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The Materiality of Mobile Pastoralism:
Ethnoarchaeological Perspectives from Samburu, Kenya

by

Katherine Mary Grillo

A dissertation presented to the
Graduate School of Arts and Sciences
of Washington University in St. Louis
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

August 2012

Saint Louis, Missouri

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Abstract

This thesis represents the first comprehensive ethnoarchaeological study to date on the material culture of African mobile pastoralism, a way of life economically, culturally, and ideologically centered on the herding of livestock. In Africa, tens of millions of people today still rely on cattle-based pastoralism for survival in arid lands that are unsuitable for agricultural production. Our understanding of ancient pastoralism is still hampered, however, by a belief held by many that nomadic populations such as pastoralists are difficult to trace in the archaeological record. Results from ethnographic research among modern Samburu cattle pastoralists in Kenya in fact challenge common archaeological assumptions about relationships between mobility, subsistence practices, and material culture.

Data from twelve months of participant observation, extensive interviewing, and the administration of 117 household surveys reveal a deep and perhaps unexpected integration of pottery and other container types into a highly nomadic lifestyle centered on the herding of livestock. Key findings demonstrate that ceramic production and consumption, for example, are not prohibited by high levels of residential mobility. Instead, ceramic technologies *enable* pastoralist systems of production in part by allowing people to better exploit certain resources in unpredictable and drought-prone environments. Despite prevailing wisdom, repeated use of some spaces by pastoralists would allow for significant and varied accumulations of ceramics and other archaeologically-recoverable material culture. These results should, ultimately, prompt new dialogue in the archaeological literature on the material consequences of food production.

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1 Introduction

The development and spread of food production can be seen as among the most important and transformative events in recent human history. Pastoralism, a way of life economically, culturally, and ideologically centered on the herding of livestock (R. Dyson-Hudson and N. Dyson-Hudson 1980), has had a tremendous impact on social and environmental landscapes since originating independently in various forms throughout the world. In Africa, pathways to food production followed a unique trajectory: Cattle-based pastoralism developed on the continent long before the development of any indigenous agricultural¹ systems (Blench and MacDonald 2000; Garcea 2004; Marshall and Hildebrand 2002; K. Neumann 2003; van der Veen 1999). Today, tens of millions of people in Africa still rely on cattle-based pastoralism for survival in arid lands that are unsuitable for agricultural production.

Zooarchaeological and paleoethnobotanical research have both been critical to our understanding of domestication processes that have underlain transitions in Africa from hunter/gatherer to pastoralist or later agricultural economies. Other types of artifactual evidence, such as ceramics, are found at hunter/gatherer and pastoralist sites throughout Africa and have been used as valuable evidence for archaeologists trying to build cultural-historical chronologies. Yet archaeological studies of material culture made and/or used by mobile pastoralists, for example, have rarely considered the ways in which such data might contribute to our understandings of both ecological adaptation and

¹ Although the term “agriculture” can refer to both plant cultivation and livestock husbandry, in this dissertation I will, for convenience, use the term “agriculture” to refer exclusively to crop cultivation and/or farming. I use the term “food production” to cover both plant and animal domestication.

the social dynamics of food production. Relatively high levels of residential mobility are thought to preclude the development of specialized or centralized craft production (D. Arnold 1985), and highly mobile herders are assumed to be unlikely to carry heavy or breakable goods in the first place (Cribb 1991; A. Smith 1992, 2005). Few architectural or artifactual remains would be left behind at ephemeral pastoralist sites, and thus as Peter Robertshaw once wrote, "...the conclusion seems inescapable that pastoralists will remain poorly documented in the archaeological record" (1978:30).

I have one very broad research question: What *are* the material signatures of cattle-based mobile pastoralism? The most useful approach to answering this question might be to consider the two major variables at play. First of all, how does **mobility** influence both the production and the consumption of cattle pastoralist material culture? Second, how does the material culture produced and used by such pastoralist groups relate to specifically pastoralist means of **subsistence**? Few studies have thus far examined, for example, the container technologies needed for the preparation and serving of this pastoral cuisine. To address these questions I present here the results from extensive ethnoarchaeological research among Samburu cattle pastoralists in Kenya on the integration of pottery, grindstones, and other archaeologically-recoverable material culture into a relatively mobile lifestyle culturally, economically, and dietarily centered on livestock.

Because so little baseline research has ever been conducted on pastoralist kitchen technologies, the bulk of this dissertation is descriptive in nature. I aim first to establish what an African pastoralist "container complex" (K. Nelson 2001) might look like in its entirety by describing common Samburu containers used in various locations throughout

the region. Second, I present an ethnohistoric case study on the production, use, and discard of pottery in a pastoralist context. Finally, I work to develop middle-range theory about pastoralist material culture vis-à-vis the material cultures of other groups.

Quantitative and qualitative data on relationships between mobility, subsistence, and material culture challenge the assumption that pastoralists need remain invisible in the archaeological record. I argue that functional and ecological considerations structure the use of everyday kitchen technologies by Samburu women and men, and that these technologies specifically enable mobile pastoralist ways of life. I also suggest new directions for future research on pastoralist ceramics and other types of material culture that reach beyond culture-historical and functionalist frameworks to consider, on a more holistic level, the materiality of pastoralist lives. In doing so, I aim to encourage archaeological research in Africa that privileges material culture as a driving force in the creation, development, and survival of pastoralist societies.

1.1 Dissertation Structure

This dissertation is structured as follows. Chapter Two provides background information on the history and development of African pastoralism as known from the archaeological record. I then introduce previous studies of pastoralist material culture, and lay out the goals of my own project. Chapter Three then begins my discussion of the Samburu research project with a description of my ethnoarchaeological methods, and includes a very basic introduction to Samburu (both people and place) in north-central Kenya. Chapter Four is comprised of three longer sections on certain aspects of Samburu life relevant to questions of archaeological interest, namely mobility and landscape use,

subsistence, and material culture. This third section describes in detail common household containers (both hand-made and store-bought) in Samburu, particularly those used by women for everyday domestic activities such as cooking and milking livestock. Chapter Five takes a closer look at potting traditions in Samburu. I first discuss what we know about the history and organization of potting by Dorobo women in Samburu, and continue with a description of technical processes – from clay selection to the firing of pots – once used throughout the region. I conclude this chapter with a short section on ceramic style.

Chapter Six turns from the production of material culture to its consumption. I have divided this chapter into two parts, both presenting data on the functional relevance of material culture to Samburu systems of food production. The first part examines pottery and the ways in which potting technologies have allowed people to exploit and/or maximize returns from various resources in times of both food stress and food abundance. The second examines grindstones, another type of material culture often associated with sedentary agricultural populations, and their articulation with a pastoralist economy.

The dissertation up to this point has painted a broad picture of pottery production, use, and other aspects of Samburu domestic life over the last several decades. Chapter Seven is designed to give the reader a current snapshot of Samburu household material culture across three different regions: the highlands, the Lorroki Plateau, and the lowlands. I use quantitative ethnographic data gathered from household surveys to examine factors (including mobility, wealth, demographics, etc.) behind variability seen in household assemblages of material culture. These data speak to, among other things,

the material effects of settling down and becoming more reliant on agricultural produce. Chapter Eight draws the discussion back out to consider the ways in which the material culture of Samburu households might then be distributed across an archaeological landscape.

Finally, the conclusion of my dissertation brings the discussion back to archaeology, reiterating major findings from this Samburu case study and reflecting on their relevance to interpretations of the African archaeological record. Appendix I represents the documentation and description of all Samburu pots found during my fieldwork. Given the gradual disappearance of potting traditions in Samburu, the thirty-four clay pots shown here likely represent the entire corpus of twentieth century Samburu pottery that is now, and will ever be, available for study by archaeologists or other scholars. Appendix II may clarify methodological issues by showing survey forms used in the research. Appendix III contains the extensive ethnobotanical data that I collected.

2 Approaches to the Archaeology of African Pastoralism

Archaeologists, geneticists, environmental scientists, art historians, and others are collaborating to create compelling narratives of the origins and development of African pastoralism (e.g., Gifford-Gonzalez 2005; Hanotte et al. 2002; Homewood 2008). These histories testify to profound social transformations engendered by inventions and/or adoptions of food production, and the African case must be seen as foundational to global understandings of human adaptation to climatic change. This chapter will provide an introduction to the archaeology of African pastoralism as it stands today, beginning with a basic accounting of what we know from a culture-historical standpoint. In doing so I will cite a trove of literature produced by zooarchaeologists, paleoethnobotanists, and other scientists; I then step back to consider more critically the contributions that have thus far been made to our understandings of ancient African pastoralism by scholars interested in other types material culture. I will argue that ceramics and other technologies associated with food production, for example, have been under-theorized in the pastoralist archaeological literature. At the end of this chapter I introduce the literature on materiality that inspired and guided my ethnoarchaeological research program towards results that improve our understanding of African pastoralism both past and present.

2.1 Terminology

For clarity's sake, it may be useful to explain some of the terminology commonly used in reference to African pastoralist systems. In this dissertation I consider pastoralists to be, following Gifford-Gonzalez's widely-used definition, "groups who depend primarily on the products of their hoofed domestic animals, and who organize their settlement and mobility strategies to suit the dietary needs of their livestock" (2005:188). In Africa, pastoralists rely on cattle, sheep/goats, and/or camels, moving them to pasture as needed. These groups are often referred to as *mobile pastoralists*, because residential settlements are often moved along with animals in patterns that vary from year to year. In some cases, part of a group might be settled at a residential encampment while other members of the group take livestock to pasture in farther-flung places. *Transhumance*, for reference, typically indicates a highly structured pattern of mobility based on fixed seasonal migrations with flocks or herds (for example, from summer to winter pastures). This type of transhumance is uncommon in Africa, where pastoralist movements instead often follow unpredictable and patchy rainfall. For a comprehensive review of how mobility has been defined and discussed in recent archaeological literature see Barnard and Wendrich (2008).

Note that the terms presented above refer strictly to patterns of mobility and may seem to imply a total reliance on pastoral produce for subsistence: This is not always the case. Most African pastoralists rely on part-time cultivation, wild foods, or trade and/or exchange to supplement their diets. Nevertheless, in some regions scholars have chosen to specify the degree of dependence on cultivation or other resources using more specific vocabularies. Some transhumant pastoralists are defined as "agro-pastoralists," for example, devoting at least some of their time and effort towards cultivation. Other groups

have been considered “multi-resource” pastoralists (Salzman 1972), or “herder-gatherers” (Rosen 2002), relying extensively on either hunting or the foraging of wild plant foods to supplement takes from their domestic stock. Many Africanist ethnographers consider these terms unnecessary. We maintain that the term “pastoralism” itself denotes a wide range of subsistence practices; indeed the variability across (and flexibility within) pastoralist systems in reference to both mobility and subsistence are two of their defining traits (Frachetti 2008b; Homewood 2008; Spear and Waller 1993).

2.2 Ancient African Pastoralism

Pathways to food production in Africa are distinctive in a number of ways, the most notable being that pastoralism long preceded the domestication of plants. For over eight thousand years, cattle-based pastoralism has thrived on the African continent, while indigenous domesticated plants appear relatively late at c.4000 BP. The success of early pastoralism, and its viability over such a long time frame, can be attributed in large part to the diversity and flexibility of African pastoralist economic and social systems in the face of environmental risks that characterize African savanna systems (Marshall et al. 2011).

2.2.1 *Origins in Northern Africa*

The origins of cattle-based pastoralism in Africa can be seen in some ways as a response to large-scale climatic changes by economically and socially diverse hunter/gatherer groups. During the last glacial maximum beginning c. 20,000 years ago, hunter/gatherers living in the northern African interior were forced to abandon the region

for the northern African coast, the Nile Valley, and what are now the southern edges of the Sahara (Barich and Garcea 2008; Kuper and Kröpelin 2006). As the climate warmed in the Early Holocene (c.9500 bp), diverse groups of hunter/gatherers were able to repopulate savanna grasslands throughout northern Africa (Holl 2005; Kuper and Kröpelin 2006). These groups of hunter/gatherers are sometimes conceptualized as an archaeological “cultural complex,” known as the Khartoum Mesolithic (Arkell 1949), occasionally the Epipaleolithic (Close 1995), or previously the Aqualithic (Sutton 1974). Many of these societies typically settled around permanent water sources, and are thought to have followed delayed-return subsistence strategies that incorporated food storage, use of ceramics, and in some places possible management of wild game such as Barbary sheep (Dale et al. 2004; Dale 2006; di Lernia 2001). Investment in living spaces at rockshelters and other settlement sites frequently attests to reduced patterns of mobility (Garcea 2004), and many archaeologists situate the earliest processes of animal domestication in social and economic contexts such as these rather than among more mobile and egalitarian hunter/gatherer groups (see Marshall and Weissbrod 2011).

Archaeological and genetic data strongly suggest that cattle were domesticated from populations of wild *Bos primigenius* by hunter/gatherers in the eastern Sahara c. 10,000-8,000 bp (see summary in Marshall and Weissbrod 2011). Domestication of cattle may have improved food security for hunter/gatherers, increasing the predictability of food resources in the face of unpredictable rainfall and short-term climatic fluctuations (Marshall and Hildebrand 2002). Whether cattle in Africa were domesticated first for their meat and blood or for their milk is unknown. Early dairying is suggested by linguistic evidence (Ehret 1993) as well as Saharan rock art that depicts milking scenes

(Le Quellec 2011; Simoons 1971). Genetic studies on lactase persistence (Tishkoff et al. 2006) are beginning to shed light on the antiquity of dairying in Africa, but residue analyses of early pastoralist pottery are needed to settle the issue.

In any case, increased mobility would have been necessary for the care of domestic herds in areas of patchy resource availability. Marshall and Weissbrod (2011) and Marshall (2007) explain how the domestication of the donkey in northern Africa may have facilitated greater mobility, radically shaping patterns of pastoralist settlement and subsistence. Domestic sheep and goats from the Near East were integrated into African pastoralist systems by 7,000 years ago. Despite a general reliance upon cattle, sheep, and goats, however, early pastoralists in Africa continued to use a wide range of wild plant and animal resources. Evidence from the western African Sahel supports the idea that highly specialized pastoralism only developed at a much later stage (Linseele 2010).

Regardless of how important cattle were to the subsistence bases of early pastoralist societies in Africa, there can be no doubt that cattle were central to cultural practice, social ideology, and religious belief (c.f. Chang 1993b). Wengrow (2001:93) does broadly caution against the mystification of cattle and “cattle cults” in narratives of African cultural development, as cattle likely served as more than just symbols of power and/or objects of worship. Nevertheless it is still worth mentioning the prevalence of cattle iconography at archaeological sites. Ceramic cattle figurines have been found at pastoralist sites throughout northern and eastern Africa (Breunig et al. 2008; Gouletquer and Grébénart 1979; C. Nelson 1995), and pastoralist rock art from the Sahara, the Horn of Africa, and eastern Africa shows cattle as a common iconographic subject (Brandt and Carder 1987; di Lernia and Gallinaro 2010; Holl 2004; Lynch and Robbins 1978). Cattle

burials and associated megalithic architecture dating to the early Holocene in northern Africa also suggest the centrality of livestock to pastoralist ritual practice. Di Lernia (2006) prefers an ecological explanation for these practices, proposing that mortuary rites involving cattle sacrifices were shared social responses among pastoralist populations to catastrophic climatic events such as droughts.

2.2.2 Expansion into Eastern Africa

A hyperarid phase from 6,000-5,000 years ago led pastoralists in the Sahara Desert to move outward to the Sahel, the Nile Valley, and eventually into eastern Africa. A number of ceremonial “pillar” sites and domestic sites found in the Turkana Basin of northwestern Kenya, dating from c. 4,500 -4,000 bp, mark the beginning of a pastoralist presence in eastern Africa that continues today (Barthelme 1985; Hildebrand et al. 2011; Marshall et al. 2011; C. Nelson 1995). Early pastoralists living in the Turkana Basin had a diversified subsistence base that included fish and other wild fauna (Marshall et al. 1984). Sheep, goats, and to some extent cattle are thought to have been important, in terms of both subsistence and ideology, to this group (Barthelme 1985; C. Nelson 1995). Pastoralism eventually spread through Kenya to as far south as central Tanzania (Gifford-Gonzalez 2000; Marshall et al. 2011). The archaeological record suggests a complicated and as yet poorly understood mosaic of social and economic interaction among herders, herders who might have lost their domestic stock, and indigenous peoples who relied predominantly on wild resources (Gifford-Gonzalez 1998; D. Wright 2011). By 3,000 years ago, however, highly specialized pastoralism became established in the region as a

Table 2.1 Cultural history of the Pastoral Neolithic in eastern Africa (from Marshall et al. 2011)

Exploratory Northern Pastoral Phase					
Regional Traditions	Origins/ Linguistic Affiliation	Temporal Range	Subsistence Economy	Material Culture	Notes/Defining Characteristics
<i>Nderit</i>	Southern Cushitic?	ca. 5000–3500 bp	Generalized pastoralism, including sheep, goats, and some cattle; hunting and fishing	“Nderit” ceramic tradition including figurines, obsidian microliths, exotic ornamentation	Megalithic pillar sites near Lake Turkana, group cemeteries Later sites with Nderit pottery found throughout Central Rift
<i>Ileret</i>	Southern Cushitic?	ca. 4000-? bp	Unknown, likely generalized pastoralism	“Ileret” ceramic tradition, stone bowls	Connection with Nderit tradition poorly understood, either contemporary or Ileret may be derivative
Southern Settlement Phase					
Regional Traditions	Origins/ Linguistic Affiliation	Temporal Range	Subsistence Economy	Material Culture	Notes/Defining Characteristics
<i>Elmenteitan</i>	Southern Nilotic?	ca. 3000-1200bp	Specialized cattle, sheep, and goat pastoralism	Blade-based obsidian lithic technology, undecorated or lugged ceramic vessels	Highland western and southwestern Kenya, Loita/Mara plains, western side of central Rift
<i>Savannah Pastoral Neolithic (SPN)</i>	Southern Cushitic?	ca. 3300-1200bp	Specialized cattle, sheep, and goat pastoralism	Highly diverse lithic and ceramic industries (including Narosura, Akira, Marangishu), stone bowls	Highland central and southwestern Kenya, Serengeti/Mara plains
<i>Eburran Phase 5</i>	Indigenous early Holocene populations	ca. 5000-1200bp	Hunting/gathering, gradual adoption of domestic stock	Blade-based obsidian lithics with characteristic platform preparation, range of ceramic types found in association (including Akira, Salasun, Marangishu)	Sites found in Naivasha and Nakuru basins of the central Rift, intensive interaction with SPN groups, avoidance of Elmenteitan?
<i>(Late) Kansyore</i>	Indigenous early Holocene populations	ca. 3000-? bp	Hunting/gathering/fishing, some adoption of domestic stock	Highly decorated “Kansyore” ceramics	Contemporary with food producers, domestic fauna found at few later Kansyore sites

viable means of subsistence (Marshall 1990). Table 2.1 contains a brief description of the many archaeological “cultures” identified for this period, broadly referred to as the “Pastoral Neolithic” (Ambrose 1984; Bower 1991; Bower et al. 1977; Karega-Munene 1996). The early spread of pastoralism farther south on the African continent is poorly understood but may have been challenged by the prevalence of animal diseases, especially tsetse-transmitted trypanosomiasis or “sleeping sickness” (Gifford-Gonzalez 2000). The earliest pastoralist sites in southern Africa date to only 2,000 years ago, and show an incorporation of sheep herding into more generalized subsistence systems (Sealy and Yates 1994).

Early hunter/gatherer populations throughout the Sahara relied, often intensively, on the use of wild grasses and cereals. The appearance of indigenous domestic crops in Africa was late, however, due to risks that may have been incurred by early hunter/gatherers in trying to cultivate under arid and unpredictable climatic conditions (see Marshall and Hildebrand 2002). The earliest African plant domesticate, pearl millet (*Pennisetum glaucum*), appears to have originated approximately four thousand years ago by mobile, multi-resource pastoralists living in the grasslands of western Africa (Manning et al. 2011). Cowpeas (*Vigna unguiculata*) are an early domesticate found at Kintampo forager/farmer grassland sites in what is now Ghana dating to c. 3,600 bp (D’Andrea et al. 2007). Again, social and economic settings for domestication in Africa were diverse, and populations continued to rely on an array of wild plant and animal resources. No paleobotanical evidence for agricultural production by pastoralists in eastern Africa has been recovered from any archaeological site (Young and Thompson 1999), nor is there positive evidence that pastoralists either cultivated or otherwise

consumed wild grains themselves. Ethnoarchaeological data presented in this dissertation will suggest ways in which foraging for wild plant resources such fruit, tubers, nuts, and greens, however, may have been important to herders in arid and semi-arid regions of eastern Africa for some time.

