locations of male (*left*) and female (*right*) individuals older than 12 years of age in Dukha households.

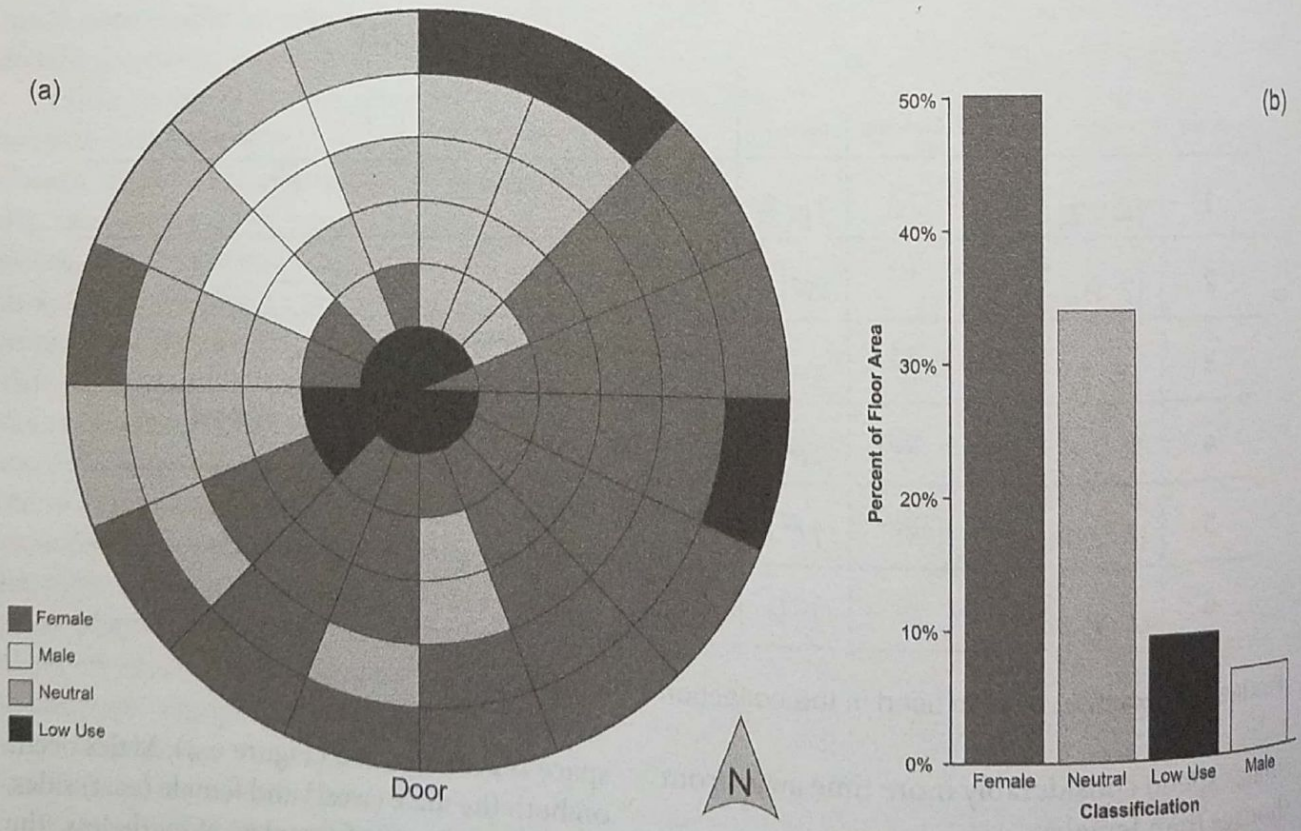


FIGURE 9.5. Division of space by gender in Dukha households mapped onto the floorplan (*a*) and as a percentage of total floor area (*b*).

TABLE 9.1. Activities performed in Dukha households by gender.

Activity	Male	Female	Sum	Percentage Female	Gender Category
Food Preparation	16	559	575	97.2%	Female
Home Maintenance	39	582	621	93.7%	Female
Animal Care	3	34	37	91.9%	Female
Fire Maintenance	12	122	134	91.0%	Female
Childcare	30	253	283	89.4%	Female
Making or Repairing Implements	234	585	819	71.4%	Female
Eating or Drinking	193	276	469	58.8%	Neutral
Socializing	70	100	170	58.8%	Neutral
Sleeping and Resting	334	366	700	52.3%	Neutral
Watching TV	370	167	537	31.1%	Male
Smoking	232	0	232	0.0%	Male
Other	262	459	721	63.7%	Neutral
Sum	1,795	3,503	5,298	66.1%	Neutral

interior space is divided down the midline into eastern and western halves, 65 percent of female observations occur on the female (eastern) side, and 59 percent of male observations occur on the male (western) side. In sum, the cultural model of space and gender captures some variability, but it is not absolute, at least in describing where men and women actually occur in Dukha households.

