

CHAPTER TWELVE
GENDER AND STONE TOOLS:
AN ETHNOGRAPHIC STUDY OF THE
KONSO AND GAMO HIDEWORKERS
OF SOUTHERN ETHIOPIA

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Recently, women have been integrated into Paleolithic society as net hunters, fishers, setters of snares, clothes makers, and even the producers of expedient stone tools (Gero 1991; Pringle 1998; Wadley 1998). Yet, women's roles continue to be marginalized in the Stone Age, because of the enduring focus on men as the sole producers of formal stone tools. One of the most ubiquitous and widely studied formal tools in the Paleolithic record is a nonhunting implement, the scraper (Binford 1968; Bordes 1961; Dibble 1987). Explanations include differences in function, stage of use, and style with male agents. Archaeologists acknowledging women as stone tool producers tend to limit them to producing stone tools out of local resources or producing informal tools (Casey 1998; Gero 1991; Sassaman 1992, 1997). Yet, as demonstrated by this edited volume, ethnographic and ethnohistoric documentation indicates that women are often responsible for processing hides, including by scraping off the inner layer of fat. The debates over scraper morphology and spatial distributions have failed to consider differences in gender as an explanatory variable.

In this chapter, I discuss my ethnoarchaeological research among the Gamo and Konso stone-tool-using hideworkers of southern Ethiopia (figure 12.1). Through a postcolonial feminist perspective, I argue that in cross-cultural comparison women, like men, are highly skilled knappers—making formal tools and from long-distant resources. Women dominate

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the craft among the Konso, and men are the hideworkers among the Gamo. A comparison of these two cultures in terms of gender roles, learning systems, and postmartial residence patterns demonstrates that each produces unique scraper spatial distributions and morphology patterns.

The History of Ethiopian Hideworking

In the eighteenth and nineteenth centuries, the processing of wild and domesticated animal hides for armor, clothing, shoes, and household items was of considerable importance in the Ethiopian economy (Pankhurst 1964). The European traveler accounts of hideworking in northern and central Ethiopia during the mid-eighteenth to nineteenth centuries do not clarify the sex assigned the task of hideworking, rather they focus on the processes of removing hair and softening the hides (Bartlett 1934, 92; Bruce 1790; Burton 1894, 170; Combes and Tamisier 1838, 77–79; Isenberg and Krapf 1843, 255–56; Johnston 1972 [1844]; Lefebvre 1846, 240–43; Mérab 1929; Paulitschke 1888, 311; Rey 1935, 225; Wylde 1888, 289–91). For example, Parkyns (1966 [1853], 230–31) and Mérab (1929, 411) state that the hides were dried by pegging them out on the ground and softened by trampling, or “pedipulation,” with milk and linseed. Johnston (1972 [1844], 370–74) and Giglioli (1889) provides the earliest written account of stone tools being used to remove fat and hair during the hideworking process. During the 1940s, German ethnographers illustrated the material culture of the Dizi, Sidama, Gugi, and Gamo people, including their hide-scraping handle forms (Haberland 1981, 1993, 94; Straube 1963, 22 plate 13).

In the 1970s and 1980s, Gallagher (1974, 1977a, 1977b), Clark and Kurashina (1981), and Haaland (1987) conducted the first systematic but short-term studies of stone-tool production among the Gurage, Wolayta/“Sidamo,” and Oromo hideworkers. In these studies, the researchers reported the presence of exclusively male hideworkers with the same basic pattern of tool production (direct percussion with an iron billet), style (obsidian unifacial convex endscrapers), use (for six to eight hours scraping to remove fat from cattle hides hung on a vertical wood frame), resharpening (with an iron billet), and discard (in pits near the household). These studies of the hideworkers report little if any variability in the hideworking processes or the sex of the hideworker, reflecting culture-specific gender roles.