2.3 Pastoralist Ecology

I have just described, briefly, the long-term history of pastoralist innovations and adaptations in Africa. There is a parallel body of literature on the ecology of African pastoralism drawn from studies of pastoralist societies found throughout Africa today (e.g., Behnke et al. 1993; Coppolillo 2000; Homewood 2008; Mace 1993a; Western 1982). These scholars note that over 60% of the land mass in Africa is currently utilized primarily for pastoral production (Galvin 1992; summarized in Homewood 2008). Pastoralists typically occupy rangelands in arid to semi-arid climatic zones, and pastoralist ecologies are nearly always structured, on a general level, by seasonal patterns of rainfall that provide grass for pasture. Landscapes considered unsuitable for plant-based agriculture, given their aridity and unpredictability in terms of rain, can often be successfully exploited by herders. Ecologists have described a range of pastoralist adaptations to such landscapes; the “disequibrial” pastoralism of the Turkana in northern Kenya, for example, can be contrasted to the “equilibrial” pastoralism of the Maasai farther south (see Behnke et al. 1993). In all cases, pastoralist systems in Africa have to be dynamic and flexible in the face of often difficult and unpredictable environmental conditions.

A great deal of research has also been conducted on the “human ecology” of African pastoralism (Galvin 1992; M. Little 1989), with a focus on diet, nutrition, and health. Galvin (1992), in a comparative study, concludes that the diets of pastoralist groups across Africa are qualitatively similar but variable on a quantitative level. All pastoralist societies in Africa, for example, rely on milk as a dietary staple, which is culturally preferred over plant foods. Consumption of milk varies seasonally, with availability being greater in wet seasons. Meat, blood, fat, and wild plant foods are often incorporated into pastoralist diets during dry seasons when milk is less readily available. Some groups do rely more heavily on grains than other groups, however, especially those (such as the Maasai) more integrated into market economies. Galvin (1992) also suggests that African pastoralists typically have large human populations relative to livestock numbers and other resource bases. This imbalance, she argues, leads to relatively low energy intakes across the board, although African pastoralist diets are more than adequate in protein. Galvin and Little (1999) remind us that even though pastoralist diets throughout Africa are conceptually thought to be similar, they are in fact highly sensitive to local variabilities in climate and ecology along with social, political, and personal circumstance.

The literature on the political ecology of pastoralism in eastern Africa, especially as it relates to development policy, is expanding and critically important. This literature is summarized in Fratkin (1997). Likewise of importance but beyond the scope of this dissertation is the literature on the political economy of eastern African pastoralism (Hjort 1981; Rigby 1985), which often addresses either the (real or perceived)

marginalization of pastoralist societies in national political discourses and economic systems.

2.4 The Material Culture of Mobile Pastoralism

The next few sections explore a variety of theoretical approaches that have informed this ethnoarchaeological study. I first consider the literature on mobility and material culture, and then describe two areas in which I think our understanding of pastoralist material culture might be improved: why, from a functional perspective, pastoralists employ certain technologies such as pottery, and how in a broader sense that material culture is related to cultures of food. As I will explain, this thesis is, on its most basic level, a study of *materiality* as related to everyday pastoralist lives.

2.5 Mobility

There is an increasingly large collection of archaeological literature on relationships between mobility and material culture. Much of this literature is devoted to better modeling past systems of mobility, a topic that has long been of interest to archaeologists interested in human evolution and the development and dispersal of hunter/gatherer societies throughout the world. Site distributions, size, and density are often used to study mobility (Kent 1991; Panja 2003; Seymour 2009a), and isotopic data has also played an increasingly important role in such studies (Balasse et al. 2002; Price et al. 1994; Tafuri et al. 2006). Material culture, particularly lithic evidence, has been used in various ways as a proxy indicator for both individual and group-level mobility

(e.g., Amick 1996; Close 1996, 2000; Cowan 1999; Holdaway et al. 2010; Shott 1986; Wallace and Shea 2006). A substantial body of theory now exists, for example, concerning the complex ways in which prehistoric settlement systems might be reconstructed using data on raw material distributions, reduction sequences, and so on. The archaeological literature on mobility and ceramics is growing, but few scholars argue that patterns of mobility in prehistory can be reconstructed from ceramic evidence alone. Instead, most of the literature on mobility and ceramics examines ways in which ceramic production might be prohibited, limited or otherwise influenced by a society's residential mobility (see P. Arnold 1985; Eerkens 2008).

Mobility can, in fact, affect numerous aspects of a society's technological choices, from production to use, transport, and discard. Consider consumption: Marshall Sahlins (1972:11) once speculated about why nomadic, egalitarian societies tend to own and use so few things. Having large numbers of cumbersome goods, he argued, would inhibit mobility, and therefore it would be culturally unacceptable to accumulate wealth in such a "grievously oppressive" way. Material culture *could* affect patterns of mobility, in other words, so mobility therefore *has to* affect material culture. Which determines which might be, ultimately, a chicken-and-egg proposition. I would observe, however, that archaeologists have overwhelmingly framed the issue in terms of how mobility structures material culture and not vice-versa. Could being able to cook foods in pots, for example, potentially influence decisions that pastoralist groups have to make as to when, where, and how to move? Much discussion in this dissertation will focus on the dialectical relationship that must exist between technology in prehistoric pastoralist societies and patterns of mobility.

To reiterate, though, hunter/gatherer societies have been the focus of nearly all the archaeological research on relationships between mobility and material culture. This is true for pottery as well as lithics (Eerkens 2003; Eerkens et al. 2002; Sampson 1988; Simms et al. 1997); pottery and forms of mobility in agricultural societies have been explored as well (P. Arnold 1999; Hegmon 2002). Scarborough (1992) examined changes in ceramic assemblages from the American Southwest as communities settled down and developed greater dependence on agricultural forms of food production. Pottery technologies in mobile pastoralist societies have only been briefly and sporadically addressed (Haiman and Goren 1992; Jacobsen 1984; Peisach et al. 1990; Saidel 2002a, b). I would point out that when modeling mobility and material culture it may be difficult to isolate mobility, apart from subsistence, as an independent variable. Sedentism, for example, is often conflated with both agricultural production and population growth, even if each of those three things may in fact occur independently of one another.

2.6 Ecological/Functional Perspectives

Ecological approaches to the study of material culture have a long history in archaeology (see Caldwell 1958; Steward and Setzler 1938 for important early examples). Scholars of various theoretical persuasions continue to consider ways in which humans throughout time have interacted with their environments, using different technologies as part of what might be considered adaptive systems. In eastern Africa, for example, much research on stone tool use by early hominids is still driven by functional concerns (see Foley and Lahr 2003).

In this dissertation I consider ecological/functional reasons for the use of pottery in pastoralist societies. Little research has ever been conducted as to why and how pastoralists make use of heavy or breakable objects such as clay pots at all. Hunter/gatherer ceramics are now well-known from sites throughout the world (see for example Dale 2006 for eastern Africa; Eerkens et al. 2002 for the Great Basin; Jordan and Zvelebil 2009 for northern Eurasia; Roosevelt 1995 for South America). Several ethnoarchaeological studies have considered culinary processing techniques (including the use of pottery) employed by hunter/gatherer communities (Bunn et al. 1988; see also Gifford-Gonzalez 1993; Yellen 1977). The goal of much of this research has been to understand the patterning of faunal remains found at archaeological sites, however, rather than the patterning of ceramic sherds. Ceramics are thought of as a relatively recent invention, I think, and thus of less relevance to scholars interested in the evolution of hominid foodways.

Using Human Relations Area Files (HRAF) data, D. Arnold (1985:120) concludes that approximately thirty percent of the world's mobile groups make ceramics, having "successfully adapted" to various environmental constraints and numerous additional challenges posed by their mobile lifestyles. But for what reasons do mobile groups such as pastoralists decide to "adapt" to their environment and start to make pots? Despite the ubiquity of pottery on pastoralist archaeological sites in northern and eastern Africa, central Asia, and elsewhere throughout the world, there has been very little ethnographic or ethnoarchaeological research dedicated to examining functional relationships between pottery use and pastoralist subsistence. Even the foundational ethnographies about eastern African pastoralism (e.g., Evans-Pritchard 1940; Gulliver 1955; Spencer 1965)

are of little help in terms of describing material culture. Although, or perhaps *because*, herding livestock was (and is still) seen as the central activity around which pastoralist societies organize their lives, relatively few researchers focused on the domestic sphere of pastoralist life. Cooking and other household activities have long been considered the domain of pastoralist women, and Gifford-Gonzalez (1998; 1993) attributes the neglect of these topics in classic anthropological literature to the androcentrism of early ethnographers. Although this gap in the ethnographic literature is certainly closing, the general lack of information available about pastoralist material culture is a persistent problem for archaeologists seeking to understand how lithics, pottery, other containers, and items such as grindstones are productive technologies for mobile groups with specialized pastoralist modes of subsistence.

Of course function is often difficult to ascertain for objects such as ceramic sherds found in the archaeological record. Only recently have methods for residue analyses improved enough for archaeologists to determine, in some cases, what had once been cooked in ceramic pots. Actualistic studies of ceramic use can improve the interpretive value of such studies, and ethnoarchaeological research that examines relationships between ceramic form, function, and style can contribute valuable middle-range theory to broader understandings of ceramic ecology. Multi-disciplinary studies such as these will, I think, be invaluable to understanding technological choices made by pastoralists throughout the course of prehistory.

2.7 Archaeologies of Food

When I write about artifact function I am, for the most part, writing about food. When archaeologists talk about “adaptation” to certain environments the implication is that the societies in question are finding ways to feed their families, to survive on a subsistence level. Scholars who write about food in terms of nutrition and subsistence tend to study small-scale, non-centralized, and non-hierarchical societies such as (most) hunter/gatherer and pastoralist groups. Archaeological and ethnoarchaeological research on food in hunter/gatherer societies has largely been driven by questions about food procurement and food sharing, for example, that relate to our understandings of human evolution (e.g., Isaac 1978; Kaplan and Hill 1985; Marshall 1993, 1994). Archaeological literature on food in pastoralist societies focuses overwhelmingly on processes of domestication (e.g., Marshall and Hildebrand 2002), or issues related to the economics of food production (e.g., di Lernia 2002).

In the theoretical literature on the archaeology of food there is a very real gulf, I think, between scholars who work from ecological/economic paradigms and others who write about food as a means to understand identity and other social phenomena (Dietler and Hayden 2001; Miracle and Milner 2002; Twiss 2007). The body of literature produced by the latter is focused most often on “complex” and agricultural societies. The centrality of food to feasting (R. Adams 2004; Dietler 1996, 2001; Dietler and Hayden 2001) and other formulations of status or power (Kirch and O'Day 2003; van der Veen 2003), for example, have all been widely explored. Hamilakis (1999) rejects any consideration of subsistence and nutrition in studies of food consumption in Bronze Age Crete, arguing for an archaeology of food that centers instead on theories of “embodiment.” I share his opinion that the consumption of food is often neglected in

archaeological literatures, but I would dismiss the false dichotomy he presents that social and environmental issues are (or should be) mutually exclusive objects of study.

The position taken in this dissertation is that an understanding of food and food-related technologies in pastoralist societies, for example, must first be grounded in an understanding of subsistence and pastoralist ecology, and second consider cuisine from a more holistic perspective. I take particular inspiration from MacLean and Insoll's (1999:79) paper on the dynamics of kitchen life in Iron Age Mali, in which they recognize that "a particular cuisine is not simply a list of raw ingredients, but rather what is done with those ingredients, and that the female technology of the domestic kitchen plays a fundamental role in cultural identity." Other literature on kitchen technologies and the social contexts of food consumption have been influential (Fuller 2005; Jones 1999; Mills 1999), but again I note the dearth of literature on these topics for smaller-scale hunter/gatherer and pastoralist societies. A great deal has been written about the central role of cattle to the identity and culture of eastern African pastoralists (from Herskovits (1926) and Evans-Pritchard (1940) to Galaty (1989)), yet these animals are typically considered in the abstract as representing wealth or prestige rather than as the source of bone soups, boiled blood, and fermented milk that sustain herding families. The tools such as pottery used by women to prepare these foods are central to pastoralist lives and have, for too long, been overlooked in the ethnographic and archaeological literature.

2.8 Archaeological Approaches to African Pastoralist Material Culture: Culture-History and Prospects for Understanding the Materiality of Everyday Life

I have yet to explain how Africanist archaeologists *have* previously analyzed and conceptualized various types of pastoralist material culture. Ceramics might serve well as an example. Northern Africa has some of the earliest pottery in the world, invented independently by hunter/gatherer groups in various locations at least some 9,000 years ago (see Jesse 2010 for a review). Pastoralism arose among these groups, and ceramic industries continued to flourish even in more mobile herding groups. Innovative methodological approaches, such as *chaîne opératoire* analyses of decorative techniques, have greatly clarified hunter/gatherer and pastoralist cultural histories (Caneva 1987; Garcea 2003; Garcea and Caputo 2004). Studies of later pastoralist ceramics in eastern Africa have also focused almost exclusively on building basic cultural histories through the creation of various typological systems (Collett and Robertshaw 1983; Robertshaw and Collett 1983). Very few, if any, archaeological studies of pastoralist ceramics in eastern Africa have examined in detail the social, economic, or ecological contexts of ceramic production and use. The same can be said for lithics; there have been many typological and technological studies but even fewer on the social, ecological, and economic dimensions of lithic production and use by pastoralist groups (but see Brugal and Mourre 2005 for an ethnoarchaeological case study among the Turkana). Beyond typology, specific studies of pastoralist grindstones, architecture, and other types of material are lacking as well, although there are a number of studies, written by anthropologists, archaeologists, architects, and art historians, on houses made by contemporary mobile populations (e.g., Parkington and Mills 1991; Prussin 1995).

Despite the occurrence of pottery, grindstones, and other durable technologies in pastoralist archaeological contexts, in the broader archaeological literature these goods

(often considered hallmarks of Childe's (1936) "Neolithic Revolution") are still often implicitly associated instead with the development of complex agricultural societies. Descriptions of these artifacts, for example, are often framed in reference to the typical material lives of settled farmers rather than in reference to specifically pastoralist manners of being: Mobile pastoralists carry *fewer* heavy or breakable objects; they maintain an adaptively *minimalist* material existence. In sub-Saharan Africa, where there were no settled farmers until roughly two thousand years ago, these manners of thinking and comparison are of limited use. There have been very few, if any, studies to examine the material culture of mobile pastoralism on its own terms. This dissertation ventures to do so, from a theoretical perspective that considers **materiality** as critical to understanding relationships between human societies and both their social and natural worlds (DeMarrais et al. 2004; Meskell 2005a, b; Miller 2005; Olsen 2003, 2010).

Lynn Meskell argues for bringing focus back to the "dialectic between people and things" (Meskell 2005b:4), and in a number of ways a recent obsession in the archaeological ranks with actor-network theory (c.f. Latour 2005; Law and Hassard 1999) and the agency of material culture (Gosden 2005; Knappett 2005; Knappett and Malafouris 2008) indicates an abiding interest in theorizing this issue. My research will address one lacuna, as I see it, in this body of literature. As Meskell states, what has largely been missing in archaeological writings about materiality "has been our sense that our own engagement with the theory and nature of materiality must always also infer a parallel theory and engagement on behalf of the populations that created these objects in the first place" (2005c:52). I hope to detail pastoralist material culture and ecology in Samburu as I see it from an outsider's perspective. I will also, per Meskell's challenge,

attempt to show how Samburu *themselves* understand and articulate the functional relevance of various container technologies, including pottery, to the daily realities of their pastoral lives.

Much has been written from an anthropological perspective about the animal/human relationship (Ingold 1994; Mullin 1999), including how the ways in which humans perceived and engaged with animals must have changed with domestication (Ingold 1994). A recent special issue of the journal *World Archaeology* (June 2010) was devoted to human/animal relationships more broadly, and papers examined topics from the consideration of animals as social beings (Orton 2010) to animals as subjects in iconography and cosmology (Paisley and Saunders 2010). For archaeologists interested in mobile pastoralism, I would argue that the materiality of the animal/human relationship is both its most relevant aspect and its most under-discussed. I will present a case that the dependence of people on cattle, and the dependence of cattle on people, has to be mediated by material culture. One cannot survive without the other, without, for example, the milking containers and other objects that constitute the material trappings of everyday pastoralist lives. The artifacts found on pastoralist archaeological sites, and site structures themselves, must therefore be considered in terms of how they might (or might not) allow for specifically pastoralist forms of subsistence and settlement.

The mediational role that material culture plays in pastoralist societies is not simply a matter of functional adaptation to difficult ecological settings. I am also interested in exploring the ways in which social, economic, and ideological relationships among pastoralists, their livestock, and the outside world are both created and constantly mediated by material culture. The idea that societies both shape and are shaped by their

things is by no means a new one; Ian Hodder (1982), decades ago, used a Samburu case study to demonstrate this point. I would simply argue that archaeologists still tend to value material culture for what it might say about the social/cultural/historical/ideological processes that create it, rather than the other way around. As Bjørnar Olsen (2003:90) explains, “The materiality of past societies is mostly seen as the outcome of historical and social processes that are not in themselves material, leaving materiality itself with little or no causal or explanatory power for these processes.” I am, with Olsen (2003, 2010), calling for a perspective that privileges material culture as important in its own right. A major goal of this research is to demonstrate the centrality of material culture, particularly container technologies, to the creation and survival of African pastoralism throughout time and space.

2.9 The Ethnoarchaeology of Mobile Pastoralism

The dearth of archaeologically-focused studies on material culture as it relates to the mobility, ecology, and sociality of pastoralist societies might be considered surprising, given the long and complex history of ethnoarchaeological research on the African continent (MacEachern 1996). A large body of ethnoarchaeological literature on African pastoralism does in fact exist, yet these studies have so far been of limited relevance to our understandings of ancient African herding societies. This section will, in part, examine why. I will first discuss ethnoarchaeology in terms of both theory and method, and then review the literature (primarily from Africa) that *does* exist on pastoralist material culture.

Ethnoarchaeology has always been, on its most basic level, about the relationship between people and things, and how that relationship might be manifested in the archaeological record. There is no lack of written opinion about what “ethnoarchaeology” should or should not be on a more theoretical level (Agorsah 1990; O'Connell 1995; Roux 2007; Skibo 2009), but it is important to note that theoretical perspectives on ethnoarchaeological analogy-building have shifted and changed throughout the years (see Stahl 1993). In its earliest iterations, ethnoarchaeology was considered an important source of background information: Ethnographers of “traditional” societies, having held no interest in archaeology, had for the most part neglected to record ethnographic details on material patterning that might have informed archaeological understandings of life in prehistory (Gould and Watson 1982; Kleindienst and Watson 1956). Watson (1979) emphasized the importance of ethnoarchaeology as a source of interpretive hypothesis that could be tested in the archaeological record. Binford (1980, 2001) also repositioned ethnoarchaeology within archaeology, arguing for its use as a means to build middle-range theory that explicitly links behavioral observations in the present to the patterning of material evidence as seen in the archaeological record. A great deal of the early ethnoarchaeology in Africa followed this positivist perspective; work among hunter/gatherers examined resource procurement, meat sharing, and similar topics to better interpret remains at early hominid sites (Isaac 1978; Lee 1979; Lee and DeVore 1968; Yellen 1977).

In many respects ethnoarchaeology should still be seen, I think, as necessary in the production of background information on topics otherwise overlooked in the ethnographic literature. In some ways my doctoral research is designed to expand our

understanding of pastoralist material culture, for example, by documenting it. As an Africanist ethnoarchaeologist, however, I must take Paul Lane's (2005) critique of this discipline to heart. I assure the reader that my project is not simply some search for modern "Stone Age" equivalents to what I believe ancient pastoralism in Africa must have been like. Rather, I follow Wylie's (1985) approach, creating ethnoarchaeological analogies as one tack that can be used in triangulating with multiple independent lines of evidence to arrive at some objective understanding of the past. As Gifford-Gonzalez notes, "If we recognize that analogies are more warranted if based on systematic examination or causal relations, we must employ ethnographic evidence to move us beyond facile gender and cultural stereotyping, to locate those enduring and universal facts of pastoral life to which all groups and households engaged in the keeping of herds and flocks must respond" (1998:123). Stahl (1993) suggests renewed emphasis on comparative approaches (examining points of difference between ethnographic cases and the archaeological record), rather than interpretive approaches (mapping ethnographic details onto similarities seen in the archaeological record, effectively projecting the ethnographic present onto the past).

Africanist case studies have been especially successful and influential in the subfield of ceramic ethnoarchaeology (for reviews see Hegmon 2000; Longacre 1991; Stark 2003). Many of these have been holistic studies of specific ceramic traditions, and most have focused on ceramic production in settled agricultural villages (Arthur 2006; David and Hennig 1972; Gill 1981; Krause 1985; Wandibba 2003). *Chaîne opératoire* approaches have been used in more specific technological research on ceramic manufacture (Ahmed 1986; Livingstone Smith 2000; Wayessa 2011). Numerous other

studies have addressed theoretical issues regarding identity and ethnic boundaries (Dietler and Herbich 1989; Gosselain 2000; Herbich 1987; Mayor 2010; Sampson 1988). My project draws inspiration from each of these studies on ceramic production, while seeking greater engagement and integration with existing archaeological literature on both consumption and food technologies more broadly construed.