Shifting to the question of where particular genders tend to cluster, we examine the frequency of observations using the superimposed radial grid with the ortzen ger. When viewed this way, a large, contiguous area centered on the southeast side is largely female gendered. Within that zone, four areas, three of which are just inside the doorway, are gender neutral, and one area has fewer than ten observations. Only one small, contiguous area of the house, northwest of the hearth, is male-gendered space. The remainder of the space is classified as gender neutral or low use. Just over 50 percent of the floor area is female gendered, and 6.4 percent is male gendered. The small area occupied by the stove and a few perimeter areas show low use, and 34 percent of the floor area is gender neutral. In sum, floor space is strongly patterned by gender in Dukha households. One-half of the house by area is strongly female gendered; little of the house is predominantly used by males.

To determine which activities performed in interior spaces are gendered, we tabulated the frequency of the following categories: animal care (mostly making dog food), childcare, eating or drinking, fire maintenance, food preparation, home maintenance, making or repairing implements, sleeping or resting, smoking, socializing, and watching television (Table 9.1, Figure 9.6). Most of these activities are female gendered, including all of the nonleisure categories. Females perform more than 90 percent of food preparation, home maintenance, animal care, and fire maintenance inside households, and they account for nearly 90 percent of childcare responsibilities. Perhaps surprisingly, females account for 71.4 percent of activities involving the manufacture and repair of implements inside houses, especially in sewing, hide work, clothing repair, and the production and repair of reindeer halters. Food consumption, sleeping and resting, and socializing show a slight bias toward females, no doubt because