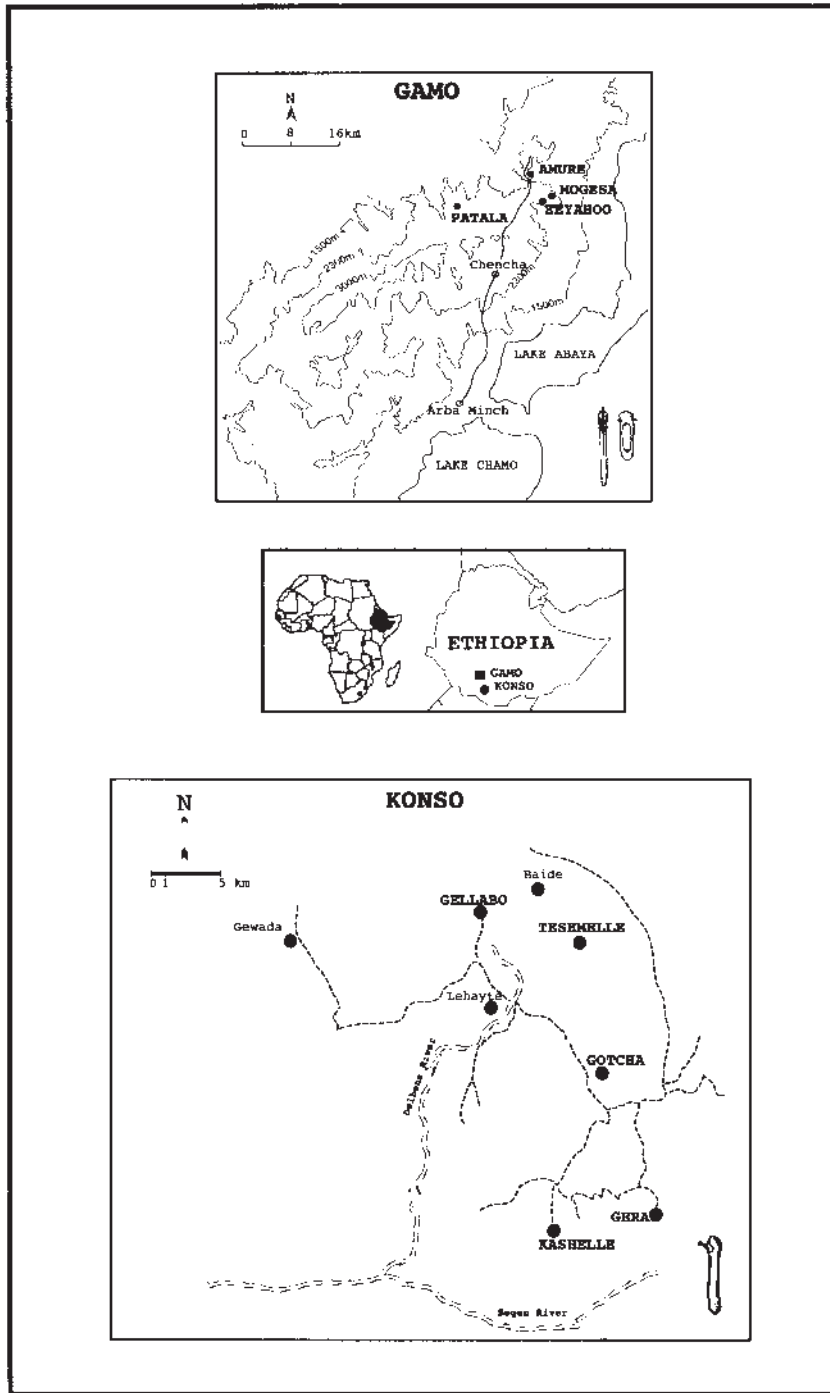


Figure 12.1. Maps illustrating the location of the Gamo and Konso villages and the handle types discussed in the text.

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During May and June of 1995, Steven Brandt's survey of southern Ethiopian hideworkers revealed diversity in stone tool and handle style, raw material type, and technology among the Gamo, Gurage, Hadiya, Konso, Sidama, and Wolayta peoples (Brandt 1996; Brandt et al. 1996; Brandt and Weedman 1997). Importantly, the project identified that among the Konso and the Wolayta, women independently manufactured and used stone tools for hideworking.

Currently, there are no published studies documenting the changes in the hideworking process and gender roles as the result of European contact and trade. However, it can be clearly documented that demand for hides as an export commodity has steadily risen over the last one hundred years. Rey (1935, 225–26) comments that in 1930, hides commanded 152,000 British pounds in exports, the third most important import after coffee and cotton. In 1959, the net worth of exported hides was 9 million U.S. dollars (Lakew 1969), in 1974–1975 it was 56 million dollars (Hailu 1980), and by 1990 it had risen to 215 million dollars (Hasen 1996b). Karsten (1972) notes that in the early 1970s there was an increased distribution of Western clothing, agricultural sacks, rope, and string in rural Ethiopia, so that the only product that was widely made from hides was the sleeping mat. Today, goat hides are brought through the rural market system to Addis Ababa, where they are tanned in industrial shops for export. Hideworkers usually are not included in the sale of hides because they do not own the hides. In addition, the reduced local demand for hide products means that hideworking skills are diminishing and in less demand today than they were thirty years ago. Currently, the following peoples are known to process hides with stone tools in central and southern Ethiopia: Amarro, Dizi, Gamo, Gugi, Gurage, Hadiya, Konso, Oromo, Oyda, Sidama, and Wolayta.

Methodology

Between 1996 and 2002, I worked either independently or with a larger research team studying hideworking in southern Ethiopia among the Gamo and Konso peoples. I lived with the Gamo hideworkers between 1996 and 1998 for my dissertation research (Weedman 2000, 2002a, 2002b). In 2001–2002, I led an international team with Co-PI Brandt to study the Konso hideworkers between May and August of each year (Brandt and Weedman 2002).

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Among the Gamo, I spent the first six months conducting an intensive survey, recording types of hide-scraping material culture, locating hideworking activities, studying the process, and recording kinship and identity. In this time and with the aid of a local assistant for translation, I interviewed 185 hideworkers, collecting information on approximately twelve hundred living and deceased hideworkers from 115 villages. Thirty percent of Gamo hideworkers use stone, while the remaining use glass and/or iron. For the remaining eighteen months, I occasionally enlisted the aid of a local translator while I studied thirty hideworkers living in four different villages. I spent several months in each village observing the hideworking practices, measuring tools, and mapping households and activity areas.

Among the Konso, our goal was to take a multidirectional approach to lithic studies by using ethnography, oral history, cinematography, ethnoarchaeology, and archaeology to examine potential sources of stone-tool variation. We divided into seven different teams, and all teams relied on the help of local assistants and national government representatives for translation throughout the project. Among the Konso, there are approximately 112 hideworkers (87 women and 25 men) using iron, glass, and stone. Today there are only nineteen hideworkers using stone, including two men and seventeen women, and they live in seven different villages.