I share a recent view that ethnoarchaeology should also be considered a way to “refine the background knowledge that archaeologists use to interpret the past by conducting cross-cultural studies that allow them to gaze critically back upon the discipline, its methods and its theories” (Cunningham 2009:123). This is a useful perspective in the Samburu case, particularly in addressing *why* the theoretical literature on pastoralist material culture as seen in the archaeological record is lacking in both depth and reach. The following sections detail the limited ethnographic and ethnoarchaeological research on pastoralism and material culture that has been conducted thus far. Until we can begin to develop middle-range theoretical models derived from a more robust understanding of pastoralism as it exists today, I do think that pastoralist archaeology will continue to be accorded only minor relevance to broader debates about the history and significance of food production.

2.9.1 Pastoralist Ethnoarchaeology: Previous Research

Ethnographers of pastoralist societies throughout the world have noted and described personal and household goods, from clothing and other adornment to containers, tools, weapons, and architectural structures. Scandinavian scholars (Ferdinand 1993; Mortensen 1993; Nicolaisen 1963; Nicolaisen and Nicolaisen 1997) in the early and mid-twentieth century collected a great number of objects representing pastoralist

material culture in the Near East and Africa “as if they were doing Old World archaeology among living people” (Young 1994:984). But heavily descriptive ethnographic approaches have long been out of fashion in British and American social and cultural anthropology, and our archaeological understandings of early pastoralism around the world have, I believe, suffered as a result.

Yet pastoralism occupies a central place as a subject in the history of ethnoarchaeological research, and in fact two of the most famous studies of pastoralist material culture have both featured Samburu as cases studies. Hodder’s (1982) work with Samburu and El Chamus pastoralists in northern Kenya about the creation and negotiation of ethnic boundaries through personal adornment and other types of material culture of course proved foundational to the post-processual movement. Larick’s (1985, 1986a) work on Samburu spear points likewise contributed greatly to the archaeological discourse on style. As important as these two studies have been to the generation of archaeological theory, however, the conclusions drawn from these studies are not often applied to archaeological analyses of mobile pastoralism *per se*. Only relatively recently have archaeologists (including Aldenderfer 2001) called for ethnoarchaeological research that sheds light on animal domestication processes and social transformations associated with the origins and history of herding societies.

Other ethnoarchaeological research on pastoralism has been focused largely on the description and documentation of pastoralist campsites and associated material culture (Dransart 2002; Kuznar 1995; Lepekoane 1974; Simms 1988; Tallam 1984); Neilsen (2001) has examined Andean pastoralist caravans. From a household-level perspective such research often includes campsite inventories that detail what people

have in their houses and what traces might remain when they move (Ammerman et al. 1978; David 1971; Mbae 1990; Robbins 1973; Robertshaw 1978). General consensus seems to be that herders rarely have much, and rarely leave much behind. Other ethnoarchaeologically-relevant studies have focused instead on campsite locations and factors that determine abandonment (Banning 1993; Banning and Köhler-Rollefson 1992; Creighton and Segui 1998; Webley 1986; Western and Dunne 1979). Pastoralism has indeed been examined extensively from an even broader landscape perspective (Chang 1993a, 2006; Chang and Tourtellotte 1993), and these types of studies have found immediate relevance now that GIS technology has facilitated larger-scale archaeological investigations of pastoralist mobility and settlement patterning (e.g., Frachetti 2006, 2008a). Geo-ethnoarchaeological research has led to better methods for detecting former livestock enclosures (Brochier et al. 1992; Shahack-Gross et al. 2004; Shahack-Gross et al. 2003), and studies of rodent commensalism among the Maasai may help in the inference of past residential mobility (Weissbrod 2009, 2010).

Other ethnoarchaeological studies on mobility and material culture, particularly ceramic production, are worth briefly mentioning here. Barnard's (2008) experimental research demonstrates that the production of finely made vessels by nomadic populations is no doubt possible under certain conditions. Kent's (1992) ethnoarchaeological data from the American Southwest support the assumption that nomadic peoples generally have fewer possessions than more sedentary peoples. Her research likewise indicates that sites occupied for longer durations should contain more diverse material culture assemblages. Kent's research is also interesting for her observation that the *anticipated* mobility of a group is more important in determining the material goods it collectively

carries than is the group's *actual* mobility (Kent 1992; Kent and Vierich 1989). Although numerous ethnographic and archaeological studies have demonstrated that mobility does not always prevent the development of ceramic technologies, archaeological understandings of mobile societies – hunter/gatherers, pastoralists, and agriculturalists alike – are still hampered by a dearth of information on how pottery production and use is integrated into the lives of these mobile groups.

I cannot name any ethnoarchaeological studies that address pastoralist *versus* hunter/gatherer archaeological signatures. However, a few studies have examined pastoralist versus agriculturalist material culture. Tomka (2001) presents an ethnoarchaeological study of pastoralist *versus* agriculturalist tool use in Bolivia, and both Ahmed's (1986) research in Somalia and Bradley's (1992) research in Sudan find that pottery used by pastoralists often differs in forms, functions, and quantities from pottery used by other groups. Rebecca J. Bradley, for example, found that agriculturalists in her sample did have a greater number of material objects overall. In the pastoralist groups, however, pottery represented a much higher percentage of overall household assemblages. There were, in addition, marked differences in both the general forms and stylistic elements of pottery used by the pastoralist and the agricultural groups. For example, the pastoralists had more globular cooking pots, more constricted-necked cooking pots, and more plain-necked pots. The agricultural groups had more globular storage pots, and more open-mouthed cooking pots. Although Bradley convincingly demonstrates that there *are* differences in pastoralist and agriculturalist material culture, she devotes little time to explaining just *why*. She does, in the end, succeed in identifying an important pastoralist component in early Kushite history, but her conclusions are

largely based on settlement pattern and climatic data rather than on her ethnoarchaeological findings about material culture.

2.10 The Samburu Ethnoarchaeological Project

I spent one year living with Samburu pastoralists in north-central Kenya (see map on page 46, Figure 3.1) to examine relationships between material culture, mobility, and pastoralist subsistence practices. Samburu served as an excellent case study for a number of reasons, most notably the analogical relevance of current and recent Samburu life to studies of ancient pastoralist societies that lived in similar environmental settings. Samburu still, for the most part, sustain at least an ideological dedication to mobile pastoralism as a way of life, and they continue to celebrate traditions such as potting and the carving of wooden milk containers even as mass-produced goods are becoming more common. I do not think that the results from this case study are by any means universally generalizable, but I do see this research as providing an important source of ideas about topics almost wholly neglected in the ethnoarchaeological literature thus far. Ethnoarchaeological methods, such as those I will describe in the following chapter, can and will be used to generate – for the first time – culturally-informed, regionally-sensitive, and ethnographically-grounded hypotheses about pastoralism and material culture as seen in the archaeological record.

3.1 Introduction to the Study

In this chapter I introduce the study in more detail and describe the ethnoarchaeological methods I utilized to gather information about Samburu material culture. I then present basic background information on Samburu society, culture, and ecology as previously discussed in existing anthropological literature.

Overall my efforts were focused on two distinct yet related goals, understanding household material culture as related to mobility, and understanding household material culture as related to pastoralist subsistence practices. I gathered a series of quantitative, cross-sectional data on household kitchen assemblages as they exist in the present. To do this I used a series of structured interviews, aiming to create a snapshot of Samburu container use throughout the region. This information speaks to regional variability in subsistence practices, mobility, and household economics, and allowed me to hypothesize as to how household material culture assemblages in Samburu have changed as some families have settled down and started to farm. Throughout the dissertation I emphasize the importance of ethnographic data to contextualize patterns seen in the production, consumption, and discard of ceramics and other types of material culture.

I also wanted to produce an account of how Samburu have used, now and in the past, archaeologically-recoverable technologies such as pottery and grindstones. “The past,” as always, remains a difficult time period to demarcate. As few as one or two generations ago, communities throughout Samburu were generally more residentially

mobile and there was much greater reliance upon livestock in the form of milk, blood, and meat for subsistence. I recognize that “pure pastoralism” has always been a romanticized myth, and I did not set out to recreate some bucolic past untouched by change. Nor was I focusing on recovering exact historical details of changes through time. Rather, I sought to understand *Samburu* perceptions of the past, and how pottery and other containers had contributed over time – in their eyes – to the creation and development of Samburu society as known today.

I spent approximately three hundred person days in Samburu over the calendar year 2009. I was able to sample every month except for July, when I left temporarily to join an archaeological project examining early pastoralism in Turkana. Throughout this period in the field I was accompanied by my research assistant, Prame Lesorogol, a Samburu elder from the Lorroki Plateau. Prame had previously worked as an assistant for Professor Carolyn Lesorogol, his sister-in-law and the anthropologist at Washington University in St. Louis who introduced me to Samburu as a potential research site. Prame had also worked for the Farm Africa Pastoral Development Program (PDF) as an expert on camels, and both his highly-respected status within the Samburu community and his outstanding research skills were critical to the success of my project.

During my time in Samburu I was based at the Mbaringon Group Ranch on the Lorroki Plateau, near the town center of Kisima and a short walk to the Kirisia Hills and the landmark known as Naibor Nkeju (“White Leg”), an oddly-shaped outcrop. I was based at the family home of Professor Lesorogol and her husband, Councillor Lolkitari Lesorogol. They have a Western-style house supplied with solar-powered electricity and a large tank for rainwater. Adjacent are a number of Samburu-style homes, constructed

from wooden poles and dung plaster, where the Councillor's mother, brothers and sisters and their families, and other close relatives all live. I was given my own comfortable and relatively private living space, in a tiny one-room building in the Councillor's backyard that had once been a classroom for their three children. The Councillor's house is a center for social activity and politics on the group ranch. A constant stream of family and friends passed through this homestead, and I learned as much about Samburu culture sitting at the Councillor's dining room table as I did on my travels farther afoot. Weeks at a time, throughout 2009, were spent in other locations across Samburu as I conducted interviews and tried to get balanced regional perspectives. I was always warmly welcomed into people's homes for tea and conversation, and I spent many a comfortable night asleep in my tent pitched just inside a cattle enclosure.

As an ethnographer, my greatest priority was to learn as much as possible through participant observation about Samburu culture and history. I lived in a Samburu community, I attempted to learn as much of the Samburu language as I could in the ten months total I had in the field, and I spent a great deal of time learning the rhythms and daily routines of Samburu life best understood through cultural immersion. I also utilized a number of different methodological strategies, including structured and unstructured interviews, as part of this participant observation to gather as much specific information about my research questions as possible.

3.1.1 Structured Interviews

From January until August of 2009, I conducted structured interviews with 116 women, each from separate households across Samburu, to obtain a snapshot of current family demographics, economics, and container use. I focused my research efforts on

three culturally and ecologically-diverse areas within the Samburu administrative districts. I chose to interview members of households on the lowlands near the town center of Latakweny, the Mbaringon Group Ranch on the Lorroki Plateau near the town of Kisima, and the highlands in Siambu near Porro. Thirty households in each area were selected for broadly-directed surveys. Sampling strategies will be discussed in Chapter 7. Members of households from the Dorobo former hunter/gatherer community on the Lorroki Plateau near Kisima were also interviewed as an independent sample (n=26) for comparative purposes.

Appendix II shows an example interview form. Notice that a broad range of data was gathered during each interview. I began with household-specific questions about family demographics, and continued with questions about livestock holdings, patterns of mobility and grazing, reliance on cultivation, and so on. My main interest was in determining correlations between these variables and the numbers and types of containers and other food-related material culture found in each house. I asked my respondents to count and describe the various types of containers found in their kitchens, from aluminum tea cups to wooden milk containers to clay pots. Chapter 7 explains my interview methodologies in more detail and reports specific results from these questions. A long-term study of diachronic change in Samburu household dynamics and container use would be interesting but will require another round of research. I concluded each interview with a final set of personal questions about clay pots. If a woman currently owned a clay pot I asked to see it, measure it, and photograph it, and I asked a series of questions about the “biography” of the pot – where it was made, how it was obtained, how it had been used, etc. Appendix I contains a catalog of these pots. Otherwise, I

simply tried to determine how much each woman knew about potting and potters in general. Throughout these interviews I often asked women to elaborate on their answers, and the interviews became a valuable source of information that reached far beyond my pre-written questions.

After conducting several initial structured interviews in the highlands, I decided that I needed to include questions that would give me broader, regionally-specific background information on Samburu subsistence and diet. For at least one household in each region I asked detailed questions about the seasonality and availability of various foods, the occasions on which those foods would be eaten, and what types of kitchen goods were necessary to prepare them. I added an ethnobotanical component to each interview when it became apparent that wild plant foods, herbs, and medicines were a critically important yet understudied aspect of Samburu life across the three survey areas. I will discuss the specific ethnobotanical methods I used, such as cultural domain analysis, in later chapters. For now I would note that these later additions to the structured interviews provided invaluable when later analyzing regional variability in Samburu uses for material culture. I eventually returned to the original households interviewed in the highlands to complete my sample.

These structured interviews were all directed towards married women. This was done for numerous reasons. I was seeking detailed information about the material cultures of kitchens and the preparation of food, both of which are women's domains. Given time constraints I was only able to interview women who were in charge of food preparation for their households. For some aspects of the survey, one would certainly expect different results if men or other members of society had been targeted for surveys

instead. In terms of the ethnobotanical component of research, for example, bias might be particularly acute for data collected on herbs. It is primarily young men who add these barks and roots to their soups, and thus older men likely have far more knowledge about these plants than will be reflected in this chapter.

For all structured interviews, each person was told about the project and verbal consent was obtained. Although I very rarely asked about sensitive issues, I have respected the privacy of interviewees in the document by not reporting names other than those of my research assistant, close friends within the Lesorogol family, and several potters who were proud of their craft. Each woman interviewed was given half of a kilogram of sugar and a packet of tea leaves as a culturally appropriate token of appreciation for the time and hospitality that were graciously given to me as a visiting researcher. My research assistant and I were nearly always served tea upon arrival as guests in women's homes, and I also thus hoped that providing a small amount of sugar and tea would offset any cost our visit may have incurred. I was also constantly giving sugar and tea to anyone else who requested it in an effort to be a good neighbor; I can say, though, that I was given more cups of sugary tea than I could ever repay.

3.1.2 Semi-structured Interviews

In addition to the structured interviews focused on households, I conducted fifty-one semi-structured interviews on a variety of subjects related to mobility, subsistence, and/or material culture. Most of these interviews were with older women, who were asked about Samburu pottery use, grindstone use, and other aspects of domestic life past and present. Oral histories, those recollections of events experienced by the people that tell them, only go back so far, and there is a dearth of archival material on pottery and

other types of pastoralist material culture from northern Kenya. Therefore much of the information in this dissertation was collected using ethnohistorical methods, particularly the documentation of oral traditions. The two elder women of the Lesorogol family, Mpashie Lesorogol (my research assistant's mother) and Noosoroitare Lesorogol (Mpashie's co-wife, and mother to my host in Samburu, Lolkitari Lesorogol), became particularly important cultural consultants as I conducted this research, and my understanding of Samburu life was immeasurably improved by their willingness to share their time and knowledge with me. Potters were also interviewed about potting, for example, and men from blacksmithing families were interviewed about furnace construction and smithing. Other elder men from both herder and hunter/gatherer families were interviewed about meat-feasting in rockshelters and caves, and elder women were interviewed about foraging for wild plants. An elder from a family in Siambu known for growing gourds and making containers from them was interviewed about his family's craft. The audio from each of these interviews was digitally recorded, and interviews of particular importance were later transcribed² and translated by my research assistant.

3.1.3 Unstructured Interviews, Mapping, and Other Field Methods

Extensive unstructured interviews were also conducted whenever opportunities presented themselves. These interviews were rarely taped, but I did take detailed notes when possible. Beyond these unstructured interviews, the 116 structured interviews, and the fifty-one semi-structured interviews I conducted, I also had innumerable discussions with Prame, the Councillor, and other Lesorogol family members about my research, and

² There is no standardized way to transcribe and spell words spoken in the Samburu language, a northern form of Maa. This is why, for example, one will find in the historical and academic literature dozens of different ways to spell "Mt. Ng'iro" and the "Lorroki" Plateau. In this dissertation I have generally spelled words as my research assistant advised.

those discussions shaped more than anything my understanding of Samburu lifeways and culture. Other research methods were often opportunistic and designed on the fly, such as when I convinced a car-load of elders to ride with me as I criss-crossed the Lorroki Plateau in my Suzuki. They directed me to the locations of bomas they lived in as children, and I was able to map with a GPS patterns of residential mobility in the area during the mid-20th century. Mapping of rockshelters used by young men for meat feasting also became a priority late in the project. On several occasions I brought elders from both former hunter/gatherer and pastoralist Samburu communities to these rockshelters so that they could show me where they had once slept, built fires, and eaten. Differential spatial patterns of use between the two communities became obvious. I mapped the physical features of six different rockshelters, all in or near the Kirisia Hills, along with spatial patterns of use at each. Not all of these maps will appear in this dissertation, but these efforts certainly laid the groundwork for what I hope will be future archaeological excavations that complement these ethnoarchaeological data and contribute new information on the prehistory of pastoralist occupations in the region.

3.1.4 Region-wide Reconnaissance

Every effort was made to obtain information that might be regionally specific firsthand, particularly in terms of pottery production and use. I visited and interviewed as many potters across Samburu as possible, and I found and recorded as many clay pots as I could. Much of this reconnaissance was done during the structured interview process, but I also made several separate trips to locate potters and to interview men and women about ceramic traditions. Prame and I visited nearly the entire Samburu region in my small Suzuki, traveling as widely as the sometimes frightening security situation at the

time allowed. In total we interviewed seven women who had ever made pots in the past, three near Naibor Nkeju on the Lorroki Plateau, two in Wamba, one near Mt. Ng'iro, and one near the Ndoto Mountains. None were still actively making pots, and so I commissioned potters near my home on the Lorroki Plateau to make several pots for me. I hoped to witness as much of the potting process as possible, and I hoped that my interest in pottery would encourage potters to revive the tradition.

3.2 A Note about Language and Time

All research was conducted in English. My research assistant would translate my questions into Samburu, and then translate responses back to me in English. I am more proficient in Kiswahili than in Samburu, but it became clear to me early on that most Samburu women and men, especially elders, either could not speak Kiswahili or were somewhat uncomfortable doing so. My research assistant had had extensive experience translating for other anthropologists and I trusted his ability to accurately convey both my questions and the responses. The ultimate decision to work in translation was made for several reasons. The most pressing issue was time; I had roughly ten months to conduct the entire project and it would have taken me at least that long, studying the language full-time, to master Samburu well enough to conduct the research in this language. Throughout the course of the year I became proficient in greeting people, at least, and was eventually able to understand the language on its most basic level. I fully admit that this dissertation would be better and more insightful had I learned the Samburu language better myself. I look forward to the day when I can speak Samburu well enough to revisit

Samburu, and ask an old woman about pots, and get an answer that provides perception beyond that which is presented here. In the meantime, all mistakes are my own.

I also recognize that the best ethnoarchaeological research comes from extended immersion in fieldwork. Would that I could go back for longer than the ten months I spent in the field. In the end I could have spent years more time in Samburu without running out of new things to learn. The extent of the data collected was only possible given the formidable skills of my research assistant. I cannot overstate the importance of Prame's work and insight to the creation of this document. I also received a great deal of intellectual and logistical support from Dr. Lesorogol, and I hope to return to her family's home in Samburu over and over for the rest of my life.

3.3 The Project's Historical Context

Father Marco, a Catholic priest living at a mission about an hour's drive from Kisima, responded with great surprise when I informed him of what I was studying. Father Marco had lived in Samburu for ten years and never knew that Samburu had pots, or that they had ever had them in the past. Other ethnographers before me (Langenkamp 2000; Tallam 1984) had noted that potting among Kenyan pastoralists had become less common as ceramic vessels were being replaced by inexpensive aluminum and plastic containers for cooking and storage. Today there are no potters actively making pots for sale or exchange within the Samburu community. Decades have passed since pots were routinely produced and purchased for household use, and elderly potters no longer pot except under very special circumstances. The younger members of potting families have not learned this craft and in many cases are pursuing formal schooling or alternate means

of employment. As pots made in the 1980s and 1990s are now breaking they cannot be replaced. Although the few people still in possession of Samburu-made pots do take tremendous pains to protect them, it is clear that within the next decade there will be very few if any of these pots remaining outside of museum contexts.

It cannot be emphasized enough that the last several decades have seen tremendous political, economic, and cultural changes in Samburu. People, except for some in the lowlands, no longer live highly mobile pastoralist lives structured around milk, meat, and blood as it appears they once did. In terms of household material culture, plastic containers, metal cooking pans, and mechanized maize mills have gained widespread use. Pre-Industrial equivalents are still treasured but are largely kept private; leather bags are held on to for special occasions, one clay pot might be kept in storage and occasionally brought out for ceremonies. Those who hold a primitivist perspective on African pastoralist societies may have seen few prospects for ethnoarchaeological research on containers, food preparation, and consumption. There were, in fact, many areas where this research provided insight into processes of social change of relevance to archaeologists, above and beyond that originally intended in the designing of this project. I was privileged, in a way, to work in Samburu during this transformational moment.