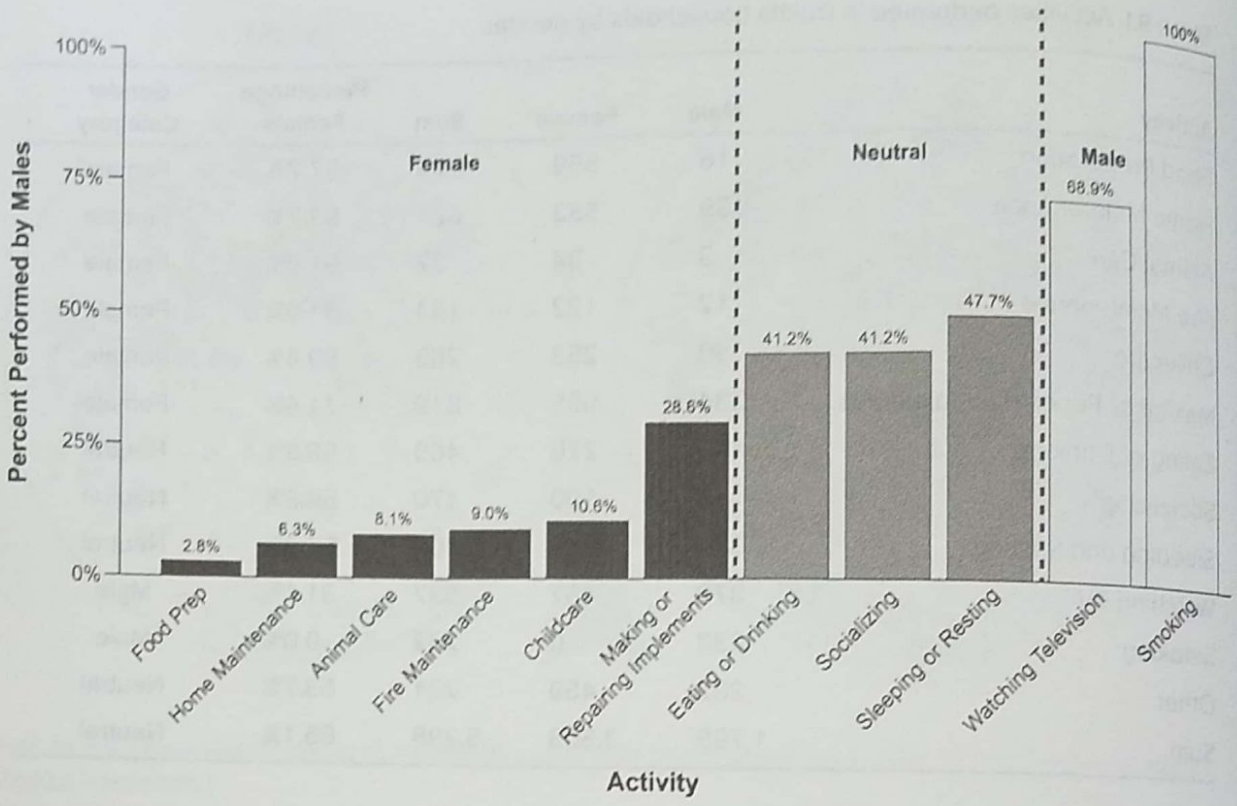


FIGURE 9.6. Percentage of common household activities in Dukha households performed by males. Shading of bars denotes the gender categorization of each activity (male, female, or gender-neutral).

females spend more time in households, but by our classification system, these activities are gender neutral. The only male-gendered activities performed in Dukha houses are smoking (100 percent male) and watching TV (68.9 percent male). When males are inside, they are engaged in leisure activities 67 percent of the time, while females are working most of the time they are indoors (76 percent of observations).

These patterns in part account for the gendered spatial divisions observed in Dukha houses, especially when seen in combination with cultural rules governing the floorplans of houses. Aside from smoking, the most strongly gendered activity in Dukha households is food preparation (97.2 percent female), which is most often performed in the space between the kitchen and the stove (Figure 9.2), close to the geometric center of the female-gendered part of the house. Similarly, fire maintenance, another strongly female-gendered activity (93.7 percent female), most often occurs between the interior firewood storage area, typically just inside the door (Figure 9.2), and the stove. Combined, these activities account for approximately 20 percent of female time allocation within households. Though fire maintenance does not consume a large amount of time because it involves mostly the brief act of feeding the fire, it is frequent. From unpublished interior temperature data collected using autonomous monitoring devices, we are able to estimate that fires are typically fed at least once an hour and most commonly every 15 to 20 minutes. If someone is inside a house preparing food or maintaining a fire, that person is most likely female, positioned in the eastern or southeastern side of the house during the day.

Having established that there are gendered spaces within Dukha households, and that they result from the interaction between labor and floorplan, we now turn to the question of whether gender-related divisions of space should be visible in the archaeological record. First, it is important to note that while domestic hearths are products of female labor among the Dukha, they would leave little archaeological trace because stoves keep the fire off the ground. In contrast, if traditional hearth features were in use, archaeological traces could be identified.

TABLE 9.2 Tool use in Dukha households by gender for tools that would have required the use of chipped stone in prehistory.

Tool Type	Male	Female	Sum	Percent Female	Gender Category
hide scraper	0	21	21	100.0%	female
scissors	9	63	72	87.5%	female
knives/cleavers	59	137	196	69.9%	female
saws	20	17	37	45.9%	neutral
axes	10	3	13	23.1%	male
drills	5	1	6	16.7%	male
chisels	5	0	5	0.0%	male
Sum	108	221	329	67.2%	Female

Many of the products of food production are likewise the products of female labor and archaeologically discoverable under certain conditions, including inedible food wastes such as bones, seeds, husks, and shells. Perhaps most important to Stone Age archaeology, however, is the question of stone tools and to what extent interior divisions of space would be reflected in stone tool assemblages.

The data show unambiguously that if stone tools were in use in this system, inside of houses, they would mostly be used by females. For interior spaces, we tabulated the use of implements that would have likely required the use of chipped stone in the past: axes, chisels, drills, hide scrapers, knives, saws, and scissors (Table 9.2; Figure 9.7). Scrapers, scissors, and knives are preferentially used by females. Saws are gender neutral. Axes, drills, and chisels appear to be used primarily by males, but sample sizes for observations of the use of these three tool types are very small. In sum, they account for only 7 percent of the tool-use sample. In the entirety of the sample, females account for 67.2 percent of observations using tools that in the past would have required chipped stone.

Discussion

Domestic spaces are preferentially used by females, something that results from male absenteeism or males spending more time outside of the house and away from camps. Within Dukha households, more than 50 percent of the floor area is female gendered, and its distribution is strongly patterned, clustering on the southeastern half of the house. Less than 10 percent of space is male gendered, clustering on the northwest side. These spatial patterns result from the interaction of the gendered division of labor in households in combination with rules dictating aspects of floorplan, most importantly the positions of the stove, door, kitchen, and woodpile. All common nonleisure activities in households are female gendered. All common leisure activities are gender neutral or male gendered. Finally, the products of female labor, whether hearth features, food residues, or stone tools, would be expected to be archaeologically visible. The extent to which these observations can be generalized beyond this ethnographic case depends on how widespread they are cross-culturally, and there is evidence to believe that most of these factors are very common in small-scale societies.