This chapter compares the marriage and residential patterns, use of space, and scraper morphologies of the Gamo and Konso hideworkers. In particular, I focus on thirty Gamo male stone-tool-using hideworkers who live in the villages of Mogesa, Eeyahoo, Amure, and Patala, and on their 811 unused and 868 discardable scrapers. The Gamo are contrasted to the nineteen Konso stone-tool-using hideworkers living in Kashedelle, Gellabo, Teshmelle, Gotcha, and Gera villages and their 770 unused scrapers (680 made by women and 90 by men) and 363 discardable scrapers (354 made and used by women and 9 by men).

The Gamo

The Gamo are Omotic-speaking peoples living in the highlands west of the Rift Valley lakes Abaya and Chamo (figure 12.2). The Gamo territory covers twenty-four hundred kilometers,² with a population estimated at six hundred thousand (Hasen 1996a, 313–18). They are agriculturists,

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who grow primarily enset, a corn crop. Their social-economic system divides their society into occupational groups: 1) citizens (*mala*), or elected and hereditary leaders, farmers, and weavers; and 2) noncitizens (*tsoma*), including artisans such as potters (*mana/chinasha*) and hideworkers, smiths, and groundstone makers (*degala*) (Abélès 1979; Bureau 1981, 85–87; Straube 1963, 380–84). Membership in *mala*, *mana*, and *degala* is ascribed at birth, and there is no social mobility. Furthermore, the *mana* and *degala* are considered impure; hence they do not intermarry, share food or drink, or live next to or share a burial ground with the *mala* or each other. The *mana* and *degala* are not considered full members of society and do not hold any leadership positions.

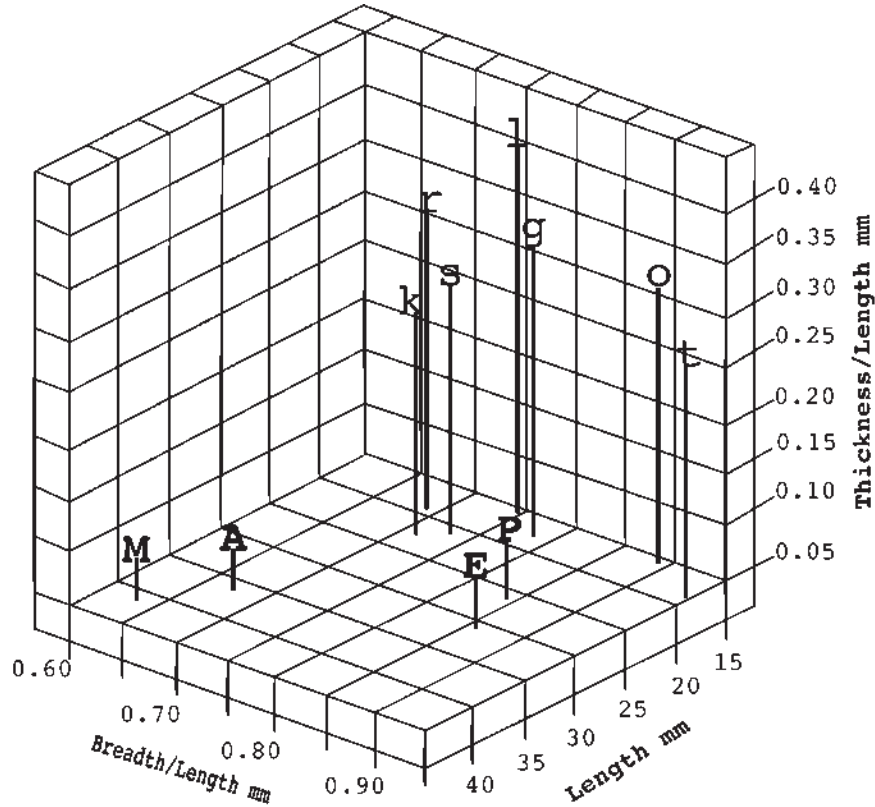
The Gamo hideworkers primarily scrape cattle hides for bedding and bags that are used in every household. Occasionally they scrape sheep hides for ritual capes and children's clothing in the south. They also produce chairs, saddles, and bridles, but they do not scrape hides to produce these items. They scrape hides on demand in return for a small amount of food.

Gamo Learning Patterns, Marriage, and Residence

Gamo hideworkers learn their craft from their fathers. Hideworkers, groundstone-makers, and smiths are usually men, and potters are usually women. Often men *manal/chinasha* help their wives with pottery procurement and distribution. Women *degala* produce bread from enset, spin cotton, and decorate gourds for sale at the markets. Women do not scrape hides, smelt iron, or produce groundstones because they are thought to lack physical strength.

The stratified social relationships in Gamo society, that is, membership in *mala*, *manal/chinasha*, or *degala*, are ascribed through patrilineal descent. Each of these groups is strictly endogamous. Furthermore, individuals, including hideworkers, cannot marry members of their own patrilineage or of their mother's (Olmstead 1974, 31–32).

Hideworkers living in one village tend to belong to one patrilineage, and state that their ancestors have lived in that particular village for all the generations. The men could recite back five to eight generations. In 93 percent ($n = 107/115$) of the Gamo villages surveyed, the hideworkers were members of a single lineage. This is exemplified by the hideworkers



GAMO VILLAGES

- P**= Patala (n=285)
- E**= Eeyahoo (n=78)
- M**= Mogesa (n=209)
- A**= Amure (n=239)

KONSO VILLAGES

- | | |
|-----------------------|-----------------------------|
| g= Gotcha (n=61) | t= Gera Titano (n=44) |
| k= Kashelle (n=89) | s= Teshmelle Tano (n=203) |
| l= Gellabo (n=192) | r= Teshmelle Kartoha (n=61) |
| o= Gera Locato (n=30) | |

Figure 12.2. Graph illustrating the unique village signatures of Gamo and Konso unused scrapers according to their length, breadth-length ratio, and thickness-length ratio.