3.4 The Study Context: Background Information about Samburu

In many ways the Samburu, along with their close relatives the Maasai, are the archetypical nomadic pastoralists of the African savanna. Warriors, in their long red robes, lead their cattle across the plains in search of good pasture. This vignette, so commonly pictured in coffee-table photography books, seems to come from time

immemorial. Yet Samburu history has been characterized by a great deal of economic and ethnic fluidity. They and other herding and hunting/gathering groups living in the grasslands and hills of northern Kenya have long maintained flexible social and ecological strategies in order to survive in a difficult and highly marginalized area. In this chapter I will present an introduction to the people we now know as “Samburu,” drawing from a large body of historical and ethnographic literature already written about them. For my part I will emphasize the ecological aspects of Samburu pastoralism, and try to contextualize the Samburu communities within which I worked as part of a dynamic and regionally-variable social, economic, and ecological landscape.

3.4.1 History and Social Organization

The Samburu³ are pastoralists in northern Kenya (see Figure 3.1), numbering over 200,000 (Oparanya 2010), who rely on cattle, sheep, goats, and occasionally camels for most of their subsistence needs. The Samburu hold no direct historical connection to archaeologically-known groups in Kenya during the Pastoral Neolithic. Historical linguistic evidence suggests that Eastern Nilotic peoples – speakers of Maa, and ancestral to the Samburu, Maasai, and several other pastoralist groups now found in eastern Africa – emigrated from the Sudanese Nile Valley into eastern Africa during the Pastoral Iron Age some time during the first millennium AD (Bonte and Galaty 1991; Ehret 1971; Galaty 1991). Maa-speaking societies initially appear to have centered around Lake

³ The Samburu have been historically identified, as an ethnic group, by a number of different names. In the texts of early explorers to British East Africa the Samburu are referred to as the “Burkeneji” (or Loiborkeneji), meaning “people of the white goats.” Later colonial writings refer to the Samburu as the “Samburr.” This term is presumably derived from the Maasai word “sampur,” or a type of leather bag carried by Samburu women. The anthropologist Roy Larick refers to the Samburu as the “Loikop,” the word Samburu use for themselves, meaning something like “people of the land.” Using this term in academic writing, however, invites confusion as a number of Maa-speaking groups (past and present) are known as the Loikop or Iloikoip as well.

Figure 3.1 Overview map of Samburu, Kenya

Baringo, but this nucleus later fragmented as Maa-speakers expanded throughout the Rift Valley Region of Kenya and Tanzania. Samburu split from other Maa-speakers by the end of the sixteenth century, staying in the north near the Charangany Hills in the Baringo Basin while Maasai went farther south. After a series of conflicts with Turkana and other groups in the mid-nineteenth century, Samburu moved to the El Barta plains near Mt. Ng'iro (defeating the Boran in the process) and eventually the Lorroki Plateau.

Pastoralist groups in northern Kenya during this time period maintained fluid ethnic identities, highly mobile settlement systems, and complex economic arrangements featuring trade and exchange with neighboring groups (Sobania 1988, 1991). Subsistence strategies employed by groups such as the Samburu varied with time and space but could be considered diverse, as foraging, fishing, herding, and in some places farming were all important elements in a broader economic system. By the middle of the twentieth century, a highly specialized type of cattle pastoralism came to dominate much of the eastern African landscape (see Bonte and Galaty 1991), Samburu included. Although economic strategies in Samburu remain greatly flexible, cattle today still occupy space at the very center of their economic and social lives (Spencer 1965, 1973). Their neighbors and close allies to the northeast, the Rendille, are primarily camel-keepers, and there exists a group known as the Ariaal who live in between the Samburu and Rendille and follow cultural traditions from both. Other neighboring pastoralist groups include the Pokot and the Turkana. The Turkana in particular maintain an often antagonistic relationship with Samburu, and frequent cattle raiding between Samburu and Pokot has more recently become a serious problem (McCabe 2004; see also Straight 2009).

3.4.2 Social Organization, Daily Life, and Guiding Beliefs

I will only briefly outline Samburu social organization. Most broadly, Samburu society is organized in two moieties, the Nkishu Narok (Black Cattle) and the Nkishu Oibor (White Cattle). These moieties are further subdivided into eight total clans. I worked most closely with members of the *Lpisikishu* clan, and I admit that my opinions about what constitutes overall “Samburu” culture may therefore be biased somewhat. In his classic ethnography, Paul Spencer (1965) describes Samburu society as a gerontocracy in which elder men maintain a great deal of social control. The age-set organizational system indeed fundamentally structures Samburu social life. Samburu men pass through a number of life stages marked by important ceremonies, such as the *Imuget* circumcision ritual that marks a boy’s initiation as an *Imurran*, often transcribed as “warrior.” After a period of approximately fourteen years, Imurran will marry and be considered elders, and a new age-set will be initiated. Samburu practice exogamous, patrilocal patterns of marriage and women are typically circumcised just before the marriage ceremony. After marriage, Samburu women will go to live with their husbands’ families, often some distance away. Polygamy is fairly common, especially for wealthier men.

Samburu society is heavily and overtly patriarchal, but as many scholars note, women are central to Samburu domestic life, including the care and management of livestock (Hodgson 2000). Women often look after the small stock and calves, and milk the cattle morning and evening. They also do the hard work of collecting firewood and water, they prepare food for everyone except Imurran, and they raise the children. Imurran protect the cattle, often taking them to graze long distances from home. Older

men make important decisions about grazing and politics that affect both their families and the community at large.

The rhythms of daily life in Samburu are guided by belief in a divinity referred to as *Nkai* (for in-depth discussion of Samburu religion see Straight 2007a, Spencer 2011). *Nkai* exists everywhere in the Samburu natural world, ensuring the survival of cattle and people alike: The word *nkai* can also mean “rain.” At risk of great oversimplification, Samburu men and women honor *Nkai* by striving to live “proper” Samburu lives, taking care of family, livestock, and home by behaving only in recognizably respectful ways. Bilinda Straight (e.g., 2007a) has written at length about the relationship between Samburu spirituality, practice, and the objects of everyday life. Her work has greatly influenced my own understanding of how material culture, including pottery, is both practically and ideologically integrated into Samburu lives. I will return to these issues throughout this work.

3.4.3 *Geographical Setting / Regional Diversity*

Figure 3.1 showed a map of Samburu, Kenya, an area covering approximately 21,000 square kilometers in the Rift Valley Province. “Samburu District” previously existed as a single administrative unit, demarcating the general region occupied by the Samburu people. Recently, however, Samburu District was split into three smaller constituencies: Samburu North District, Samburu Central District, and Samburu East District (not pictured on map). I will nonetheless use the term “Samburu” to refer to these three districts combined, which are still overseen by one locally-elected council.

The Samburu landscape, located in a semi-arid part of north-central Kenya, is dominated topographically by the Lorroki Plateau to the southwest, the vast and very dry

lowlands to the east and a series of better-watered highland areas including the Kirisia Hills at the edge of the Lorroki Plateau, and the Mathews Range and the Ndoto Mountains that both run roughly north-south on the eastern edge of the district. Mount Ng'iro, to the far north near Lake Turkana, is a place of great cultural and ritual significance to the Samburu people. The administrative capitol of Samburu, Maralal, lies at the foothills of another highland area northwest of the Lorroki Plateau. To the far west of the district lies the Suguta Valley and escarpments that plunge to the Great Rift, which extends south through Kenya and Tanzania. A number of permanent and seasonal rivers run through the lowlands, including the Seiya and the Milgis. The river known as the Ewaso Ng'iro serves as the southern border of the district.

The topographic and climatic diversity of Samburu results in a high degree of ecological variability as well, from the scrub desert of the lowlands to the evergreen forests of the highlands (see Shaabani et al. 1992). The central lowland basin is characterized by vast bush grasslands, and despite its low average annual rainfall (250-500mm⁴) serves as some of the most important grazing land in the district. The Lorroki Plateau and the highlands, with elevations rising in some places to over 2,000 meters, are much cooler and wetter with 500-700mm average rainfall per year. The Lorroki Plateau is considered to have some of the best rangeland in the district with its favorable climate and fertile soils, although East Coast Fever is endemic. The Mathews Range and the Ndoto Mountains have the highest average rainfall totals in the district (750-1250mm), but to the east are extremely arid and largely uninhabited plains. A wide array of fauna including elephants, giraffe, buffalo, zebra, and other assorted wild game can be found in

⁴Source: Arid Lands Resource Management Project II, <http://www.aridland.go.ke/inside.php?articleid=248>

certain areas of the lowlands and the Lorroki Plateau. The Samburu National Reserve, along the Ewaso Ng'iro, is a well-known safari destination for tourists and is off-limits to Samburu grazing and settlement.

Seasonal patterns of rainfall are singularly important to Samburu life, as livestock depend on the rains to provide them good pasture. Figure 3.2 shows average yearly rainfall totals, with brief descriptions of seasons; note how patterns of rainfall vary throughout the Samburu region. During August, for example, it typically only rains in the highlands, and during November and December it typically only rains from Kisima down to the lowlands.

Figure 3.2 Average yearly rainfall in Samburu,⁵ with descriptions of seasons (rainfall data source: Arid Lands Resource Management Project)

⁵ Data are from reference years 2002-2008; note that rainfall during those years was exceptionally scarce, leading to drought conditions that had reached emergency levels by 2009. "Typical" amounts of rainfall

3.4.4 *Mobility, Subsistence, and Change*

There is rarely enough rainfall at any one place to provide enough grass for the sustenance of livestock throughout the entire year, so herds must be moved on a regular basis. It used to be that entire households – both families and the houses themselves – would be picked up and moved in some cases weekly, certainly monthly, in search of pasture for their animals. In the 1960s households were moving approximately every five weeks (Spencer 1973). They might have remained in a relatively small area for the most part, but during longer periods of pasture shortage they could move long distances across the district or beyond. Cooperation between Samburu living in different parts of the districts was thus (and still is) critical: Samburu from the lowlands needed access to pasture in the highlands during certain parts of the year, and vice-versa.

Today with few exceptions only cattle are moved regularly, mostly by *Imurran*. Houses can now be occupied for years or even decades at a time, although this does vary depending on region. In 2009, for example, some households in the lowlands were moving every two or three months due to very serious drought. On the Lorroki Plateau, during the summer of 2009 many families moved temporarily to other houses in areas with better pasture, and then returned once the rains started falling towards the end of the year. Very few families in the highlands now move. Patterns of livestock management have also undergone dramatic changes, in large part due to a rapidly expanding population. According to census figures, the number of people in Samburu has nearly tripled over the last thirty years, rising from approximately 80,000 in 1979 to over

should thus be considered much greater than those shown here, although accurate, long-term meteorological data from northern Kenya is lacking.

220,000 in 2009. There is less land available for grazing, and people are no longer able to maintain vast herds of animals as they might have during earlier times⁶.

Pastoralism in Samburu (and indeed much of northern Kenya) is characterized by relatively regular periods of drought and dramatic stock losses, and it is not uncommon for less-wealthy Samburu to suffer greatly during those times. Some livestock may need to be slaughtered, and the meat and soup will sustain people until herds can recover enough to give milk. Wild fruits and other plants are the other important resource during drought, and although hunting wildlife is illegal it still sometimes happens in times of great stress. My fieldwork in 2009 occurred at the tail end of an extremely severe drought, and elders observe that weather patterns are becoming increasingly erratic (Boruru et al. 2011). Entire herds had been wiped out due to starvation, and most of those who survived were grazing on pasture quite far from home. Raiding was also responsible for substantial livestock losses, and even good pasture in border areas was deemed unsafe to use. Today the biggest source of food for Samburu during such times of food insecurity comes in the form of maize and other emergency rations distributed by government and other international agencies such as the World Food Program. Nevertheless during my fieldwork period people in more remote areas of Samburu were still facing serious threats of malnutrition and starvation.

In eastern Africa, numerous pastoralist societies including Maasai, Borana, and Samburu are becoming increasingly economically diversified as communities are forced to adapt to losses of land, population growth, and persistent conflict (Boruru et al. 2011;

⁶ Sperling (1987b:175) presents data showing that cattle in Samburu numbered as high as 400,000 mid twentieth-century. By the 1980s fewer than a quarter of that number remained. I suspect that this downward trend has continued (if not accelerated) in recent decades; census data would need to be analyzed to confirm or deny.

Fratkin 2001; Lesorogol 2005, 2008). Fratkin documents how the adoption of farming practices and participation in the wage labor system, for example, are having profound effects. These include greater social and economic inequalities and poorer nutritional outcomes (see also P. Little 1992 for an Il Chamus case study). Nevertheless, as Lesorogol (2005) discusses, mixed economies in Samburu that include farming and livestock husbandry are emerging as one of the only potentially viable strategies for survival. On the Lorroki Plateau, some women attempt garden-plot cultivation of maize and beans. In the highlands, small-scale farming of maize, beans, and vegetables has been added as a major component of the region's economic system, and some large-scale commercial farming is possible during non-drought years. In the dry lowlands, rain-fed cultivation of food crops is impossible and so pastoralism is still one of the only viable subsistence options.

3.5 Histories of Exchange: Herders and Hunter/Gatherers

A devastating series of famine and epidemics, including rinderpest in cattle and smallpox in humans, swept northern Kenya in the 1890s and 1900s in a period known as the *mutai*, or “disaster.” Some groups such as the Dassanetch were able to survive the *mutai* due to their diverse subsistence base that included agricultural production. Samburu livestock were decimated, however, and the Samburu people who survived were forced to flee to areas around Lake Turkana, Marsabit, and to the mountains found throughout northwestern Kenya. Many Samburu integrated themselves with Turkana, and many more were forced to live with established hunter/gatherer communities, including the El Molo and various “Dorobo” groups, until they could rebuild their herds (see

Sobania 2011). People relied heavily on sheep and goats until their herds of cattle could recover, and small stock remained a common sight in Samburu until around the 1930s. By this point cattle had once again become the central focus of Samburu livestock management, and only recently, perhaps in the last thirty years, have Samburu re-acquired small stock in significant numbers. Sheep and goats today serve as an important resource when drought conditions are too severe for cattle to survive and buying healthy cattle from market is prohibitively expensive.

The British Empire established their rule in Kenya in the mid-1890s with the creation of the East Africa Protectorate. Colonial rule precipitated a series of radical social transformations in northern Kenya as the administration attempted to assert control over pastoralist populations, including the Samburu. Heterogenous groups were separated into discrete “tribal” entities and confined to certain territories. Many Samburu talk about the ways in which the colonial administration tried to separate families, for example, as in the late 1940s when ethnic Turkana living in Samburu were forcibly and traumatically relocated to the Turkana part of the Northern Frontier. This resettlement process, along with the imposition of rigid grazing restrictions, effectively reified previously fluid ethnic identities and disrupted many of the social relationships which existed between and among pastoralists and other groups (Kassam 2006; Schlee 1989). A complex system of trade and exchange, for example, existed in the Turkana Basin during the 19th century. Sobania (1991) writes, “Not only livestock, grain and other agricultural products such as tobacco, gourds and coffee but household and personal objects such as carved milk and fat containers, porridge bowls, sleeping skins, cloth, beads and wild animal hide sandals

also passed from friend to friend in the maintenance of active partnerships” (1991:134).

These partnerships arguably helped to sustain people during the cataclysmic *mutai*.

Interactions between pastoralist and hunter/gatherer communities will be a topic of particular focus throughout this dissertation, having shaped the ethnic and economic landscape of eastern Africa for the last several centuries if not millennia. Historically, Samburu have long had a symbiotic relationship, based on the exchange of honey, milk, and goods such as pottery, with hunter/gatherer groups widely known as the Dorobo⁷ (J. Brown 1989b; Clarfield 1989). Maasai in Tanzania and Kenya have also had similar relationships with Dorobo known more specifically as the Okiek (Blackburn 1973; Kratz 1989). The Gabbra of northern Kenya may have had a similar relationship with a group called the Waata (Kassam 1986; Kusimba 2003; Prussin 1987).

A significant amount of anthropological literature has been produced on Dorobo and their relationships with Maa-speaking pastoralists (Blackburn 1982, 2006; Cronk 2002; Distefano 1990; Galaty 1979, 1982; Kenny 1981; Kratz 1980; Rigby 1988; Spear and Waller 1993). I will only briefly summarize this research here. The Dorobo, traditionally hunter/gatherers, are commonly pictured as living in forests up in the hills, hunting, foraging, and collecting honey while their pastoral neighbors herd livestock out on the plains. Dorobo are probably not, as once thought, remnant groups of earlier and ethnically different populations, although Boran Dorobo and Mukogodo Dorobo might be exceptions (Spencer 1973). Dorobo groups on the Lorroki Plateau are often said to have

⁷ Also commonly written as Ndorobo or Wandorobo. In the Samburu language the term is *Ltorrobo*. “Dorobo” is often considered a derogatory term, but not all Dorobo communities have names for themselves. For clarity’s sake I will refer to the specific Dorobo community near the Kirsia Hills with whom I worked most closely as the “*Loliin*,” meaning “gazelle.” See Spencer (1973:Appendix) for a list of all Dorobo groups within Samburu c. 1900; given their current location I believe the Loliin (as currently known to Samburu in my area) are most likely the group Spencer refers to either as Loliin or as Olkerenye (sometimes, he reports, also called Loliin). The Loliin community call themselves, most often, Ltorrobo.

once been Maasai, remaining in the hills after a group of Maasai known as the Laikipiak were wiped out by Samburu and surrounding tribes in the late 1800s. Whatever their ethnic ancestry, many scholars would argue that Dorobo are populations that have long been integral parts of broader economic systems that include foraging, pastoralist, and farming modes of production (see Spear 1993). Samburu herders do depend on Dorobo for the honey used to make honey beer for ceremonies, goods such as pottery, and safe refuge in the hills during times of disaster.

Other historians and anthropologists have written extensively about identity within eastern African pastoralist societies, examining the ways in which pastoralists are considered (and consider themselves) “egalitarian.” The ownership of cattle is equated with wealth, and thus non-pastoralists such as Dorobo are marginalized as “poor” and are considered non-Maasai, or non-Samburu (see essays in Anderson and Broch-Due 1999; also Galaty 1979; Galaty 1982). Food taboos (for example, against the eating of elephants) and other cultural differences are seen by Samburu as markers that further distinguish themselves from Dorobo. A person who digs, or farms, is likewise said to “eat clay” and be poor. Such attitudes reflect one of many ways Samburu position themselves in moral opposition to people who forage and farm. Nevertheless there has long been some degree of fluidity between pastoralist and hunter/gatherer communities – intermarriage, although not common, does happen, and pastoralists who have lost their livestock again have been known occasionally to join Dorobo communities until they can rebuild their herds. Although Samburu Dorobo are still highly economically and socially marginalized, they are now mostly indistinguishable culturally from the broader Samburu communities within which they live. They speak only Samburu, have long since moved

out of the forest, and have been managing small numbers of livestock for nearly a century. The Loliin, for example, are today a fairly cohesive cultural group that is nonetheless highly integrated into the rest of Samburu society.

3.6 Craft Production in Samburu Society

The organization of craft production within pastoralist societies such as Samburu is a topic of particular interest to archaeological studies of ceramics, lithics, and iron production in the past. Craftspeople and ritual specialists are severely marginalized in Samburu society. As Bonte and Galaty describe, “In many African pastoral societies, one finds endogamous caste groups, artisans, blacksmiths, hunters, fishermen, and even bards and diviners, who are marked by notions of pollution and inequality and viewed ambivalently. In such cases, it appears that internal egalitarianism is acquired at the price of external hierarchy” (1991:24). The *lekonono* (or *lkunono*), for example, are blacksmiths who comprise their own highly stigmatized, endogamous caste group within Samburu society. Until sometime in the middle of the 20th century blacksmiths smelted iron using a blast furnace technique, but today they simply repurpose metals from cars, aluminum pots, and the like. They produce spears and knives, including blades used for Samburu circumcision ceremonies, and perform the circumcisions themselves. Despite their status as social pariahs, then, blacksmiths are critically important to the ritual lives of the Samburu community at large.

The same can be said for potters, who are almost always members of Dorobo families. They are much less stigmatized than blacksmiths, but potting is still seen as an occupation solely for poor people. Potters do marry blacksmiths occasionally, but

members of both groups generally claim little to do with each other. Samburu view pots as indispensable for certain ceremonies, and the honey beer supplied by Dorobo is an important part of festive occasions. Chapter 5 will discuss the social organization of potting in a great deal more detail. For now, I would emphasize the dependency of Samburu herders on Dorobo craftsman, rather than the reverse (A. Smith 1998).

4 Samburu Landscape Use, Subsistence, and Material Culture

This chapter will provide additional information about three aspects of Samburu life: mobility and landscape use, subsistence, and material culture, particularly household containers. Data are drawn primarily from my own ethnoarchaeological fieldwork.