Male absenteeism in Dukha households results from men spending more time in logistical mobility. Reasons for logistic forays are varied, but most logistical mobility occurs in tending herds, a predominantly male activity. Before hunting was banned in the taiga, many forays were dedicated to the pursuit of game. Males also take more trips to town. While these factors are to some extent unique to the Dukha or perhaps common among foraging pastoralist populations, it is well known that males tend to move more than females across human societies (Cashdan and Gaulin 2016; Ecuyer-Dab and Robert 2004; MacDonald and Hewlett 1999),

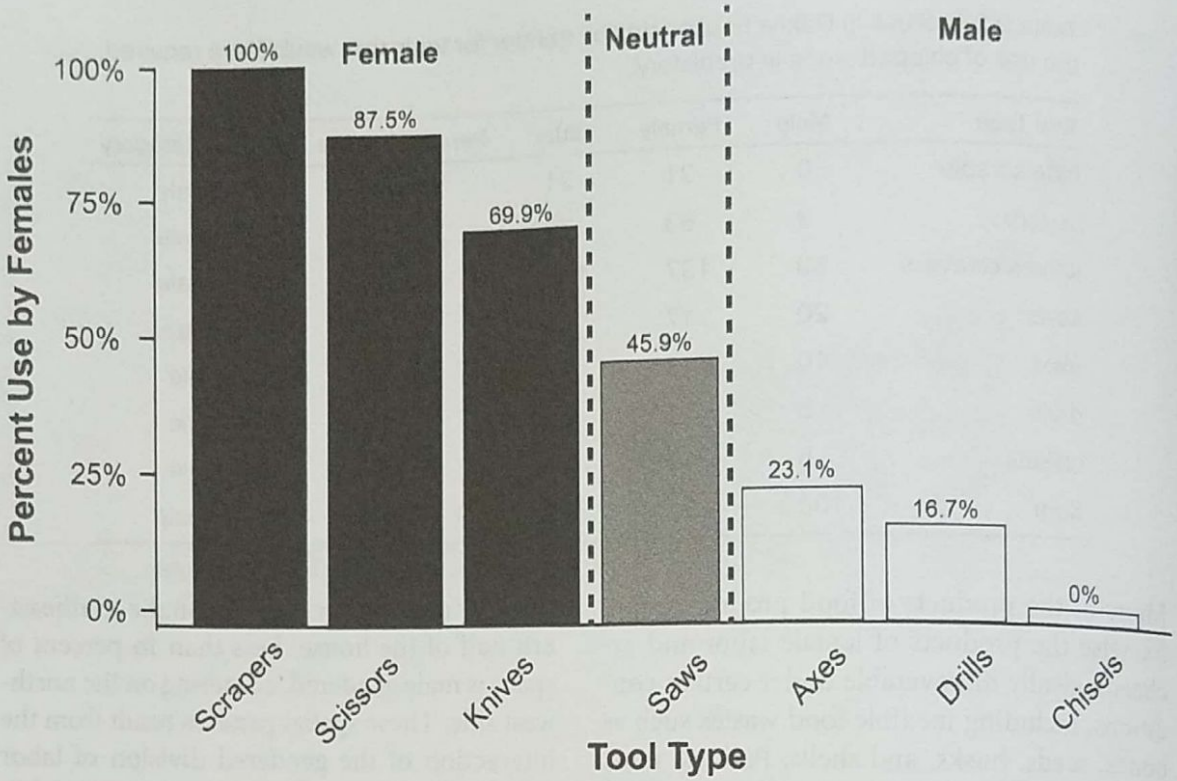


FIGURE 9.7. Percentage of tool use in Dukha households by females for tools that would have required stone in the past. Shading of bars denotes the gender categorization of each tool type (male, female, or gender-neutral).

which may result from gender differences in mate-seeking, subsistence, and/or childcare. Whatever its cause, if males move more than females, men will spend more time away from home, and domestic spaces will necessarily show a female bias.

We have identified two activities as key to structuring the gendered division of space in Dukha households: food preparation and fire maintenance. Other than smoking, of the activities performed in Dukha houses, none is more strongly gendered than food preparation. Females account for 97.2 percent of observations, a pattern mirrored in cross-cultural studies. In Murdock and Provost's (1973) study of the division of labor by sex, they find that cooking and preparation of vegetal foods are the most female-gendered activities worldwide—more so than the gathering of plant foods. Wrangham (2009) suggests that the development of the gendered division of labor—most importantly cooking by females—among early members of the genus *Homo* was critical to brain expansion and gut reduction seen in the erectines. In other words, not only is cooking predominantly a female activity, as documented cross-culturally in the ethnographic present, it likely has been so for a very long time.