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in the villages of Mogesa Shongalay, Amure Dembe Chileshe, and Patala Tsela (figure 12.1). Since most villages consist of a single hideworker lineage, it was rare (4.8 percent, $n = 55/115$) for men to marry women of their natal village.

Villages with two hideworker lineages were less common at 7 percent. In my survey of 588 living hideworkers, only 68 individuals, or 12 percent, had moved to another village. This includes one of the study villages, Eeyahoo. Originally, the Eeyahoo Shongalay hideworkers were from another district. Either their sister or their mother (as a second marriage) married *degala* from Shongalay. The fact that their sisters and mothers were married to men in the Shongalay *mota* (subdistrict) aided these hideworkers in obtaining their residence in Shongalay.

Hideworking skills are learned within the village context through observation and direct prompting by fathers (157/185, or 85 percent), grandfathers (2/185, or 1 percent), older brothers (2/185, or 1 percent), other relative (2/185 or 1 percent), and friends (7/185, or 4 percent; 15/185, or 8 percent, did not reveal their teacher). Hideworkers begin to learn to scrape hides at twelve or thirteen years of age. When the hideworker takes a break from scraping the hide, often his young son will try to scrape the hide himself. A young man may scrape a hide, but it is with scrapers made by his father or older brother. Fathers and sons travel to quarries together, and the young hideworkers learn, through observation, which pieces are suitable for making scrapers. Fathers often oversee the production of scrapers by their sons, provide guidance, and even aid them in shaping and resharpening the scraper. Gamo hideworkers begin to produce their own scrapers and secure their own clients when they marry. Since postmarital residence is virilocal, and sons learn hideworking from their fathers, this creates similarity, delineating discrete domestic units in each village in terms of access to resources, use of space, and scraper morphology.

Gamo Access to Resources

The Gamo primarily collect chert and occasionally trade for obsidian to use as their raw material to make scrapers. Among the Gamo stone-tool users today, hideworkers within a particular lineage have their own chert quarry that was exploited by their ancestors, which they do not share with others. They learn of the location from their fathers. Currently the hide-

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workers who collect their own chert directly from the quarry do not pay anyone for it. Three of the villages I studied in-depth are located in the Borada district and one in the Zada district. The stone quarries are located within a one- to three-hour walk from the hideworkers' homes. In Patala, the hideworkers obtain their chert from one source. While in Mogesa, Amure, and Eyahoo they procure stone from two chert sources local to each of their respective villages.

The Gamo haft their scrapers in two different handle types: the *zucano* and the *tutuma* (figure 12.1). The *zucano* handle has two hafts on opposite sides, and tree resin is used to affix the stone scraper into the opening. The *tutuma* handle has a split down the center of the piece of wood, and the stone scraper is wedged into the split and held with inset twine. Both handle types are used to scrape cattle hides. Most of the *zucano* handles and the mastic are made of wood from lowland woods, such as *Schrebrea alota oleaceae*, *Acacia brevispica*, and *Combregur combretaceae* (Bekele-Tesema et al. 1993; Hedberg and Edwards 1989, 1995). Although I was told that *tutumas* could be made out of almost any type of wood, the wood for the *tutuma* handle mostly comes from the highlands, such as *Eucalyptus* sp., and *Hagenia abyssinica* (Bekele-Tesema et al. 1993; Hedberg and Edwards 1989, 1995).

The *zucano* users and *tutuma* users live in both environments. This is especially true for *zucano* users, who live equally in highland (n = 45, or 42.5 percent) and lowland (n = 61, or 57.5 percent) environments, compared to *tutuma* users, who more often live in highland areas (highlands, n = 330, or 97.3 percent; lowlands, n = 9, or 2.7 percent). *Zucano* users living in the highland regions more frequently marry women who live in the lowland areas (n = 7/21, or 33.3 percent) compared to the number of highland *tutuma* users (n = 8/220, or 3.3 percent) who marry lowland women. This social connection allows the highland *zucano* users greater access to wood resources needed to make the handles. This relationship is demonstrated by *zucano* users living in Leesha Zada. The seven Leesha Zada individuals either married women, have a mother, or have a hideworker friend in their village who is from or has strong connections to the northern Gamo people. Three of these individuals have connections to lowland Mulato Borada, and the other four are connected to the lowland region Duma Ochollo. Hence, lineage membership and marriage patterns affect the distribution of resources in Gamo society.

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Gamo Use of Space

Since postmarital residence is virilocal, sons live near their fathers, creating patrilineally related domestic groups. Hence, in the villages of Amure, Mogesa, and Patala households cluster in terms of learning groups. Married sons live in a separate structure from their father's, although it is within the same compound and within two to three meters. The storage, use, and discard of hideworking materials, including stone, are directly associated with residence patterns. Each household cluster (consisting of a father and his sons) has a single scraping location in the father's house. When the father becomes too elderly to scrape, his sons build a scraping frame in their own houses. In the *tutuma*-using villages of Patala and Eeyahoo, lithics are discarded in the household garden. In the villages of Amure and Mogesa, *zucano*-using villages, fathers and sons share a discard location specifically for the used-up scrapers. The discard piles are usually located in thorn bushes near footpaths. Hence, in each Gamo village there are discrete hideworker residential areas and subsequently distinct use and discard areas for lithics.