Part I

Landscape Use: Mobility, Architecture, and Samburu Site Types

Ethnoarchaeological studies of African pastoralism have tended to focus on the layout of domestic settlements and the material culture left behind upon their abandonment (David 1971; Mbae 1990; Robbins 1973). These scholars often lament how unlikely it is that pastoralist sites will remain visible in the archaeological record for any length of time, given the ephemerality of most nomadic architecture and a presumed paucity of durable material culture. In this chapter, I will consider the ways in which Samburu use their landscapes at domestic sites and other site types, including isolated forest retreats used by Imurran for meat-feasting and large ceremonial encampments used by the entire community every fourteen years. Chapter 8 will then tie together these data with information presented on material culture, illuminating the possible archaeological signatures of Samburu pastoralism across the landscape.

4.1 Domestic Settlements: Mobility and the Regional Variability of House Types

I will begin with a discussion of mobility and factors that play into elders' decisions about when and where to move their houses and livestock. I will focus on patterns of residential mobility on the Lorroki Plateau, and reconstruct patterns of mobility in the region as they existed during the mid-20th century. I will then consider changes in settlement patterning over the past several decades, and relate these changes to current regional differences in patterns of mobility and the architecture of Samburu homes.

4.1.1 Mobility

Samburu, as with every pastoralist group in eastern Africa, must manage their herds in ways to ensure that livestock get sufficient forage, water, and salt. The voluminous literature on the ecology of African pastoralism emphasizes above all else the importance of rainfall to livestock rangelands. Most decisions about grazing are indeed made to ensure access to grass, and droughts are so devastating because they diminish suitable pasture. In terms of water, cattle are ideally taken to rivers, dams, or hand-dug wells to drink every day, but during dry seasons every two days can suffice. Sheep and goats are typically taken to water every two or three days, again longer in the dry seasons, and camels much more rarely. Water shortages are rarely a problem. Permanent water sources are available throughout the Samburu region even during severe drought, and wells or shallow dams can be dug when needed to ensure adequate supply. Access to salt licks is critical and often overlooked in the literature. The salt lick at Lake Kisima is very well-known, but note that areas surrounding salt sources frequently become overgrazed. A number of other ecological considerations, including hillslope gradients, soil types, and danger from predators (see Western and Dunne 1979), play into decisions made about the

location of settlements. Close access to firewood is also preferred, and proximity to forests during droughts makes it easier for women to fodder the herds.

Spencer (1965, 1973) includes detailed descriptions of settlement patterns in his classic ethnographies of the Samburu. He notes that settlements, at the time of his fieldwork, were more likely to be dispersed and smaller if pasture was limited. Threats of raids from neighboring groups or from wild animals might, however, prompt people to aggregate into bigger settlements for safety. During times of abundant pasture, settlements could be bigger and could remain in one place for lengthier periods of time. Wealth was another factor. A family with large herds would have to move fairly often, as grass in any one area would be rapidly finished. Even now, people who “chase grass” by moving cattle to pasture in risky, insecure border zones are thought better able to build larger herds. People with fewer livestock moved less frequently, although they would occasionally move along with wealthier families to avoid being left by themselves. Elders today look back at this as a time when people worked more closely together, with wealthier families distributing livestock and other help to poorer families in exchange for help with labor.

An elderly woman from the highlands thought back to her childhood and explained to me how her family would move every three weeks or so, walking from morning until night. Spencer (1965) noted that trips could indeed be arduous, particularly for older people and children, and that families could rarely move more than fifteen miles in one day. One household’s belongings could fit on five donkeys, she said, but you could see big herds of donkeys, as many as twenty-five. You would have to find a calm donkey for the children and pots, she said. Families could return to the same places, constructing

very strong huts so that they could be used again upon coming home. Only if it were really dry would people move to the forests. My research assistant's father was once, towards the end of his life, asked to think back and remember how many times he had moved his house over the course of his lifetime. He specifically remembered no less than 110 times. Other elders, when asked, would invariably say that they had moved far too many times to count.

Before the imposition of colonial grazing schemes in the 1950s, patterns of grazing and residential mobility in Samburu were relatively localized, although families would move livestock longer distances to pasture if necessitated by dry seasons or drought. Families from the Lorroki Plateau, for example, might have had to move their houses and herds to the lowlands in November, where the rains of *ltumurin* fall. They might then have moved back to the Lorroki Plateau and stayed from February - June. At that point, they might have moved north of Maralal in anticipation of the highland rainy season, *lorrikine*. Figure 4.1 shows patterns of residential mobility for the very wealthy Lesorogol family on the Lorroki Plateau, c. 1954 and 1956. At this time the grazing schemes had yet to radically disrupt Samburu systems of livestock management (see Spencer 1973:168-198), but people were forbidden to move their houses or livestock to areas occupied by people from other clans. This mapping exercise illuminated the decision-making process behind one family's residential movements during those years, and I would be interested to see similar data from families living in the lowlands and highlands during that time.

Changing demographics across Samburu later forced additional changes in settlement and grazing patterns. By the early 1960s, both human and animal populations

Figure 4.1 Patterns of residential mobility on the Lorroki Plateau, c. 1954, 1956. Descriptions of points can be found on the following page.

1954 and 1956 were the earliest years during which the elder members of the Lesorogol family could remember the exact locations of their family's homes. They were an extremely wealthy family, with around 300 adult cows at that time, 200-300 sheep but no goats, and 30 donkeys. In one huge settlement lived my research assistant's father, his father's 4 wives and their 13 kids, 3 other brothers plus their 7 wives total, somewhere between 23-26 of their kids, and also the grandmother.

1954 was a dry year. At the beginning of the year, British grazing schemes had not yet been implemented. Towards end of year, their father was made area chief by the colonial administration and given priority to stay near Kisima. The following points on the map show residential movements during that year:

- 1 Kelele was the name of this place. Stayed from the *ltumerin* rainy season, around October, until April. This was a good grazing area, and it also had salt. 1km away there were springs with water.
- 2 Seiya. Stayed here from April – June. The grass in Kilele was starting to finish. The Seiya River, with water for people and animals, is about 2km away.
- 3 Noontoto. Arrived in June/July, stayed through the *lorrikine* rainy season until August or sometime in September. Used to get water from an old dam ~1km away. Relatively severe drought, but did not really affect grazing. There was enough grass, and no livestock died. In those days there were fewer people, so people would move where grass was least contaminated.
- 4 Nkosoroe sidan (Place of ostriches). Stayed here from August until September or October. Came here because there was not enough grass in Noontoto, and also because it was getting closer to *ltumurin*. Water is not far, Seiya is ~3km away. There were no wild animals on these plains, and small children could look after big herds. This is also a good place to spend *lorrikine*.
- 5 Kisima. Moved here from October until December. Came here for salt. Good place for livestock – no wild animals, no ticks. Management is easy. Afterwards went back to Naibor Nkeju.

1956 was a rainy year, and the elders remembered lots of babies being born. The colonial grazing schemes had been instituted by then, but had very little influence on that year's movements. People were told where to go and how long to stay, but they would have followed this same pattern if given a choice. There was enough grass in the area, and they preferred to be near Lake Kisima for salt.

- 6 Near Lodokejek. Stayed here during the *ltumurin* rainy season, beginning in November – December. Lived here for 3-4 months.
- 7 Near Lake Kisima. Moved here during *lng'erng'erua*, the long rainy season from March – May. This was an open area, with few people around. The watering point for people was ~500m away at the Lbaa Lesukuta well. Animals were watered 3-5km away at Lake Kisima, the Seiya River, and Kia aing'ok, a seasonal river. There were only two neighboring manyattas nearby, 3 or 4 km away.
- 8 Near the forest. They moved here in June, but only stayed one month because it was raining and it became too muddy. There were lots of *Balanites* and acacia trees in this area back then, which are also not good for livestock because of their thorns. At that time there was a dam about 3-5 km away, but water was everywhere. Livestock were also watered at Lake Kisima because of the salt.
- 9 Noontoto. Moved here during the *lorrikine* rains at the end of July, then stayed through the *lamei oodo* long dry season. Were here until November or December, and then moved back to Naibor Nkeju. This place was drier, and there was still enough grass. They used same dam as before. The seasonal river called Noontoto is about 2km away, which provided water for people. Lake Kisima was used for salt. Only a few people were in this area at that time. Some people lived on the other side of the Noontoto river, other people near the dam. Watering points did not get overgrazed.
- 10 Naibor Nkeju. Stayed here for long, 5 or 6 months. Would have stayed longer but animals had a foot and mouth disease and they had to be moved. The Lilongwe water point is 4-6 km away, which is quite far. Eventually had to move closer to a seasonal river for water. Also became too dry. Leopards killed a lot of sheep here, and their father had to make special enclosures.

in Samburu had started to expand. Until the 1970s there had been enough grass to sustain both livestock and people, but by the 1970s people had to move more often, and farther, to find adequate pasture. Households could no longer be moved with the animals, and *Imurran* began to spend greater time with herds in remote cattle camps. Today, nowhere in Samburu do entire households still move on a regular basis along with their herds. People in the lowlands maintain the region's highest degree of residential mobility, typically moving every few years. During the drought in 2009, however, some households were being moved after only two or three months. People on the communally-owned group ranches of the Lorroki Plateau are somewhat more settled, occupying houses for an average of roughly six years. The most drastic disruption has been in the highlands, where privatization of land in Porro Location in the late 1990s has encouraged more permanent settlement on private plots. Houses are now built to be occupied in some cases for decades.

4.1.2 Houses

Architecture built and used by mobile peoples is still given relatively little attention archaeologically, despite the growing body of ethnographic literature on its social and symbolic significance (Eastman 1988; Prussin 1995; Seymour 2009b). A detailed discussion of the symbolic dimensions of Samburu houses (à la Bourdieu 1970 or Moore 1986) is beyond the scope of this project, but see Århem (1991) for a comparable study among the Maasai. Before I describe in very basic detail the different house types now seen in Samburu, let me first introduce a few common terms. The Samburu word for house or home is *nkang*. More commonly heard throughout Kenya is the term *manyatta*, the term Maasai use for their settlements, particularly the large and

fairly permanent “warrior villages” where their Imurran congregate. Another important term is *boma*, the Swahili word for enclosure, which is frequently used to describe the round fenced enclosures characteristic of many eastern African pastoralist homesteads.

Samburu domestic settlements, as diagrammed by Spencer (1965) and reproduced here in Figure 4.2, are structured in specific and predictable ways. Each settlement is typically occupied by a man, his wife or wives, their children, and possibly other dependents such as grandparents, poorer relatives, etc. Each wife builds her own house, and these houses are positioned around the interior of the round *boma* fence clockwise by order of marriage. Pens for calves and small stock are constructed in the middle, and cattle use the rest of the enclosure for sleeping at night. The fence around the perimeter is still usually made from acacia branches in the lowlands, but on the Lorroki Plateau and in

Figure 4.2 Samburu settlement (from Spencer 1965). Not pictured is Spencer’s kinship chart explaining the arrangement of families within the *boma*.

the highlands these fences are now often made from heavier poles. Fencing land for agricultural plots in those areas has become increasingly common, and no longer are settlements always round and laid out as before.

Samburu living in the dry lowlands (*lpurkel*) have maintained the strongest commitment – in theory if not always in practice – to an ideal pastoralist way of life: mobile and wholly dedicated to livestock. Holtzman (2004) writes in depth about how divisions within Samburu are conceptualized by its residents as both ecological/geographical and social/economic: a more “local” or “traditional” way of life in the lowlands is thought to exist, for example, in contrast to a more “developed” and agricultural way of life in the highlands. Moral geographies aside, the fact is that people in the lowlands *do* today tend to lead very different *material* lives from those Samburu elsewhere. Figure 4.3 shows the family I stayed with in the lowlands. Their house is of a construction type still fairly common in the lowlands; Figure 4.4 is a diagram of a slightly smaller but similar house, taken again from Spencer (1965). These houses are designed for a mobile life. Flexible wooden poles are bent into a dome shape and then covered with mats, hides, and often today plastic tarps and rice bags. Houses of this type are still built in the highlands and on the Lorroki Plateau, but usually only for ceremonial occasions. Within a month or so after being married, a bride’s affinal female kin and neighbors will build her an expedient “*nkaji naibor*,” or “white house.” Elders will ritually light a new hearth fire for her to nurture and protect, and in previous times this structure would have become her new home. In places today where people have settled more permanently, however, the *nkaji naibor* will be destroyed at the end of the ceremony, and the bride will move into a much sturdier timber-frame house.

Figure 4.3 My host family in front of their house in the lowlands, near Latakweny

Figure 4.4 Plan of a Samburu house, from Spencer (1965).

Figure 4.5 shows a somewhat more permanent house in Kurunga, near South Horr and Mt. Ng'iro, in the northernmost part of Samburu.

Figure 4.5 House in Kurunga, near South Horr

Houses commonly seen today on the Lorroki Plateau are more substantially-built than most houses in the lowlands, and are made from straight wooden poles plastered with a mixture of cow dung and dirt, with flat roofs covered in dung. They are designed to withstand cooler temperatures and are intended for a lengthier period of use. Figure 4.6 shows a plan map of a house on the Lorroki Plateau near Naibor Nkeju. Each house of this type has a central hearth, raised beds for the husband and wife, and similar arrangements of house poles, beams, and other architectural features such as windows and holes for ventilation. Although the basic outline of these houses rarely seems to vary in this area, they are occasionally partitioned differently or built larger to accommodate

extra rooms. Prame's house, for example, has an extra bed platform in the north-eastern corner.

Figure 4.6 Plan map of house on the Lorroki Plateau

Figure 4.7 Highland houses in Siambu

Houses in the highlands vary in construction style and technique, but are the most substantial of those found in the three main study areas of my project. Figure 4.7, on the left, shows an unusual example with a round floor plan and a pointed thatched roof. Difficult to see in the picture is a battered aluminum cooking pot at the apex of the roof, used to minimize leaks. On the right is a more common type of house now seen in the highlands, a rectangular wooden frame structure with a flat roof made from corrugated iron (*mabati*). The family pictured also has a smaller, dung-plastered house within their boma. Everyone, including myself, favored the dung-plastered house as the place to drink tea in the evening, around the warm central hearth. Other house types can be seen throughout Samburu; in the small town centers that dot the landscape, for example, families often live in cinderblock homes with metal roofs. Of course, I lived with the Lesorogol family in a home that would not look at all out of place in America. Straight (2007a) points out that while these types of houses might seem (even to Samburu) more “modern” or “developed,” they are considered more masculine than “traditional” Samburu dung-covered huts. These newer houses are all built by men, and they all lack a hearth – strongly associated with female divinity and fecundity – smack in the middle.

4.2 Cattle Camps

Lmurran are now responsible for taking cattle for grazing quite far away from domestic settlements, just as they did in the past during droughts or other times of great stress. The Lmurran set up temporary cattle camps (*lalei*) where they and the cattle sleep at night for protection. These camps are for the most part ephemeral, lasting anywhere from only a few days to months. Samburu Lmurran construct very simple lean-tos from

branches and sticks, with brush enclosures. At very few cattle camps did I ever see small huts or houses. Figure 4.8 shows a cattle camp in the Kirisia Hills, deep in the forest where starving cattle had been taken to fodder. The cowhide used as a bed by an Imurran was out in the cattle enclosure. Fratkin (1979) reports that Samburu Imurran typically spend six to twelve months of each year in cattle camps such as this one. In 2009, drought was so severe that Imurran were there for the entire year. As a point of contrast, Maasai *Imurran* are known for building large “warrior villages” known as *manyatta*. These settlements are more permanent than cattle camps in Samburu, and Imurran congregate as more of a military force for raiding than for watching and defending their cattle (Fratkin 1979).

Figure 4.8 Cattle camp in the forest, with a cowhide sleeping mat.

4.3 Rockshelters and Caves: Meat-Feasting Sites in the Woods

Maasai have a custom known as *olpul*, or *lpul*, in which Imurran participate in the ritualized consumption of meat at isolated sites in the forests. Burford (2002:10) emphasizes the importance of *olpul* to the maintenance of Imurran bodily health through the consumption of meat and herbal decoctions, noting that *olpul* often seeks to fortify and restore bodies before and after events such as raiding and war. Samburu have a similar custom, *loikar*, in which Imurran, forbidden to eat alone or in the presence of women, retreat to the forests to slaughter and feast on their cattle. Elders today, when reminiscing about being Imurran, remember going for *loikar* as often as every two months. How long each feast would last depended upon how big the cattle were and how many Imurran would take part. A big cow might last for six or seven days, they explained, while four or five cows could take one month or longer. After successful raids, Imurran might have brought twenty cows to the forest, staying until all had been eaten.

When *Imurran* slaughter an ox, they always first drink its blood raw. The next three to four days are then spent roasting and eating meat in a communal feast. A roasting area is constructed just outside the rockshelter, where two parallel lines of stones serve as a “grill” and a number of sticks⁸ arranged perpendicularly across them support pieces of meat. Only certain parts of the animal are roasted, such as the ribs, and bones are later thrown away outside the rockshelter. Afterwards, the *Imurran* break into smaller groups to begin the process of drying and boiling the rest of the animal. Two or three people could share one pot, and so a group of ten Imurran might have three or four pots boiling at different hearths. Steaks from certain parts of the ox are cut into strips and placed on

⁸ *Imurran* always use an even number of sticks for roasting, typically eight or twelve.

drying racks made from large sticks, and certain bones are broken to be turned into soup. Several pots might be going at a time. Hearths are built from three blocky stones, just as they are in a home out on the plains. They can be reused, but any old bones are cleared away before cooking begins. The broken bones are added to water and boiled, and small amounts of dried meat are included. The soup is then ready once the meat has rehydrated. The best parts, such as the hump and the back fillet, are given to their fathers and other elders. During the afternoon after a morning slaughter, or perhaps the next morning, some Imurran will travel to the top of the forested hills to collect “herbs” (*shukuroi* or *lbeek*), which are bark and roots added to water that aid with digestion. Trees near caves and rockshelters in the forest are likely to be axe-scarred from repeated use.

Samburu *loikar* was often explained to me as a pastoral response to drought. Meat-feasting most often took place, elder Samburu would say, when milk was in short supply and Imurran were desperately hungry. Imurran would sometimes be given cattle to eat by their own families, and Imurran would hide in the forests to avoid having to share meat with other members of their families and age-sets. At other times, elders say, they were forced to steal. Stolen cattle would have to be taken to more secretive places out in the bush. Rockshelters and caves closest to the plains are widely known and easily accessed, but could be used as refuge when needed. If in particular danger, however, an Imurran might hide out under a tree, building a small fence out of branches to conceal himself. Wild game illicitly killed by Imurran would be taken to rockshelters as well. Today Imurran only participate in *loikar* once or twice a year, and they only go to slaughter small stock. Cattle are now most valuable when sold at market rather than killed.

Figure 4.9 *Soit Loikar* rockshelter

As mentioned in my methods chapter, I mapped six rockshelters in or near the Kirisia Hills. Figure 4.9 shows a meat-feasting site at one of these rockshelters near Garma. This site could be considered fairly typical in terms of size and spatial layout. Some of the rockshelters were smaller or larger; at least thirty people could fit at Kikwal, for example, the largest of the rockshelters in the Kirisia Hills surveyed and mapped for my project. Elders from surrounding areas were brought to each of these rockshelters to aid with mapping and to explain how they and their *Imurran* cohorts once used the sites. During a meat-feast, or as they are leaving, *Imurran* typically leave marks on the walls of the shelter. They draw cattle, spears, wild animals, or other related motifs in both red ochre and white fat. Rock art at a number of meat-feasting sites in Samburu has been mapped by Chamberlain (2006).

4.4 *Lorora*: Ceremonial Settlements

The *Imuget* (or *Imugit*) ceremonies in Samburu deserve special consideration for the marks they leave on the both the social and natural landscape. They are termed *Imuget* to honor the central sacrifice, the “death of many cattle in one place” (Pavitt 1991), that concludes each one. A series of five *Imuget* ceremonies signifies the completion of various milestones in a man’s time as an *Imurran*. The first, the *Imuget loolbaa*, is the most important and takes place roughly one month after boys are initiated into an age-set by circumcision. This *Imuget* takes place once every fourteen to sixteen years, with smaller *Imuget* ceremonies held every seven to eight years as members of the age-set progress through *Imurran*-hood. In 2006, for example, the Lkishami age-set was initiated. In 2013, there will be a smaller ceremony as those young men become senior *Imurran*. In

2020 a new age-set will be circumcised; in 2028 the members of that new age-set will become senior Imurran while members of the Lkishami age-set will be officially recognized as elders.

Figure 4.10 Lorora (from Spencer 1965, note that numbers refer to an extensive kinship chart not reproduced here).