Regarding fire maintenance, to our knowledge there has been no cross-cultural study focusing on the extent to which fire-tending is a gendered activity. Murdock and Provost (1973) examined fire production cross-culturally and found it slightly biased toward males in a sample of 86 societies, but fire-making is not the same as fire-tending. Interestingly, in an earlier study where Murdock (1937) combined fire-making and tending into a single category, the activity showed a female bias. In fact, he noted that "fire making…is often a masculine activity, whereas fire tending is feminine" (Murdock 1937:553). Of course, a female bias to fire maintenance is a necessary consequence of male absenteeism and a byproduct of female-dominated food preparation.

Because of consistently higher levels of

logistical mobility, male absenteeism, alongside female-gendered cooking and fire-tending, is extremely common among small-scale societies of the present and very likely the past as well. So, could we expect the Dukha gendered division of house space to be also common cross-culturally? We would argue that the answer is probably "no," for the simple reason that cultural rules governing Dukha house form and floor-plan are critical to shaping the specific ways that males and females use houses. Nonetheless, in households where there are general rules about where food preparation and firewood storage occur, we would expect to see variations on the same theme. This hypothesis could be easily tested in other ethnographic cases.

Returning to where we started, our data provide strong support for the Gero (1991) model. As she notes, domestic spaces are predominantly female spaces, for exactly the reasons that she states: women play "significant roles in household production and household management" (Gero 1991:169). In fact, we find some irony in the notion of females being characterized as the "invisible sex" archaeologically. Our data show that if any sex is expected to be "invisible," or maybe better described "less visible," it is men in household economies and household spaces. If our results could be generalized archaeologically, one possible research design might be to simply divide the archaeological record into interior and exterior spaces and proceed to analyze the division of labor by assuming that the great majority of material in domestic spaces is the fruit of female labor. We do not necessarily recommend such an approach because we have not addressed the same kinds of questions with respect to exterior camp spaces, although our data would allow us to do so. This discussion does, however, raise the question of how our findings could be used to explore questions of gender in archaeological contexts.

First, the most direct application of these findings is to the archaeology of hearth-centered activity areas, especially those in campsites and those associated with households. One concept that could be very useful is Dick Stapert's notion of the "richest" and "poorest halves" (Stapert 1989; Stapert and Street 1997). When analyzing a hearth space, the richest half is the side of hearth characterized by the highest artifact densities. The side opposite is known as the poorest half. If we are correct that the patterns we have observed among the Dukha are common cross-culturally, one would be justified in operating under the assumption that most of the artifacts on the richest side were primarily produced by females, and artifacts on the opposite side are mix gendered or male. This assumption would be strengthened if it could be determined that the richest half was also the primary locus of food preparation.

Once an assemblage is apportioned this way, one could examine aspects of technology and/or typology that could indicate gender roles. If similar patterns are found across a large sample of hearth features, increased confidence could be gained that the pattern relates to gender. Similarly, the extent to which a gendered division of labor exists in prehistoric contexts could be reflected in the extent that richest and poorest halves of hearth-area features differ, both quantitatively and qualitatively. It is also worth considering the intriguing possibility that the evolution of the human division of labor could be marked by rapid or gradual changes in the spatial organization of hearth-centered activity areas over time, presuming of course that the use of fire preceded the appearance of this system. With increasing sexual division of labor over archaeological time, increasing spatial differentiation of household materials should be evident. Finally, it is worth reiterating that these ideas would be strengthened considerably if similar studies were completed in other ethnographic contexts.

Conclusion

We began with two questions: should we expect gendered spaces to exist in the households of nomadic peoples, and if so, should they be archaeologically visible? We can answer both questions affirmatively. Dukha households are preferentially used by women, and more than 50 percent of the floor area in those spaces is female gendered. Less than 10 percent is male gendered.

The products of women's labor should be archaeologically recoverable as hearth features, food residues, and in stone tool assemblages. These patterns result from factors that should be common cross-culturally, including male absenteeism resulting from greater logistical mobility and a predominant female contribution of labor to food preparation and fire-tending. If we are correct, it should be possible to use our findings to guide studies of gender in prehistoric contexts, although this conclusion would be strengthened if our results can be replicated in other ethnographic contexts.

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