Gamo Village Scraper Style

Gamo hideworkers have a strong sense of family on the village level, as they procure resources together and live together. Furthermore, fathers and brothers often help inexperienced hideworkers shape their tools (for a discussion concerning style and experience see Weedman 2002a), which results in a scraper morphology that is unique to each village (Weedman 2002b).

Zucano users produce scrapers at the quarry and store the scrapers in their household until they are needed, while the *tutuma* users bring the raw material back to their households and produce scrapers immediately before their use. To produce a scraper, the hideworkers begin by using the bottom edge of a large iron hoe or iron billet to strike at the stone raw material, usually along an edge where there is exposed chert. Once the piece is small enough to easily hold in the hand, the hideworker uses a smaller iron billet to remove flakes for potential scrapers, either at the quarry or at the household. Often the hideworker strikes lightly at the edge, preparing the platform for removal of the flake. Continued percussive flaking from

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the nodule in multiple directions removes the flakes. The hideworkers select flakes that will not break easily (i.e., are not too thin) and have little patina or cortex (which makes for a dull edge), but that they believe have an edge that is sharp (i.e., thin) enough to scrape a hide (see also Cassell, Webley, this volume). They usually select two to three flakes from a nodule as good.

Some of the hideworkers rotate the flake, shaping all edges (*zucano* users) and producing a formal tool, while others do very little shaping of the scraper (*tutuma* users), resulting in an informal tool. The scrapers are then hafted. *Tutuma* users tie enset twine around the haft to secure the scraper, and *zucano* users insert tree resin from either *acacia brevispica* or *acacia niolitica* to hold the scraper in place. The completed scraper is used to remove the inner fatty part of the cowhide. Dried hides are elevated on a wooden frame at an angle of seventy to ninety degrees. The hideworker, in either a squatting or standing position, holds the blade of the scraper against the inner fatty part of the hide and with a downward motion removes the fat from the hide. The scraper is periodically resharpened using the small iron billet, after approximately 281 scrapes ($n = 407$ resharpening events, standard deviation 248.4, minimum range 2, maximum range 1,434). The retouch and other debitage are allowed to fall on the ground or onto an old hide and then periodically swept up by the hideworkers' wives and emptied into specific lithic trash dumps or the garden. Hideworkers use the scraper until it becomes too dull and small for scraping. Usually four to five stone scrapers are used to process a single cattle. After the hide has been completely scraped, the hideworker adds butter to the hide and tramples it with his feet, "pedulation," until it is supple. No tannin is added to the hide, although in some areas the consumers will wash their hides in cattle urine, which is a known tannin.

In each village, the hideworkers had a very difficult time picking their own scrapers out from others in their village during a sorting test. Ten of the thirty hideworkers offered to pick out their own scrapers, believing they could do so because "their hands had made them," while the others were more skeptical. The sorting collection consisted of twenty to twenty-four scrapers. Only three of the hideworkers selected one of two scrapers that they had actually made. Most hideworkers declined to try to pick out their own scrapers from others in their village, and those who tried mostly were not able to identify their own, but chose others from their own village. One

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attribute that enabled hideworkers to successfully select their own village scrapers was chert color, because each village of hideworkers prefers particular colors of chert. However, since each quarry produces a variety of colors, and hideworkers do not exclusively use only one color of chert, the overall morphology of the scrapers also plays into discerning village membership. This would seem to indicate that there would be strong similarities in hideworking material culture within a village.

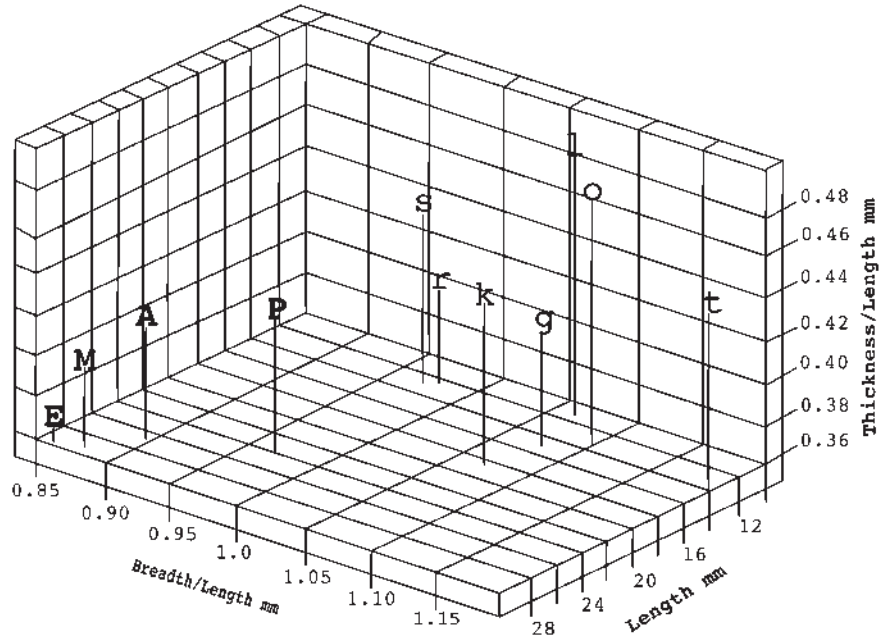
Figures 12.2 and 12.3 illustrate that when the Gamo village unused and discardable scrapers are compared in terms of their length, breadth, and thickness attributes, there are distinct differences between the four villages. T-tests at the .05 confidence level confirm that the village unused scrapers are significantly different. Eighty-seven percent ($n = 26/30$) of the length-breadth-thickness comparisons are significantly different from one another. T-tests also confirm that the used-up scrapers are significantly different based on village membership. Sixty-six percent ($n = 20/30$) of the comparisons for the used-up scrapers are significantly different from one another. These differences cannot be attributed to raw material type, as all the Gamo use cherts that erode out into riverbeds at an elevation of approximately twenty-three hundred feet and probably represent the same formation. Although not all the attribute comparisons between the villages are significantly different, most variables are, which suggests that each village has a distinct scraper morphology.