A large ceremonial settlement, or *lorora*, is built before the circumcision ceremony takes place and will be used for the next several months. Some people say that the *lorora* is, in form, a tribute or remembrance to Samburu ways of life in the past. As late as the early 1920s, I was told, an entire clan would live within one large enclosure

out on the plains, as a means to protect people from raiding and violence. Families would never go live by themselves. Since then, massive population growth and a desire for greater autonomy have all contributed to a more dispersed settlement system. Families for the most part live separately, but do come together for safety during periods of extreme violence. Between 2006-2010 in Laikipia and western areas of the Lorroki Plateau, for example, large settlements were constructed to protect families from Pokot raiders. Today people also come together for ceremonies in imitation, they say, of the old ways.

The lorora is never placed in exactly the same spot, but is often built just next to the site of an old ceremonial settlement. Members of the Sitat section of the Lpisikishu clan on the Lorroki Plateau have been participating in Imuget ceremonies at *Lowa Loltorrobo*, the area where members of the Loliin community live, since 1968. The specific location of the lorora is first debated amongst the *mpiroi*, or “firestick” elders, two age-sets removed from the age-set being initiated. They consider water availability, shade trees, grazing area, and availability of firewood. They want an open area, as they do not want small children to get lost in the forest. One elder also mentioned to me the importance of avoiding ants. Figure 4.10 shows Spencer’s (1965) plan map of a lorora, and Figure 4.11 shows a small abandoned lorora in the lowlands. A photograph of a lorora in use can be found in Pavitt (2006:73). Pavitt claims that lorora can be big enough to house two hundred families. At the Imuget ceremony at *Lowa Loltorrobo* in 2006, over sixty houses were constructed within the lorora for more than one hundred boys and at least forty girls.

Figure 4.11 Small, abandoned lorora in the lowlands.

People moved to the *Lowa Loltorrobo* lorora in June, and most of the activity took place during the new moons of the next six months. Lorora on the Lorroki Plateau typically bring together families from one section of the clan that lives in an area. Each family with a boy to be circumcised comes to make a house. Houses within the enclosure are organized by subsection, going clockwise. The women build them as they would the more temporary houses still seen on the Lorroki Plateau, roughly rectangular with small poles for the walls and flat roofs covered in dung. Each boy typically gets his own house, but two boys from the same mother can share. Girls are also sometimes circumcised here, in order of birth. The whole family will come to live in these houses, adults and children alike. Four or five families will share a small enclosure for calves, and the rest of the cattle will sleep nearby. In the middle of the lorora is the *naapo*, an enclosure next to a

tree for elders. A hearth warms them as they take tea while planning and directing proceedings. A thorn fence encircles the entire settlement.

The area for the mass slaughter of livestock lies outside the gates of the lorora. On the twelfth day of the new moon in September, after the circumcisions have taken place, mass numbers of cattle are killed. This slaughter can take two days. The second, smaller mass slaughter can happen right away, within that new moon, or it can wait until October depending on available pasture, security, and so forth. It is held slightly further away, under a different tree. There are two roasting areas with hundreds of paired roasting pits, each approximately thirty centimeters deep and one meter by one and a half meters long. All face north towards Mt. Ng'iro with the roasting sticks oriented east-west. Ceremonies will conclude in November, at which point the roasting sticks will be collected and set aside, and the lorora will be burned to the ground⁹.

Other lmuget ceremonies also see the construction of smaller lorora. During the *lmuget lenkarna* ceremony approximately five years after the initiation ceremonies described above, for example, some lmurran are chosen to become elders and assume responsibility for the defense of the community. A smaller settlement is built and only small stock are slaughtered, and the ceremony lasts for approximately two to three months. For further reference, Pavitt (2006) has highly detailed descriptions along with beautiful photographs of Samburu ceremonial life.

4.5 Dorobo

⁹ Site abandonment practices deserve greater research; I do not know, for example, why only some lorora are burned after use and others are apparently simply left to decay.

Elder members of the Loliin Dorobo community now living at the foothills of the Kirisia Hills tell stories of when the Dorobo once lived in the forest. They were master hunters of elephant, buffalo, and other big game, they foraged for fruits and other wild plant foods, and their expertise in apiculture provided honey as another major source of food and drink. Some of the oldest men and women I spoke to remembered their community still living this way when they were children, and many others remembered stories about Dorobo life in the forest as told to them by their parents and grandparents. The writings of European big-game hunters in the late 19th and early 20th centuries shed some additional light on Dorobo life in northern Kenya at this time (e.g., A. Neumann 1898), but of course these narratives focus primarily on hunting adventures and less on domestic life.

Dorobo long ago, elders would tell me, constructed houses in the forest from leaves and barks. They also frequently lived in caves and rockshelters, moving short distances to follow wildlife. A family, for example, might pick up and move to the area where an elephant had been killed. It would take an entire month to process and eat the elephant, at which point they might move back to their original home. There were very few people at that time, I was told, and wild animals were plenty. Few people had to travel very far. In the early 1900s, Dorobo families started to move their homesteads out on to the plains. They began herding small numbers of livestock, and integrated themselves more fully into Samburu life. Yet Dorobo rarely congregated for large group ceremonies or meat-feasts, according to many Samburu, and valued their privacy. Although Loliin women now construct their houses in identical ways to their Samburu

neighbors, some subtle differences can today be seen in settlement layout. Not all houses, for example, have fences. Not all households own livestock that need fencing in.

4.6 Blacksmiths

Blacksmith, or *lekonono*, settlements are entirely separate from the rest of Samburu society, although today one might find communities of *lekonono* living in conditions of extreme poverty on the outskirts of towns such as Wamba. Roy Larick (1986b) presents an ethnohistoric and archaeological study of *lekonono* settlement patterns in rural parts of the region. *Lekonono* rarely had livestock, and so they rarely had to move their settlements in search of pasture. Sites were typically located at mountain bases to ensure access to water, iron ore found in stream beds, and firewood for charcoal. I would add clay for lining furnaces to this list. Blacksmith settlements were large and complex, he argues, with special activity areas. These settlements were most often located near (but autonomous from) communities of pastoralists and foragers who purchased *lekonono* spears, knives, and other wares. In the 19th century, it appears that some blacksmith communities moved to upland localities to insulate themselves from inter-ethnic conflict between various Maasai groups and Samburu out on the plains.

Additional ethnographic research on *lekonono* settlement patterning since the adoption of commercially-produced metals in the 1930s might improve our understanding of specialized craft production and economic/ethnic diversity in this region. From an ethnoarchaeological perspective, the material culture of both smelting and smithing activities should be highly visible across the landscape; a short visit to an

abandoned *lekonono* settlement revealed a high number of hammerstones and stone anvils at former campsites (Figure 4.12).

Figure 4.12 Abandoned blacksmith's encampment. Note multiple stones used as anvils.

Samburu Part II

Subsistence

Samburu subsistence is based on the famous triad of milk, meat, and blood common to pastoralist societies living throughout the African continent. There is a distinction to be made, however, between the idealized “pure pastoralist” diet and the range of dietary practices that pastoralists throughout eastern Africa have relied on throughout their histories as herders in drought-prone and unpredictable settings. This chapter will provide a basic introduction to Samburu foodways as they have existed, on the ground, in the living memories of Samburu men and women today. I have tried to compile published ecological and nutritional data with my own ethnographic observations. In some cases I attempted to collect systematic and quantitative data on certain aspects of food procurement and consumption, such as the use of wild plants.

I will also draw from Holtzman’s (2009) book on the politics of eating in Samburu, published just after I returned from the field. This book contains a comprehensive ethnographic description of Samburu foodways. It also stands in contrast to the large body of anthropological literature on pastoralism that has focused on nutritional science and human health. He writes extensively about Samburu ambivalence towards dramatic dietary changes brought on during the colonial era, including the new dependence on food such as maize. In his book he also challenges common anthropological theorizing on food. Rather than viewing food as a lens through which we might understand some bigger social construct (e.g. Samburu economic systems, or political institutions, or religion), for example, Holtzman makes the argument that all of

those things are in fact themselves constituted through food. Food sharing serves as the basis for all social relationships; it underlies the age-set and gender systems and fundamentally structures Samburu understandings of morality (see also Holtzman 2007).

My interest in Samburu food lies in how it structures the materiality of Samburu life, and vice versa. After describing Samburu foodways in this chapter, I will later elaborate upon the ways in which household material cultures – such as pottery, other containers, and grindstones – have been and remain an integral part of the Samburu subsistence system.

4.7 A Note about Methodology

Studies of nutritional ecology among, for example, the Turkana (Galvin 1985; Galvin and Little 1999), Maasai (Nestel 1989), Rendille (Fujita et al. 2004), and Borana (Galvin et al. 1994) have provided extensive dietary data for a range of pastoralist groups in eastern Africa. Yet few if any such studies have measured nutritional intakes across wide samples of the Samburu population. Doing so as part of my own fieldwork proved impossible for several reasons. Attempts were made initially to obtain data on daily patterns of food consumption by households during both rainy and dry seasons. Women were asked what they had eaten and fed to their families in the days previous to the interviews, in what quantities, and using what cooking implements. These lines of questioning were quickly abandoned, however, as it became clear that diets had been dramatically affected by both drought and dependence on imported foods. Few families had milk, and most were subsisting almost entirely on sweetened tea and maize meal made into porridge. Occasionally this was supplemented by some type of vegetable,

typically cabbage or kale (*sukuma wiki*), or beans. Much of the sugar, maize flour, and cooking fat or oil was supplied by the Kenyan government, NGOs, and foreign assistance programs as emergency drought rations. In the lowlands, large numbers of people were nevertheless visibly suffering the effects of malnutrition and starvation. Although I did witness on several occasions women procuring and preparing wild plants as a supplement to their families' maize-based diets, this was a sufficiently rare occurrence to preclude any attempts to systematically collect dietary data on the topic. Instead, I used formal and informal interviews to detail patterns of subsistence as explained by Samburu themselves.

4.8 Milk

There exists a certain nostalgia among elder men and women in Samburu for idyllic times, long past, when people could live quite happily on milk provided by vast herds of cattle. This is no longer a common reality, if it ever was, but milk (*kule*) does remain the staple food of Samburu. Its consumption varies greatly by season; during rainy periods, when there is abundant pasture, far more calves are likely to be born and to survive. There are many fewer calves born, and much less milk production in general, during dry seasons and droughts. Dahl and Hjort (1976) estimate that Samburu cattle each typically yield approximately 2.7-3.2 liters¹⁰ of milk in the dry seasons and up to 4.5 liters in the rainy seasons. These totals include the milk that calves need to survive, however, and calculating amounts of milk left over for human consumption is difficult and varies with husbandry practices. To fulfill protein and caloric requirements, men

¹⁰ Dahl and Hjort's estimates for milk yields are reported in kilograms, but here I have converted all measurements to liters. One kilogram of milk is roughly equivalent to one liter.

would need to drink approximately 3.4 liters of milk per day, while women would need to drink 2.4 liters (Dahl and Hjort 1976:155). These numbers seem high, however, and I suspect that many if not most Samburu subsist on far less. I was once told that during rainy seasons a Samburu woman might drink up to one or one-and-a-half liters of milk per day. In the dry seasons, as Dahl and Hjort explain, it would be nearly impossible for one family to have and maintain a herd big enough to supply sufficient milk to survive. Alternative resources such as meat and blood would also have to be used. Sheep and goats are milked by Samburu but yields are typically low. During the drought conditions of 2009 milk yields for large and small stock – cattle, sheep, and goats – in most areas were negligible if not nonexistent. Camels in the lowlands were providing some families with milk, but these animals were relatively few and far between.

In terms of nutrition, cattle milk provides nearly all that one needs. During my time in Samburu one elderly friend was managing to live almost entirely on shelf-stable milk purchased from a local shop in Kisima. Milk from the zebu cattle bred and raised by Samburu is more nutritious than milk from European and American cattle that produce higher yields, but like all milk it does lack adequate quantities of iron and vitamin C. Meat and blood, along with fruits, vegetables, and other plants must therefore be consumed as supplements (Dahl and Hjort 1976). Vitamin D is also missing from milk but can be easily obtained via sunshine.

Milks from the different types of livestock are said to have different tastes and textures. Cow's milk is preferred when drinking fresh milk (*kule nairewa*), which can be consumed raw without any pasteurization or fermentation. Cow's milk fed to babies and children is always boiled first, however, lest it "go bad" in their stomachs. Sheep and goat

milk is less often consumed directly, except perhaps by children, but is fine for use when making tea. Nowadays a large percentage of the fresh milk obtained from livestock is in fact prepared with black tea, to which copious amounts of sugar are added. Holtzman (2003) estimates that today twenty-five to fifty percent of calories consumed daily by a Samburu adult, under ideal circumstances, come from tea. Cups of tea are usually prepared by women, and served to their families both morning and evening. In addition, cups of tea are always offered to guests. I myself gained at least twenty pounds during fieldwork, and I attribute this largely to the multiple cups of tea a day I was so kindly served as I conducted my interviews.

During dry seasons and droughts nearly all of the available milk is made into tea, but in the rainy seasons a surplus of fresh milk might be left in wooden milk containers to go sour, yielding *kule naoto*, or fermented milk. Fermented milk is a favorite drink in Samburu, and its taste is preferred over fresh milk. It also has a longer shelf life. Estimates vary but most suggest that fermented or sour milk will keep at room temperature for two to four days, or longer if fresher milk can be added. If stored properly fermented milk may last for up to two to three weeks (O'Mahony 1988).

Women may also decide to make butter (*ng'orng'o*) and ghee (*lkisiich*) if milk is in good supply. Butter is made by churning either fresh or sour milk in a large round gourd, or *nyatio*. Although butter may sometimes be fed to babies (because, I was told, it has a high fiber content), it is most often turned into ghee. Ghee, or clarified butter, is nearly entirely composed of fat and is free from water, protein, and other milk solids. Butter is simply boiled down in pots until the moisture has evaporated. The solids are then removed. There is also a way to make ghee that separates out the fat but still leaves

some residual milk, or *kamanang*, to drink and to cook with. Ghee can be eaten plain, or stirred into food and (less commonly) tea. Holtzman (2009) notes that ghee is particularly important for pregnant women, who may eat ghee to sooth their stomachs and who may also store ghee in order to ensure that they have enough food after giving birth. Ghee has a longer shelf-life than butter, typically around two months but one report indicates that ghee can last for up to three years if salted and stored in an opaque and airtight container (Bekele and Kasaye 1987). Indeed this method of processing milk is typically done to preserve the milk for use in dry seasons. It takes a great deal of milk to make even small amount of butter and ghee; yields are around five percent (Ryoba and Kurwijila 1995). Ghee would thus be significantly easier to transport, but this is rarely an issue as people hardly ever need to move when they have a surfeit of milk. I should note that pastoralists throughout Africa have developed a wide range of differing strategies for storing and preserving milk. Turkana and Somali herders reportedly make a sun-dried milk curd that can last for up to a year (see Dahl and Hjort 1976; Galvin 1999), and Tuareg herders in western Africa make cheese (Nicolaisen and Nicolaisen 1997). Samburu make neither.

Worth mentioning are the social mechanisms by which milk resources are equitably distributed. Homewood's (1992) study in Maasailand, Kenya and Tanzania, concludes that there is little difference in milk consumption and other measures of nutrition between wealthy and poor households. She notes that this could be for a number of reasons. A minimum amount of milk goes to human consumption regardless of household wealth; wealthier families may leave more milk for calves, thus reinvesting in the health of their herds rather than their people. Homewood also notes the cultural importance of food-sharing, and I would like to emphasize this point in regard to

Samburu. Kinship and friendship networks are responsible for redistributing wealth to some extent and ensuring that as few people as possible suffer the effects of malnutrition and famine. Samburu foodways may be seen as ecologically adapted to life in the marginal and arid environments of northern Kenya, but the *social* organization of food procurement, preparation, distribution, and consumption must be seen as critical to Samburu society's overall success and sustainability.

4.9 Meat

Cows are most valuable for their milk, and so every effort is made to keep them alive. The consumption of meat in everyday contexts is thus generally avoided when and if possible. There are only three main occasions, I was often told, during which livestock are slaughtered and eaten. The first, and arguably most culturally important, is the ritual killing and consumption of cattle during the *Imuget* circumcision ceremonies. The second is during times of drought and disaster. The nutritional and caloric importance of meat to the Samburu diet is generally minimal during rainy seasons when people have plenty of milk, but during dry seasons animals are frequently slaughtered to tide people over until herds recover well enough to produce sufficient amounts of milk. The third is when small stock are slaughtered for smaller celebrations and ceremonial occasions such as the birth of a child or a wedding. People may also deem the slaughter of an animal necessary in other unusual circumstances. Special bone soup might be made, for example, when someone is seriously ill.

Despite the relative paucity of meat in typical Samburu diets, the ways in which meat-sharing is organized and implemented is fundamental to the sociality of Samburu

life. Different groups within Samburu society eat different parts of each animal, and as Holtzman (2007) explains, they are eaten at different times and in different places, often over different fires. The ways in which most foods are prepared and distributed is in fact highly prescribed, and those rules reinforce both the ideological and physical separation of age and gender classes. Roasted meat is generally associated with men; boiled meat is generally associated with women. Fried meat is much less common, and is generally given to elders. Food-sharing traditions such as these stand in stark contrast to those of the former hunter/gatherer communities living in this region. I will mention these distinctions again in Chapter 8; in the meantime, I will touch on the most basic aspects of Samburu meat-sharing here.

Meat-feasting has been briefly described in earlier in this chapter. There are the big *Imuget* ceremonies in which great numbers of cattle are killed, and there is the smaller-scale meat feasting that takes place at rockshelters and caves several times by each *Imurran* throughout each year. Roasting meat at all of these occasions is a communal activity for the men of the community. Certain parts of the animal, such as the ribs, will be roasted, and meat from other parts of the animal will be cut into strips and then hung up and dried. Other parts of the animal will be boiled, even though boiling is a method of preparation culturally associated with women. *Imurran* do make bone soups in the bush, and add roots and barks, grouped together in this dissertation as “herbs.” These herbs are said to give *Imurran* strength and to build their general health.¹¹ They

¹¹ Chapman et al.’s (1997) work lends credence to the idea that several herbs used by both Maasai and Samburu in meat and milk-based soups play an important role in regulating cholesterol levels. This could potentially explain how eastern African cattle pastoralists have been able to maintain good cardiovascular health despite their diet high in saturated fat and cholesterol. One might suspect, however, that low overall

also aid in digestion and make the soups more palatable. The roots and barks of *sananguri* (*Scutia myrtina*), for example, are good for breaking down fat in soups. *Sagumai* (*Maytenus heterophylla*) makes soups thick. Other roots are taken to induce fits of shaking.¹² Small amounts of dried meat can also be added to soups.

At home, Samburu women make soups by boiling bones in water and often then adding small portions of milk. Potatoes and carrots bought at market might be thrown in if available as well. Mothers with small babies will eat roasted meat first and then soup (*nkuwuo*). The roasted meat is said to make a mother stronger and slim, with little water retention, while soup then makes her fat (so fat, I was told, that the doors to her house might need widening!). Babies are given soup made from heads and feet (called white soup, *nkuwuo naibor*, or *sarr*), and any fat left after boiling bones and meat is given to the babies as well. Kidneys and hearts are often saved for children and can be roasted at home or at the slaughtering site. Flat black stones out on the plains sometimes get hot enough in the sun to serve as griddles. Not all parts of an animal have to be cooked. Raw kidneys are a treat, and stomach, liver, and fat can be consumed uncooked as well.

There are several types of fried meat, all made by women but typically served to their husbands and elder men. *Lakuli* is chopped-up meat that has been fried until dry, with extra fat then added while cooking. *Mununa* is similar, but extra fat is added before being put in the storage vessel, the *moti lekवेशi*. Very fatty meat, such as a sheep's tail

caloric intakes, along with the very high amounts of hard manual labor involved in being a herder, might bear on this issue.

¹² See Spencer (1965) for a lengthy discussion of the “shaking” phenomenon that happens to Imurran in certain situations of extreme duress or excitement. Imurran suggest that certain roots mixed with soups are potent enough to cause shaking; samples of *lkitalasua*, *lkinyil*, *seketet*, and *loiraur* were sent for laboratory testing. Reports indicated that none of them caused nervous system reactions in mice. In perhaps my favorite passage of the entire book, however, Spencer does attest to their purgative effects.

or the hump of a cow or camel, is called *ngauwa* and can also be fried. Elders may choose to share these foods with women and children (Holtzman 2009). Another favorite among elder men are heads of small stock boiled in soup. Fat itself (*lata*) can be collected from slaughtered animals and stored in women's containers made from carved wood or gourds. Nowadays women typically cook with store-bought fats such as Kimbo and Kusuku-brand vegetable shortenings.

So far I have discussed the preparation and consumption of meat taken from domestic animals. Samburu will eat some types of wildlife, particularly during severe drought conditions when their own livestock herds are depleted or in poor health. The hunting of some animals such as zebras and elephants, even though they abound on the plains, is strictly verboten. Food taboos sometimes vary from clan to clan within Samburu society. Only the Masula, for example, are permitted to eat rhinos, although few if any of these rhinos now exist in Samburu outside of wildlife reserves. Numerous other types of wildlife can be eaten by all, however, including buffalo, eland, giraffes, impala, and bigger gazelles. Some elders claim that cultural prohibitions against eating certain types of animals, such as Thomson's gazelles, have been known to change over time as food crises dictate. Hunting wild game is currently illegal in Kenya, but many Samburu admit that the prevalence of AK-47 rifles in the region has led to an increase in poaching for food.