Among the Gamo, there is a distinct village pattern concerning the access to raw materials, use of space, and scraper morphology because the craft was learned in the village/lineage context and postmarital residence is virilocal. Figures 12.2 and 12.3, in addition to illustrating the unique scraper form for each of the Gamo villages, also reiterate the point made in earlier publications (Brandt et al. 1996; Brandt and Weedman 1997) that the Gamo scrapers are different from the Konso scrapers.

The Konso

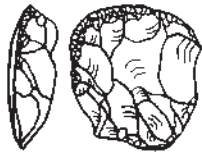
In contrast to the Omotic-speaking Gamo, the Konso are eastern Cushitic speakers living in the lowlands to the south of the Rift Valley lake Chamo (figure 12.1). The Konso territory covers 180 kilometers,² with a population estimated at 167,000 (Hasen 1996a, 313–18). They are agriculturists who grow sorghum. Their social-economic system divides their society

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GAMO VILLAGES

- P= Patala (n=205)
- E= Eeyahoo (n=174)
- M= Mogesa (n=278)
- A= Amure (n=211)



KONSO VILLAGES

- g= Gotcha (n=26)
- k= Kashedle (n=14)
- l= Gellabo (n=49)
- o= Gera Locato (n=5)
- t= Gera Titano (n=11)
- s= Teshmelle Tano (n=235)
- r= Teshmelle Kartoha (n=14)



Scrapers drawn to actual size

Figure 12.3. Graph and drawings of Gamo and Konso *discarbale* illustrating [AQ14] village scrapers according to their length, breadth-length ratio, and thickness-length ratio.

into two groups: *Ententa* and *Xauta*. Generally the *Ententa* are farmers and the *Xauta* are artisans, including hideworkers. Membership in *Ententa* and *Xauta* is ascribed at birth; however, in recent times there has been some social mobility. In the past, the Konso had a caste-like system, that is, they were similar to the Gamo described above. The *Ententa*

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would not marry *Xauta* or share living space with them and treated them as inferiors (Hallpike 1972, 139–47). Furthermore, the *Ententa* controlled important political and religious rituals, but the *Xauta* played essential roles in these ceremonies. Since land reform in 1975 and more recent changes in regional and transnational trade, *Xauta* have acquired a higher economic status, and *Ententa* rarely insult *Xauta* publicly (Ellison 2003). Today, an *Ententa* may acquire the status of *Xauta* by taking up a craft or marrying a *Xauta*, but it is still rare for *Xauta* to become *Ententa*.

The Konso hideworkers scrape cattle, goat, and sheep hides. They primarily produce bags, bedding, and birthing and burial sheets. A few hideworkers make ritual clothing, and in the past some made shields.

Konso Learning Patterns, Marriage, and Residence

Among the Konso today, there are eighty-seven women and twenty-five men hideworkers, hence it is predominately a female craft. In adherence with their other gender roles, men and women scrape different types of hides for different products. Childcare, cooking, making *chaga* (beer), grinding, and pottery production are women's work. According to our survey, women primarily scrape hides used for: ritual clothing worn for birth and harvest-fertility ceremonies; bags to hold crops and children that symbolize fertility; and bedding and burial sheets representing the beginning and the end of the life course. However, today each individual woman does not make all the different hide products. While most women stated they produce carrying bags, and sleeping and birthing sheets, only five stated that they also knew how to make clothing from hides, which is rarely worn today. Men who scrape hides are viewed as ignorant of cultural ways and are subjected to teasing from other men. Generally, men do not produce women's clothing or items used for birth and death, and associated with the life course. They primarily scrape hides for bags, and in the past men made shields, but this is no longer done and did not require scraping.

There are two different learning systems for men and women hideworkers, including those who use iron, glass, and stone. Forty-four percent (11/25) of men were self-taught, 66 percent (57/87) of women were taught by their mother or another female relative.

In contrast, our study of the nineteen stone-tool-using hideworkers indicated that the lithic learning process was primarily controlled by

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women. Eighty-two percent of these women were either second or third daughters, only daughters, or only children. The hideworkers stated that in most families the oldest daughter is busy helping the mother with other work such as cooking, gathering firewood and water, and taking care of younger children. So the eldest does not usually have the time to learn hideworking. Sixty-five percent ($n = 11$) of the stone-tool-using women learned their craft from their mother or their father's second wife at an early age before puberty. Others learned from their father's mother ($n = 2$), and father's sister ($n = 1$) at a young age. Three learned after they were married from their husband's mother. As stated before, there were only two male hideworkers associated with stone, and they had been taught by their father's mother.

Marriage patterns among the Konso are potentially important for determining use of space, access to resources, and scraper style. The Konso have nine different clans, but unlike the Gamo caste groups, the *Ententa* and *Xauta* are not strictly endogamous. Furthermore, the Konso artisans all belong to one group, and thus the daughter of a hideworker can marry the son of a potter or iron smith, that is, there is a wider opportunity for potential spouses. There are restrictions on Konso marrying members of their own patrilineage. According to the survey results, women marry 54 percent (47/87) of the time and male hideworkers marry 84 percent (21/25) of the time within their natal village. Among those using stone tools, seven women and one man were born and raised in another village, while ten women and one man can count their natal and living village as the same place.

The learning and postmarital residence patterns among the Konso hideworkers result in villages that contain predominately women hideworkers who are completely unrelated to one another (two in Lehayta, two in Kartoha), or are affinal kin to one another but learned from different lineages (one in Oybale, two in Gera), or are consanguineally related but learned from different lineages (two in Gellabo). The remaining hideworkers were consanguine lineal kin and learned within their lineage (two in Oybale, four in Tano from one lineage and two from another lineage). Since postmarital residence is virilocal and daughters learn hideworking from their mothers, generally this creates dissimilarity. I expected that in each village there would be several sources for stone, a lack of discrete areas for hideworking in each village, and a highly variable scraper morphology within and between villages.

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Konso Access to Resources

The Konso hideworkers use a single mastic haft type (see figure 12.1) and a variety of mediums for scraping hides, including glass, iron, and stone. In the Konso survey, 72 percent (18/25) of men use iron, while 61 percent (53/87) of women use glass. Furthermore, women are more likely to use stone at 19.5 percent (17/87) verses men at 8 percent (2/25).

Today, those who use stone use a variety of types, including chalcedony, quartz, quartz crystal, and chert. Why do the Konso hideworkers use different types of stone materials to scrape the hides, and how do they acquire these materials? A kinship study suggests that glass- and stone-using hideworkers have ancestors who were hideworkers from the three districts of Duro, Lehayte, or Gewada, where good chert outcroppings are known. Subsequent generations moved from Duro and Lehayte to other parts of Konso, where chert resources were not available. They preferred chert and obtained chert through their kinship ties. However, hideworkers began to use glass and local quartz resources; this correlated, less than one generation ago, with a decreased demand for hideworking products due to the influx of industrially made goods in the 1970s.

Today, 42 percent of the stone-tool-using hideworkers prefer chert. In the past, the hideworkers of Teshmelle, Gellabo, Gotcha, and Gera relied on relatives or customers to bring them chert from long distances. However, presently most rely on local sources of stone, within a one-hour walk, and they share their quarries with others in the village. At Gellabo they use chalcedony from a long-distance quarry, and chert and chalcedony from a local archaeological site. Similarly, at the Gera villages, the hideworkers use chert and quartz from recently discovered local quarries, but in the past used and preferred chert obtained through trade with Duro. The hideworkers living in Teshmelle villages in the past acquired chert from a long-distance quarry at Baide, but currently collect chalcedony from locally discovered quarries. There is only one hideworker, a man, in Teshmelle who will not share his quarry location with others. All the hideworkers in the village agree that he has the best quality material, and he states that others will have to pay him to get the material. The hideworkers in Gotcha did not share their quarries with one another. At Lehayte they used chert acquired from long-distance trade with Duro in

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the past, and today chert, quartz, and chalcedony are recycled from local and long-distance archaeological sites.

Kashelle was the only village where chert was not the preferred medium for the hideworkers. They preferred to use quartz crystal from a local quarry, even though they have relatives from the Gotcha region. The Kashelle hideworkers currently share a source, but in the past used different sources. The husband of one of the hideworkers who is deceased collected the quartz crystal and died without telling anyone the location. Now they use a nearby quarry and complain about the quality and scarcity of the quartz crystal, and frequently they turn to glass. The Kashelle hideworkers simply referred to anything not quartz crystal as completely useless for scraping hides.

Despite the fact that villages consist of unrelated hideworkers, women generally share quarry resources. Women generally go to the quarries on their way to or from markets. They go together and enjoy one another's companionship on the journey. They frequently visit one another and keep one another company while scraping and softening hides. They even go to one another's households to "borrow" raw materials and will bring their hides to one another's households for pedulation of the hide for softening. In the past, they obtained cherts through their kinship and economic (customers) relationships. Today, they solidify village bonds with other women hideworkers by sharing their local resources of quartz, quartz crystal, and chalcedony.

Konso Use of Space

The Konso hideworkers are primarily women who move from their natal village when they marry. There are no rules that restrict their marriage to other hideworker families. Hence, within villages there is not a clustering of hideworker households, as demonstrated in the villages/districts of Oyale Kashelle, Gera, Leahaye Gotcha, Gellabo, and Kartoha Teshmelle.

In Tano Teshmelle we have the only exception, with the clustering of hideworker households. In this village there are seven hideworkers represented by three clans, and they all reside close together. This is an exceptional number of hideworkers for one village; today it is only rivaled by Leahaye and Debana, which are secondary locations for the migration of

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hideworker families. Teshmelle is known in oral histories, which also can be confirmed through kinship histories, to be the original district for hideworkers. The relationships of marriage and living in the natal, a daughter's, or a friend's household create a single area in Teshmelle dominated by hideworker households. However, in general there are not discrete hideworking residential areas within Konso villages.

Konso Village Scraper Style

Most of the stone-using hideworkers learned knapping before they were married from their mother or another relative. Hence, we are looking at a lineage-based craft, primarily passed from mother to daughter even though the Konso are strongly patrilineal. Since women learn the craft from their mothers, and the society is patrilineal and virilocal, it seemed unlikely that scraper style would reflect village identity.