4.10 Blood

Eastern African pastoralists are the only peoples in the world known to regularly bleed healthy livestock for food (Galvin and Little 1999). There has been some debate as

to how nutritionally important blood has been to Maa-speaking pastoralists in the past (see Holtzman 2009). It is generally thought to be the least important element of the pastoral triad, but at least in Samburu it does seem to be a particularly important supplement for the *lmurran* who drink blood at their camps in the bush. Women also note that drinking blood is critical for post-partum women because it serves to replace the blood lost during childbirth. The preparation of foods made from blood is less common at home, and today the practice of drinking, or cooking and eating, blood is usually saved for special occasions such as after circumcision ceremonies.

Lmurran might drink the raw blood of a sheep or goat that has just been slaughtered, and at cattle camps or at meat-feasting sites they often bleed cattle (or very rarely small stock and camels). Bleeding is done by tying a tourniquet around a cow's neck, for example, and then nicking its jugular with a small iron-tipped arrow. *Lmurran* then drink the blood raw or collect it in wooden or gourd containers to bring home. Their mothers might have saved milk for them, and blood is boiled with this milk and fat. The mixture, called *nchakule*, turns brown and solid like porridge. It is, I was told, "delicious." Women, children, and older people do prefer blood to be cooked before consumption. Red blood is said to be scary for children, so it might first be boiled until it turns black. Blood can be prepared in all manner of other ways as well. Cattle can be bled straight into a pot, and small amounts of fat and milk might be added. This mixture is then boiled until it congeals into a gelatinous mass, *njarlugi*, which is cut into pieces and served.¹³ Another way to process blood is to whisk it to remove clotting agents and then mix it with fresh or curdled milk. This mixture can be consumed right away or left to go

¹³ Note that Holtzman (2009) recorded different spellings for many of these foods than I did, as well as slightly different methods of preparation.

sour, or it can also be boiled. Doing so supposedly extends the shelf life of the milk a bit longer.

As with so many other types of Samburu foods there is a strongly seasonal aspect to the everyday consumption of blood. Just as meat is considered a dry season food, blood is cooked and eaten primarily during times of stress, with ceremonies again the primary exception. Many of the wild plants to be discussed in the following section, for example, are also cooked with blood in the dry seasons if there is a shortage of food. Small stock are sometimes bled for this purpose. *Nkupot* – a mixture of water, milk, and blood – can be thickened with seeds from the doum palm. Soups can be made with wild fruits and blood during rainy seasons as well, but this was said to be rare and typically only done for medicinal reasons. Holtzman (2009) also mentions in particular a food known as *mpupoi*, or blood boiled with fat, which is disliked but consumed as a famine food. I must note that even though I conducted my fieldwork during one of the worst droughts in living memory, I never witnessed any of these foods being prepared. Livestock were exceptionally weak, and people were reluctant to bleed them. Women instead relied almost wholly on relief supplies of maize meal, beans, and oil in order to feed their families.

4.11 Wild Plants

When conducting my research, I became somewhat frustrated with the lack of quantitative and qualitative data about Samburu use of wild plant foods. Ethnobotanists working with Maa-speaking pastoralists in eastern Africa had without exception marveled at the wide array of wild plants utilized in all manner of ways (Brenzinger et al.

2005; Bussmann 2006; Bussmann et al. 2006; Heine et al. 1988). However, in documenting the *extensivity* of plant use by these groups of herders there is often little documentation of how *intensive* plant use tends to be in various contexts. For example, Bussman (2006) identified 249 plant species known and used by Samburu living near Mt. Ng'iro. Twenty-nine of those plants are reportedly eaten. Most of these food plants, he notes, have fruits which are eaten by women and children. Little else is said about the relative importance of individual plant species, or the extent to which Samburu rely on them during times of food stress. I decided to add a series of ethnobotanical questions to my household surveys in an attempt to redress this gap in the literature. The sections that follow detail these results in a (perhaps disproportionately) long treatise on Samburu use of wild plant resources. My data support the idea that Samburu have extensive knowledge about wild plant resources, and that certain plants are particularly central to their survival out on the grasslands.

In eastern Africa wild plant foods have long been recognized as a fallback option for pastoralists during times of drought and famine when milk, meat, and/or blood are either unavailable or in short supply. There has likely never been a time in Samburu when people have been able to subsist solely on the milk, meat, and blood of their herds without supplementing their diets with at least some wild plant foods or grains obtained from agricultural neighbors. The vast array of knowledge that most Samburu retain about wild plant foods attests to their cultural history as multi-resource pastoralists; even when elders speak about the heyday of specialized pastoralism in this region, they mention the need to forage for food on occasion. Holtzman (2009) acknowledges that during famines little stigma is attached to the consumption of wild plant resources, and everyone

surveyed for this project freely shared stories of times when they and their families had to eat wild plants on occasions when livestock alone could not support them.

In his gastronomy of Samburu cuisine, Holtzman (2009) mentions *loordo* (or *lordo*) as a type of wild green consumed when milk is in short supply, along with boiled acacia seeds including *sagaram* from the *ltepes* tree (*Acacia tortilis* (Forssk.) Hayne) and *ldalam* from the *lkiloriti* tree (*Acacia nilotica* (L.) Willd. ex Delile). Berries and fruits from various plants are also boiled to make *lpaas*, a soup made with fat, blood, honey, or sugar added for taste or calories. Children also pick berries and fruits to eat raw while out herding their animals. Overall, however, the impression left on the reader is that plants are and have been a minimally important part of typical Samburu diets. Heine et al. (1988:34) in fact state the following: “On the whole, the contribution of wild plants to human diet is insignificant. It is mostly children who pick berries from trees or shrubs, in most cases just snacks and very rarely full meals.” I would disagree, however, and argue instead that wild plants are in fact a critical component of Samburu cuisine.

4.11.1 A Note about Ethnobotanical Methodology

The relative cultural importance of food plants to the Samburu women surveyed as part of this project has been estimated using free-list data about these three cultural domains. Data on medicinal plants was collected as well and will be presented in following chapters. For food plants I asked respondents a fairly open-ended question: “Which plants do you eat as food, traditionally as a Samburu?” This question elicited information both about wild plant foods that people are currently eating or that they remember eating in the recent past, or plant foods that were perhaps consumed by Samburu generations ago but that have retained a place in Samburu cultural memory.

Salience indices (see Quinlan 2005; Smith and Borgatti 1998) were then calculated for each plant; these are useful here in that with free-lists they combine frequency of mention with order of mention. This method of analysis is used on the assumption that the most culturally and/or economically important plants to Samburu would be listed both most often overall and earliest on in each individual free-list. I had no way to evaluate the actual frequency with which these plants were used or the overall dietary contributions these plants were making to Samburu diets. I was instead limited to documenting their prominence in my respondents' minds. I maintain even if most Samburu now rely almost completely on market commodities and/or emergency government rations, the retention of cultural knowledge about certain plants indicates a history of plant use in which those plants served some central dietary (or otherwise cultural) function.

4.11.2 Results

Appendix 3 contains all of my ethnobotanical results. I was unable to collect and identify voucher specimens for all of the plants named during surveys, and so I have compiled botanical identifications from the existing ethnobotanical literature as a point of reference (Table III-A). I have then chosen to break down plant foods by region; Tables III-B through III-D present salience indices for these plants. Results from members of the *Loliin* community will be discussed separately. Overall, Samburu women listed sixty-five different wild plant species used for food. Several of these plants have multiple parts which may be used as food. For example, both the fruits and seeds of *sananguri* (*Scutia myrtina* (Burm.f.) Kurz) are eaten on different occasions during the year. Figure 4.13 shows a breakdown of plant parts eaten by Samburu. The majority are fruits and seeds. Other plants types mentioned include roots, tubers, stems, pods, leaves, barks chewed to

Figure 4.13 Types of plant parts eaten by Samburu (n=78)

slake thirst, and gums. Seasonality is the most important factor in the collection and consumption of plant foods across Samburu, although note that the heterogeneity of local ecologies across Samburu has led to patterns of plant use highly specific to different areas including the highlands, the Lorroki Plateau, and the lowlands.

It would be difficult to overestimate the importance of these wild plant foods to Samburu during drought and other disasters. This importance can be tied to their widespread availability even during drought, when livestock are dying and milk is critically low in supply. During the *mutai*, for example, elders remember hearing that people ate all kinds of wild plants when they were otherwise starving. The most important food plants in Samburu can be seen in Table 4.1, where I describe drought-

resistance plant resources that often carry people through until rains start again.¹⁴ I acknowledge that perhaps my data are biased and my perspective clouded by the fact that during my twelve months of fieldwork Samburu found themselves at the tail end of the worst drought in their living memory. Numerous families had seen all of their livestock expire, and government relief food in the form of maize meal was insufficient to feed their families. However, the drought was so severe that most of the plants named during surveys had already died along with the livestock. My case might also be strengthened by pointing out that the Samburu's neighbors to the northwest, the Turkana, rely on fruits, seeds, and pods in very similar ways. As Morgan (1981:101) reported:

The contribution of wild plants to the Turkana diet in quantity is not known but the use of 53 species was recorded. Wild fruits provide welcome snacks for herd boys but parties of women may also be seen harvesting such fruits as those of *Cordia sinensis* and *Salvadora persica*...That wild products are of more than casual significance is suggested by the preparation needed to render them edible. Thus, for at least 6 species, the fruits need to be boiled and reboiled several times: *Balanites orbicularis*, *B. pedicellaris*, *Boscia coriacea*, *Dobera glabra*, *D. loranthifolia* and *Maerua subcordata*. The pods (but not the seeds) of *Acacia tortilis* may be dried and ground into a flour known as "apoonet."

Gulliver (1955) and Watkins (2010) also both emphasize the nutritional value of wild plant resources utilized by Turkana, and ethnobotanical studies among pastoralist and agro-pastoralist groups in southern Ethiopia likewise stress the importance of wild plant foods to local diets (Gemede-Dalle et al. 2005; Teklehaymanot and Giday 2010).

¹⁴ The popularity of *sekotei* can be taken as proof that these foods are consumed for survival rather than flavor. My host family in the lowlands was munching on tiny *sekotei* fruits one evening and I had a small taste. It was easily the bitterest "food" I have ever ingested.

Table 4.1 Wild plant foods important during drought

Samburu name	Botanical name	Part Used	Preparation	Notes
lordo	<i>Cyphostemma</i> sp.	seeds, leaves	Boil the seeds with water, cook until the outer layer of the seeds gets soft, will be porridge consistency. Tastes salty. Can mix with blood, milk, or fat; if stored in wooden or gourd containers will last for two or three days. Leaves can also be boiled and eaten.	People would travel long distances for <i>lordo</i> , particularly in the dry season when there was no other food. Wild fruits were collected in skin bags. Roots are medicinal.
sekotei	<i>Salvadora persica</i> L. var. <i>persica</i>	Fruits	Berries can be stored in wooden or gourd containers, then eaten raw.	Drought-resistant, found in the lowlands along the Milgis River during the dry seasons. Particularly important during the time of my fieldwork. Roots are medicinal.
lpulei	<i>Balanites orbicularis</i> Sprague ¹⁵	Pods, fruits	Remove the seeds from the pods, boil the seeds in water in a pot until oil comes up. Remove oil with a wooden spoon. Can eat the soft part inside the seeds. Can also peel and eat the outer layer of fruits.	Seeds are boiled for their oil. Secretive process; only the owner of the house can go in while this is going on, otherwise won't get enough oil.
loka	<i>Hyphaene compressa</i> H. Wendl.	fruits/seeds	Fruits and unripe seeds can be eaten raw, outer layers of fruits can be dried, ground, and boiled with tea. Seeds can be boiled with water and milk, sometimes blood.	Fruit of the doum palm, found along rivers in the lowlands. Harvested annually during <i>lamei oodo</i> , fruits can last for three months. Drought-resistant. Leaves used to make baskets.
sanang'uri	<i>Scutia myrtina</i> (Burm.f.) Kurz	fruits/seeds	Fruits and seeds eaten raw.	Fruits have their own growing season, seeds are eaten in dry seasons during drought. Bark and roots used as herbs, reduces fat in soups.
sagaram	<i>Acacia tortilis</i> (Forssk.) Hayne	Pods	Boil with water, mix in blood, milk, or fat, drink the juice.	There are more pods in the rainy seasons, but they are stored in leather bags for use during dry seasons and droughts. Juice is said to be watery, but very nutritious.
lpupoi	<i>Grewia villosa</i> (Wiild.)	fruits/seeds	Fruits can be eaten raw or boiled with water, then drink the juice. Tastes sweet. Remove outer layer of the seeds, eat raw.	Harvested during <i>Ingerngurua</i> (rainy season), available for a month and a half. Seeds are also saved for droughts

¹⁵ Also sometimes said to be from the same tree as *Ikiloriti* (*Acacia nilotica*), from which bark is used as an herb. Although *Balanites orbicularis* pods are known for their high lipid contents (Radunz et al. 1985), I am not sure if the same is also true for *Acacia nilotica* pods.

I would like to briefly address the assumption that wild plant food resources are only important to Samburu as supplemental famine foods, particularly important to families living in poverty. This assumption is generally thought to be true for pastoralist groups throughout African dryland environments. Sullivan (2005), working amongst Damara pastoralists in Namibia, finds that wild plant foods are in fact consumed frequently throughout the year, as they become available, and are enjoyed by families of all economic situations. In Samburu, for each plant food named during survey I asked about its availability during the year. Figure 4.14 shows the results.

Figure 4.14 Seasonal availability of edible plant resources (n=65 species)

The majority of the plant foods listed were said to be available during rainy seasons. A great many of these were fruits and seeds, including the wild fruits and berries that often constitute meals for children when they leave home for extended hours to herd their families' animals. There is often very little else available to eat in such situations, and these plant foods may provide either or both an important nutritional source and an important means of staving off hunger until proper meals can be eaten. Even during rainy

seasons some families may also face food shortages, in which case fruits, cooked seeds, and other wild plant foods are an important option for adults and children alike. The plants listed as available year-round tended to be foods such as barks, roots, stems, and tubers; note that these made up a large percentage of the total plant foods listed. A number of other plants, including *lamuria* and some other fruits, grow in the extended green periods after the rains. Some, like *lkitinti* fruits, do not ripen until the dry seasons that follow. *Loka* and *sekotei* are notable in that they carry people over into the dry seasons. These plants tend to score highly on salience indices.

Note that this chart does not necessarily reflect the times of year in which people consume these plants. Although many fruits are consumed as soon as they become ripe, a number of the rainy season plants (*laitipai*, *larashi*, *lpupoi*, etc.) can be stored, and they are, into the dry seasons. Today many women, when they can afford it, do the same with maize and beans. There is very little active management of wild plant resources in Samburu, although seeds from some wild fruits are occasionally saved and planted along fences. Fruits from the *raragi* plant (*Peponium vogelii* (Hook f.) Engl), for example, are sometimes planted along fences in the same way that people save and plant gourd seeds for making containers. *Raragi* fruits and seeds are eaten by children and sometimes adults, particularly during food shortages. Some people are also said to plant a New World crop, hot peppers (*lpilipili*, from Kiswahili, *Capsicum frutescens* L.), along fences to boil with tea. This is apparently good for the stomach. Other food plants grow well in old bomas. These plants include *lamai* (*Ximenia caffra* Sond.), *saal* (*Plectranthus igniarius* Schweinf. Agnew or *Anisotes parvifolius* Oliv.), and perhaps most importantly

wild weedy greens. People do take full advantage of these plants when they appear, but do little to encourage them otherwise.

The consumption of wild weedy greens appears fairly common in communities throughout eastern Africa, as was recorded, for example, within an Okiek hunter/gatherer or small-scale farming households in southwestern Kenya (Marshall 2001). A number of wild weedy greens eaten by Samburu were identified during my ethnobotanical collection on the Lorroki Plateau; these were *segeet* (*Cleome gynandra* L.), *sokotia* or *sukuma mtoto* (*Erucastrum arabicum* Fisch. & C.A. Mey.), *lmoomo* (*Solanum nigrum* L.), and *nterere* (*Amaranthus hybridus* L.). Many of these plants were also originally from the New World. Wild weedy greens were underreported in the surveys relative to the apparent frequency of their consumption. On one occasion we were interviewing a woman as she was preparing greens to feed her family. As part of the survey we asked her to list common food plants, which she did without ever mentioning the name of the plant she was patiently sorting. When questioned, she laughed and said, oh, that's called *nterere*. She planned to serve it for dinner that evening, boiled and served alongside *ugali*, a stodgy mush made from maize meal and water. The drought had recently broken, and wild weedy greens were growing throughout the Lorroki Plateau. Many families were still recovering from heavy livestock losses and related economic difficulties, and the greens provided a welcome source of nutrition. There seemed to be little stigma attached to their consumption; women of all social and economic statuses were observed collecting and preparing these plants. Among no group in any part of the Samburu, however, were these wild plants mentioned often in surveys.

Finally, I would like to discuss the ways in which the use of wild plant foods varies considerably by region. This variability is to be expected, given the fact that vegetation and climate vary considerably by region as well. Women were rarely familiar with plants from outside their home areas. There was almost no overlap in plant knowledge between the highlands and the lowlands, for example, and what overlap there was generally stemmed from the patrilocal pattern that Samburu follow for marriages. Women go to live with their husbands' families, sometimes on opposite ends of the region, and recently married women were most familiar with plants from their home areas.

Surveys conducted in the highlands and on the Lorroki Plateau suggest that Samburu in these two regions have similar cultural histories of wild plant consumption (Tables III-B, III-D). Women in both regions named an average of five foods plants each. The most important plant foods in both of these areas are, by far, the fruits and seeds of the Carissa (or Kirisia) tree, *lamuria* (*Carissa bispinosa* (L.) Desf. ex Brenan or *Carissa edulis* (Forssk.) Vahl). Fruits can be eaten raw, but seeds are typically boiled with water in pots to make kind of porridge. Second on both lists is *loro* (*Cyphostemma* sp.). Samburu distinguish between three different types of *loro*: one bushy plant that grows in overgrazed areas on the plains and is considered the most edible (this one is called, more specifically, *lkorumpule*), one similar plant that lives on the edge of the forest, and finally a climber that grows in the forest itself. Seeds of the *loro* plant are also boiled in pots (sometimes with blood) to make porridge. *Loro* leaves can also be boiled and eaten. Other common plants utilized on the Lorroki Plateau include *lchingei* (*Euclea divinorum* Hiern), whose purple fruits are eaten raw and whose leaves can be boiled down with milk

into a salty porridge. The orange fruits of the *irri* plant (*Grewia* sp.), *lpuusani*, are iron-rich and are eaten raw or boiled in pots. Fruits and seeds from the *lmisigiyoioi* plant, *Rhus natalensis*, were mentioned frequently as foods in the highlands.

Plant foods in the lowlands (Table III-C) differ notably from those elsewhere in Samburu. *Lpuusani* fruits, also mentioned elsewhere, grow in the lowlands during the *Ingerngurua* rainy season and are harvested in large quantities over a month-and-a-half-long growing period. Given its high salience index it can easily be considered the most important food plant in the lowlands. The doum palm, *loka* (*Hyphaene compressa* H. Wendl.), is found along river banks throughout the lowlands and has brown, fibrous fruits which are either eaten raw or dried, ground, and then boiled with tea. Unripe seeds are also edible and boiled with water, milk, and blood. Other important foods in the lowlands include seeds from *lkinoi* (*Lannea alata* (Engl.) Engl.) and *lpupoi* (*Grewia villosa* Willd.), as well as fruits from *sekotei* (*Salvadora persica* L. var. *persica*) and *lordo*. Women in the lowlands named an average of six food plants each, slightly higher than in other locations. Of interest, however, is the fact that there was greater agreement about food plants amongst women living in the lowlands than there was amongst women living in other locations. Many fewer plant species used for food were named overall, but those named (often seeds) tended to have higher salience indices. This could simply reflect a lower number of plant food resources available in the more arid lowlands. I would speculate, however, that women in the lowlands still depend more heavily on wild plant resources to feed their families than do women elsewhere, and that they have maintained greater consensus about the plants there that have helped them survive.