The Konso bring the quartz flakes and chert, chalcedony, and quartz crystal nodules back to their homes in the folded ruffles of their skirts. In Teshmelle and Gellabo, the hideworkers heat chalcedony under their household hearths to facilitate the fracturing of the stone. The stone may be heated from twenty-four hours to one month. All the hideworkers use a combination of direct and bipolar methods for reducing the raw material into formal scrapers, and production methods are highly individualistic (see Brandt 2003). However, in general, they use a large iron hoe tip and on rare occasions a wooden (or, when requested, stone) mortar to break up the raw material into smaller nodules usually using the bipolar technique. In the bipolar method, a grinding stone is used as the anvil. The Konso hideworkers, like the Gamo *tutuma* users (Weedman 2000), store much of their reduced raw material or core blanks for later use rather than reducing it all immediately into scrapers. The direct percussion method is enlisted, using a smaller iron billet, which is more commonly used to shape the scraper and to resharpen it during use. The scrapers are secured into the haft using tree resin from *Balanites aegyptica*.

The Konso use the stone scrapers to remove the inner fat of cow, goat, and sheep hides when producing bedding and bags. However, they remove the hair when producing clothing. To ensure maximum control while scraping thin goat and sheep hides, they hold them in their hands and laps and scrape using a pushing motion with the handle/scraper. In contrast,

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thick and tougher cowhides are more often tacked to a post and scraped at an angle with a pulling motion. After the hide is scraped, the Konso grind castor oil beans and work them into the hide through pedulation to soften the hide. Ocher is used in combination with the mixture of castor oil beans to color hides used for clothing. Scrapers are produced, hafted, and used in the household context, but they are discarded in village trash heaps or in agricultural fields away from the home.

Figures 12.2 and 12.3 illustrate that the unused and used-up Konso scrapers (this collection consists of female-only scrapers) for each village are distinct in terms of length, breadth, and thickness. For unused scrapers, 59 percent (62/105) expressed significant differences in t-tests of length, breadth, and thickness at .05 confidence level. Twenty-four of the significant differences are between Gellabo and other villages. Gellabo scrapers are smaller in all dimensions than the other scrapers. This cannot be explained by raw material, as Teshmelle also uses chalcedony. The Gellabo scrapers are most like the Gotcha scrapers, and the only factor these two villages have in common is that they both rely on recycled archaeological materials. However, there is another factor, as in Gellabo there are two related female hideworkers. The other villages with a high rate of significant differences between them and other villages are Kashelle and Teshmelle. I have already explained the presence of lineage ties in Teshmelle above, and in Kashelle live a mother and daughter who are both hideworkers. Thus, these kinship ties may account for the high percentage of significant differences between certain Konso village scrapers. T-tests were possible only for used-up scrapers for Gellabo and Tano Teshmelle, where the sample size was thirty or over. Here length and breadth were significantly different from one another in t-tests at the .05 confidence level. Hence, Konso scraper morphology tends to be significantly different on the village scale when women remain in their natal village after marriage.

Archaeological Implications

Establishing kinship relationships, inheritance, and residence patterns has been important for attempting to understand learning groups and the transfer of material culture style, particularly ceramic, and resources through different generations (Arnold 1989; Longacre 1981; Stanislawski

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1977). Debates over stone-tool variability tend to focus on the transfer of knowledge from generation to generation through men, much as the Gamo do. Archaeological reconstructions include women only when tools are informal and/or produced using poor-quality raw materials. These assumptions about men and women and the types of tools they produce and the raw materials they use are unconsciously based on present-day gender roles in Western society. Women are typified as homemakers using resources close to the home to produce tools that are utilitarian in nature and quick to make. In contrast, males are the workers producing finely crafted tools, and they are the explorers using long-distance, high-quality resources.

This study comparing the Gamo and Konso hideworkers demonstrates that women are visible as stone-tool makers, but not because they make informal tools with poor-quality materials. The Gamo hideworkers are male in a caste patrilineal, virilocal society. As a result, there are discrete Gamo hide-scraping and discard areas in a village, hideworkers from a single village share quarry sources, and village/lineage scraper morphology is different from that of other villages. In contrast, among the Konso, women dominate hideworking in a patrilineal, virilocal society, and the craft is predominately learned from their mothers. This results in nondiscrete hideworking areas within the village context. Even though generally women in a village are unrelated, today they share quarry locations. They act as an internal community visiting the quarries and markets together and visiting one another's households. Although they do not have as strong a scraper style on the village level as the Gamo, when there are clusters of related females in a village, such as in Teshmelle, Gellabo, and Kashedelle, there tend to be significant differences between scrapers on the village level.

A comparison of these two Ethiopian cultures in which men and women make stone tools demonstrates that women, like men, use high-quality resources, and they produce formal tools that unconsciously represent their identities. Women's voices are not silenced or demeaned in informal and poorly crafted tools. Hence, when we examine gender, learning patterns, and residence on a large cultural/ethnic scale, it is possible to discern patterns in the material culture. Village similarities in materials produced through household craft production may be a reflection of males in patrilineal, virolocal societies or—I highly suspect—females in matri-

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lineal, matrilineal societies. When, in patrilineal cultures, women predominate in a craft, women learn from their mothers, and postmarital residence is virilocal, there will not often be distinct differences in material culture. However, even within a patrilineal and virilocal system, occasionally women will marry in their natal village, which results in distinct morphological differences in scrapers. In conclusion, it may be very difficult to discern whether a craft is based on female or male assigned tasks; and while gender roles may be difficult to distinguish archaeologically, we no longer have an excuse for assigning stone-tool production, formal or otherwise, to either men or women.

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