4.11.3 Discussion

In Samburu, it is critical to note that plant use does not simply exist *outside* of the pastoralist system; in fact plant use plays an important role in structuring patterns of mobility and livestock management. Mobility, for example, is in many ways often contingent on these wild plants:

Kore dei abaki nkai toki naidim aituwuo ltungana, kore dei apa inia kata naaku keitumiari dei apa lng'anayio aita ndaa. Amu kore lordo keyiere naa neitae ndaa. Kore taa peku taatu lordo, atuwana Lodokejek, neiwetu apu inie. Mpagu lpuusan, kore peeku nemelepo nkishu inia katai, surma neiwata kini. Abaki lpupoi. Lng'anayio pooki ooto. Lcheni ake lara lowo nenyikakini. Iyiolo apa aikata kira nkera iyiolo ale matundai lekisima Ketuwuokaki. Ale taata lekisima. Mara dei sapare! (Karairo Lesorogol, April 21, 2009)

So the other reason which can make people move, during that time, so you use long ago fruits to be food. Because *lordo* is cooked, you make food out of it. So now, when *lordo* is ripe, for instance at Lodokejek, they move to go there. And *lpuusan* also, when they get ripe and cattle are not lactating, at that time [between dry and wet season], they go close for that plant. The same with *lpupoi*. All fruits which are ripe. Any tree which is ripe, they go close. You know one time long ago, when we were kids, you know this fruit [prickly pear cactus] in Kisima. [People] moved because of it. This one now at Kisima. It's not false!

Ero iuielo aitoki apa likae sheni likireyio Ikireyio atoki apa sagaram. Mara iyiolo dei sagaram? Ikireyio dei sagaram. (Lesupuko Lesorogol)

Boy, you know another thing in the past, another tree to go to, we also go long ago for sagaram. Don't you know sagaram? We go for sagaram.

Samburu elders clearly believe that wild plant foods have been vital to their survival as a people, even as they have maintained an identity centered on livestock and the consumption of milk, meat, and blood. Their reliance on wild plant foods can be traced back at least to the days when Samburu were first called Samburu: it was most likely Maasai who gave them this name, after the leather bags (*sampurr*) so often carried by Samburu women to collect wild plants.

4.12 Grains

No wild grains comprise any part of traditional pastoralist diets in northern Kenya, contrary to patterns seen in the Nile Valley and the Sahara where wild grass grains have been widely documented as staple foods (Harlan 1989). In terms of pastoralist reliance on *domesticated* grains in eastern Africa, archaeological data and historical data are sparse. Sobania (1988:44; see also Sobania 1991) writes that for the pastoral Dasenetch of the eastern Turkana Basin in the late 19th century “the most significant dietary supplements for herdsman and their families were agricultural products.” Dasenetch were able to cultivate finger millet in the northeastern part of the Turkana Basin using a flood-retreat technique, otherwise unfavorable environmental conditions precluded any planting by Dasenetch, Samburu, or any of the hunter/gatherer/fisher groups in that broader region. Samburu farther south and east on the Lorroki Plateau and in the lowlands have been obtaining maize from neighboring farming communities such as the Meru and Kikuyu in exchange for livestock and other goods since at least the early twentieth century. Cultural memory (and certainly pride) holds, however, that the pastoral triad of milk, meat, and blood has always been the primary foundation upon which the Samburu survive. During no interview that I conducted with Samburu elders did anyone mention reliance upon grains even in the most difficult times; most informants instead remembered past exchanges for maize being conducted on rather ad hoc bases regardless of demonstrable need. The only domesticated food plant that some claim as part of a “traditional” Samburu diet is the pumpkin.

Development and relief efforts in Samburu have focused primarily on either providing food aid or on encouraging and facilitating the adoption of agricultural production. Many Samburu communities are now highly dependent upon relief foods brought in by the Kenyan government, the World Food Program, and other non-governmental organizations. Maize is now the most important food in Samburu. The nutritional effects of a switch from diets based on herding and foraging to diets based on agricultural products are thought by many to be largely negative (see Fratkin and Roth 2005; Nathan et al. 1996), however, and only relatively recently have efforts to improve food security been directed towards maintaining the viability of livestock husbandry in these regions. Relatively few projects have addressed the potential significance of wild plant resources to systems of pastoral production. I share the hope of many ethnobotanists, I think, that understanding indigenous knowledge about plants may lead to the development of effective and sustainable food aid programs that encourage the use and conservation of wild plant resources along with the use of supplemental grains.

4.13 Dorobo Subsistence: Meat, Wild Plants, and Honey

I have argued that although pastoralist identities are generally built upon all-encompassing devotions to livestock, a broader understanding of pastoralist subsistence strategies must acknowledge the role that wild resources, both plant and animal, play in everyday life. On a related note, much recent archaeological and ethnoarchaeological work is now being directed towards better understanding social, economic, and ecological relationships between pastoralist and hunter/gatherer populations (Mutundu

1999). For this reason, I present here a short comparative section on the subsistence practices of Dorobo former hunter/gatherers in Samburu. Most information has been obtained through interviews with Loliin elders on the Lorroki Plateau.

Loliin elders remember the traditional Dorobo diet, before their hunter/gatherer community began acquiring livestock, to be based almost entirely on the meat of wildlife. During shortages of meat people did eat wild fruits, although those often grow during the rainy seasons when there is typically a glut of other available foods such as honey and meat. Roots and barks are boiled in bone soup for digestive purposes, much as they are today. There was nothing like tea. Food was the same for all, they said, meaning no distinctions were made by gender and age. The exception was food for children, who were often fed the white maggots from bees. In this section I will briefly discuss in more detail the pillars of Dorobo subsistence. Although Dorobo used to rely on a primarily hunter/gatherer diet, I would note that today they rely heavily on both pastoral and agricultural products, including food aid.

4.13.1 Meat (and Milk, and Blood)

Dorobo held few if any of the same taboos against eating wild game held by Samburu herders. Elephants, buffalo, and other large animals were all regularly hunted by Dorobo for meat. Processing and cooking techniques for both wild animals in the past and domestic animals today seem to have been much the same. Meat would first be roasted, for example, and boiled, and later cut up in long strips to dry. Interestingly, one Dorobo elder explained to me that that meat sharing practices have shifted dramatically. When Dorobo first obtained livestock, he explained, they butchered and shared the meat as they would have wild game. Hunters would give food to their immediate families, and

men and women would all eat together. Only later, he said, did Dorobo adopt the highly segregated and systematic patterns of distributing food as done by Samburu. How true this account is, I could not say. Milk and blood were rarely important elements of Dorobo diets, although they did obtain both from Samburu herders on occasion, typically in exchange for pots, honey, or other goods.

4.13.2 *Wild Plants*

Dorobo say they used to rely on wild plant foods when there is a shortage of meat. Compare this to other Samburu, who say they rely on wild plant foods when there is a shortage of milk. Ichikawa's (1980, 1987) study of wild plants used as foods by the Suiei Dorobo living in the Mathews Range, extensive and meticulously documented, is worth mentioning here. His main focus is on comparative hunter/gatherer ethnobotany, and he does not compare Suiei hunter/gatherer wild plant use with Samburu pastoralist wild plant use. The Dorobo in the Mathews Range, however, began to keep livestock sometime in the 1930s, and at the time of Ichikawa's work most of them were living *de facto* pastoralist lives. He described Suiei Dorobo subsistence as follows:

The livestock kept by a Suiei family are 5-6 cattles and 12-13 smallstock (goats and sheep) on the average. These are by no means sufficient to maintain their daily subsistence. Since hunting is illegal today, they make up for this deficiency by wild plants and honey. The greater part of their present diet consists of milk, meat, honey and maize meal (purchased, or obtained in exchange for smallstock or honey), and wild plants do not share a great portion. However, they frequently utilize some fruits, nuts and roots and supplementary food. Moreover, some Suiei with less livestock often subsist mainly on wild nuts and roots (including tubers) in a severe dry season when no milk is available. For the people who inhabit such unstable environment that is subject to frequent droughts, rich knowledge of edible plants is indispensable to subsistence, even if they are pastoralists. (1980:26)

From a comparative perspective, Samburu pastoralists throughout the three districts without exception report a history of utilizing plant resources in exactly this way, honey consumption perhaps being the only exception. In many cases Samburu households today rely on the same 5-6 cows, the same 12-13 small stock that Ichikawa described for the Suiei Dorobo back in the 1980s. Of course, eating wild plants is to Samburu herders very nearly tantamount to “being Dorobo” itself. Given the milk, meat, and blood ideal of the “pure pastoralist” diet, the consumption of anything else is often implicitly equated with poverty. To say of a Samburu man that he “eats wild fruits” is to say that he’s poor. What must be remembered is that poverty of this sort is, for a great number of Samburu individuals, an unavoidable fact of life.

From a comparative perspective there is little difference in the ways in which members of the Loliin community use plants and the ways in which members of the Samburu community from Mbaringon use plants (Tables III-C, III-E). Again these two communities are in many ways now one and the same in terms of subsistence, cultural practice, etc. Thirteen plants¹⁶ were mentioned only the Loliin surveys. These include roots and tubers, seeds, fruits, and other plant parts such as leaves and bark. Nearly all of these foods come from plants found in the forests and hills; only a few are found along rivers and just one is found out on the plains. Loliin do recognize fewer of the plants that grow on the plains as food, which can most likely be attributed to their cultural history as residents of the forests and hills. *Lordo*, for example, has a much lower salience value to the Loliin. Of note is also the fact that few younger Dorobo women were able to list

¹⁶ These were *latapusha* (unid.), *lberetiai* (unid.), *lekumojino* (*Asplenium loxoscaphoides* Baker), *lgisi* (unid.), *lmukushi* (unid.), *lng’arbo* (*Dregea schimperi* (Decne) Bullock), *loiliai* (*Sarcostemma viminale* (L.) R. Br.), *loyiapasei* (*Aspilia mossambicensis* (Oliv.) Wild), *lpapaati* (unid.), *ltulelei* (*Solanum* sp.), *nakayamoi* (unid.), *nchung’e/nkaisisho* (*Oxygonum sinuatum* (Hochst. & Steud. ex Meisn.) Dammer), and *nkopito* (unid.).

extensive numbers of plants. I do think they may reflect a way in which Dorobo are now distancing themselves from their pasts as hunters and gatherers.

4.13.3 Honey

Honey has long been an important component of the Dorobo diet, and is most plentiful in the rainy seasons but serves as a critical resource during droughts when wildlife tends to be less abundant. Honey is harvested in leather bags or the wooden *ltaam*, and sometimes white bee larvae are taken to be fed to children. Both men and women consume honey, and there is typically little other preparation that needs to be done. Occasionally people would sieve the honey from the comb, and then boil or warm the honey in pots. Oil from *lpulei* pods would then be added, along with milk if available. This mixture is said to be very nutritious. Otherwise, the main importance of honey to Dorobo is social rather than nutritional: It is the main ingredient in Samburu beer.

Honey beer is produced from the honey gathered by Dorobo families, and is typically brewed by Dorobo men for home consumption by older men. Outside the Dorobo home, however, honey beer is vitally important for other Samburu households on ceremonial occasions. Honey beer is brewed in large pots, as will be mentioned in the following section, using a botanical fermentation process. Roots from the aloe plant, *sukuroi* (*Aloe secundiflora*), are first cleaned with the leaves of the *Croton dichogamus* tree, which gives them a pleasant smell. The aloe roots are then added to a mixture of honey and water in order to speed up fermentation. The beer is left to sit in a pot for one and a half to three days, at which point it should have begun to ferment and carbonate. Today sugar is often used in place of the aloe roots. Consumption of honey beer is in fact rare today outside of ceremonial contexts. On the other hand, brewing other types of

alcohol has become a thriving cottage industry of sorts in Samburu, as many women illegally produce alcohol from sugar, or grains such as maize or millet, for sale to elder men (Holtzman 2001).

Samburu Part III

Material Culture: Pots, Gourds, and Other Containers

Previous work on Samburu material culture has generally focused on personal adornment, particularly the elaborate beadwork and other decorations worn by women and *Imurran* (Nakamura 2005; Straight 2002, 2005). These studies often address material culture as markers of ethnic identity or as markers of a person's age and/or social status. Few studies have examined the material culture of daily domestic life. Herbich and Dietler did study containers made by Rendille, neighbors of the Samburu to north-east. They write, "The very existence of such a large and complex repertoire of vessel types to serve a relatively small range of utilitarian functions...is a salient indication that a lot of symbolic work is being performed by a heavy load of categorical distinctions" (2008:241). The same can be said for Samburu containers; there are numerous types of milk containers, for instance, that each serve slightly different functional but very distinct ceremonial purposes. Each type of container comes with well-defined prescriptions for use and there are strict rules about how, for example, these containers must be decorated, who can use them, and even where they must be stored.

This chapter will include a detailed description of commonly-used Samburu containers, from hand-made objects to the mass-produced goods also found in Samburu homes. I will begin with clay pots, move on to metal pots, and conclude with various types of serving and storage containers. I cannot include an exhaustive description of every Samburu container I saw while conducting my fieldwork, from the oil lamp made from a small glass bottle to the giant plastic water tank that sat just inside Prame's

doorway. Nevertheless the descriptions presented here should provide an adequate introduction to the subject of Samburu containers, and I hope to emphasize the material and symbolic importance of each. This chapter will also provide important background information necessary to understand the results from my household surveys (Chapter 7).

4.14 Types of Samburu Clay Pots

There are only three general types of clay pots (*moti/motioo* refers to containers in general, *motioo e nkulipo* more specifically refers to pots made from clay) used by Samburu. These pots are listed in Table 4.2. Two of them are cooking pots, small and large, and are identical but for difference in size. The ways in which these cooking pots are used will be discussed in Chapter 6. The third type of Samburu pot is a pot used for storing fried meat. This pot is shaped like a wooden milk container and will be discussed further later on in this chapter. Most other types of pots mentioned were simply variations on these themes. Several times, for example, women from the Lorroki Plateau mentioned a type of pot (*suburia*) that looked more like a sufuria, with a flattened rim and a wide mouth, than a regular cooking pot. Most (but not all) women say that these sufuria pots always had handles, in contrast to the handle-less metal versions they resemble. The sufuria pot was often said to be used to boil tea and/or cook vegetables, and I suspect that this pot form was most popular during and shortly after the British colonial occupation. No one today still has one.

Table 4.2 Types of Samburu clay pots

Type of Pot	Samburu Terms		Description
	most common:	less common:	
small cooking pot	<i>lkunate</i>	<i>ndeli</i> ¹⁷ <i>kainyungu</i> ¹⁸ <i>mparash</i> ¹⁹	Small globular pot with short neck, always has handles.
large cooking pot	(none)	<i>moti sapok</i> <i>salilinga</i> ²⁰	Larger globular pot with taller and straighter necks, always has handles.
meat-storage pot	<i>moti</i> <i>lekweshi</i>	<i>moti lekwi</i> <i>lmoti</i>	Pot shaped like a wooden milk container, with no handles, used for storing fried meat.

Small cooking pots and large cooking pots are owned by both Dorobo and Samburu herders, and both are still made on occasion by the few Dorobo potters in Samburu still practicing their craft. The only storage pot, *moti lekweshi*, I ever came across was in the Nairobi National Museum. Mpejo, the Loliin potter I frequently mention, never made *moti lekweshi* due to low demand for them by the time she started potting in the 1970s. She did remember *moti lekweshi* being made by older generations of potters. A number of other ceramic forms were made by Dorobo potters for use within the Dorobo community; those forms will be discussed in a separate section at the end of this chapter.

4.14.1 Cooking Pots

¹⁷ Mpejo, the Loliin potter, mentioned making pots called *ndeli* that were somewhat smaller than *lkunate*, with slightly rounder bellies and shorter necks. These were mostly used to cook milk and other foods for children.

¹⁸ One of the Samburu words for a small pot (or big pot, as Mpejo asserts), *kainyungu*, is rarely heard but speaks to a history of contact between the Samburu and Bantu-speaking ethnic groups such as the Kikuyu. Etymologically, **-yùngú* is reconstructed to Common Bantu, and *ka-* is a frequent Bantu diminutive prefix (Ellen Contini-Morava, personal comm.). The Gikuyu word for pot is in fact *nyungu*. In Kiswahili the term heard most commonly is *chungu/vyungu* (pl.) but *nyungu* is used as well.

¹⁹ Mentioned only once, by a Loliin man who says they were used to cook vegetables.

²⁰ Mentioned only once; I was later informed that *salilinga* actually refers to a type of metal sufuria, not a clay pot.

There is a remarkable collection of Samburu pots housed in the Ethnography Department's collections at the Nairobi National Museum. At the very beginning of my time in Kenya I made an appointment to see them, and was ushered into a large room that served as temporary storage for the museum's entire ceramic collection while its permanent home was being prepared. I was then informed that there was no searchable catalog system. I had simply to pick out the pots that looked interesting, at which point I would be shown a matching catalog card pulled from the depths of a massive file folder system. I thus commenced a search for "Samburu" pots, which I hoped were nestled there somewhere among the hundreds if not thousands of other pots collected from across the country. I had a vague idea of what the Samburu pots might look like, as I had seen a pot in the Lesorogol house two years before, and there are two small drawings of Samburu pots in an edited volume on pots and potters from Kenya (Figure 4.15). Thankfully the Samburu pots were mostly fairly easy to find, being the only black pots in a sea of brownish-orange. Nearly all of these pots had round bellies, short and constricted necks, and two handles on opposite sides. Two other pots, brown in color, were given away by their forms and simple decorations, and one pot appeared to be the handleless pot in the aforementioned drawing. These were all, to me, recognizably "Samburu." I picked out ten pots in the end. I was unsure about only one. Nine pots indeed turned out to be labeled "Samburu," and the tenth mystery pot was labeled "Rendille." I later discovered that the Rendille pot had been made by Samburu Dorobo. Photographs were taken of all and can be seen in Appendix I. Every pot shown in Appendix I is a cooking pot, with the exceptions of numbers 8 (a medicine pot or water pot, Figure I-J), 9 (a meat storage pot, Figure I-K), and 28 (a water pot, Figure I-Z).

Figure 4.15 Diagram of Samburu pots (drawings from J. Brown 1989b, labels have been added)

The labels on the drawings in Figure 4.15 explain the terms used by Samburu to describe parts of pots. As in most languages around the world, Samburu terms for parts of pots (mouth, neck, shoulder, etc.) generally correspond to parts of the human body. Some might argue that, to Samburu, pots represent specifically female forms. *Nkosheke* or “stomach,” for example, can also refer to the womb. Broch-Due (2000:174) has argued the same for Turkana pottery: “Cooking pots are, in form and meaning, imitations of the maternal womb” and are connected to the “symbolizing of the cosmos as a whole.” Specific symbolic aspects of Samburu pottery and other types of material culture were far beyond the scope of my research, but I will return at the end of this thesis to the ways in which cooking pots are generally understood within broader Samburu systems of meaning.

The decorative elements on Samburu pottery are relatively limited in variety. There is only one primary way in which decorations are made, and that is by applying thin bands of clay in simple patterns on the necks and shoulders of vessels. Common

styles vary by region; those styles will be discussed further in Chapter 5. Sometimes the applied bands are decorated further with hash marks or impressions made with acacia thorns. These hash marks are called *lkigerot*, a word that also applies to marks that have been written or drawn elsewhere. The marks left by ritual scarification of the body, for example, are also called *lkigerot*. Decorations on pots can be seen as wholly different from *aikod*, or decorations added to an object such as beads sewn onto gourds. An extra band around the rim or the neck is sometimes added for decoration and to improve the overall strength of the pot.

There is no difference between pots that are used in domestic contexts and pots that are used in ceremonial contexts. They are the same pots. Larger pots are preferred for ceremonies, because they will be used to boil larger amounts of bone soup, but a woman will simply bring the largest of the pots she has in her house to a ceremony. Pots will often now be bought specifically for ceremonies, but these will be brought home and used in the house. Although wooden containers or gourds for ceremonies may be more highly decorated than some containers used for everyday milking (see the vessel on the left in Figure 4.22, this chapter), this is not the case with cooking pots. The use of a pot still signifies the death of an animal, regardless of whether or not the animal was killed for food during a time of drought or for a ceremony. The occasion, and the pot, is treated with the same respect. To have extra pots lying around only for ceremonies would be unheard of, as it would seem to invite the death of one's livestock.

4.14.2 *Moti Lekweshi*

Moti lekveshi are small clay pots shaped like carved wooden milk containers. Although once common throughout Samburu, they are now extremely rare if not gone

entirely. The only *moti lekweshi* I ever saw was in the ethnographic collections of the National Museums of Kenya, and had been collected in the 1970s near Wamba (Appendix I, Figure I-K). This type of pot actually has two names, both commonly used. *Moti lekweshi* means the “pot at the head of the bed,” and refers to where in the house this pot is kept. These pots were owned exclusively by elder men, and were always hung at the head of their beds. The second name, *moti lekwe*, means “the first pot,” or the first pot used in the past. How true this is, I do not know. *Moti lekweshi* are, in form, quite different from Samburu cooking pots. They have small, globular bodies with long, narrow straight necks, exactly like carved wooden milk containers. They are not blackened by smudging during the firing process but rather left their natural brown. They are decorated as all other pots are, however, with simple bands of appliquéd decoration near the neck, and have flat lids made from either leather or clay. These pots would have been hung with leather straps attached to the lids, or in some cases *moti lekweshi* may have had small handles.

Moti lekweshi were primarily used to store deep-fried meat. They were also used to store fat or ghee, but most Samburu remember these pots as generally having held strips of meat. This meat was fried so as to “never go bad,” and fat could be added for energy. This method of preparing meat made it quite soft, and it was said to be particularly good for elders who had lost their teeth. The hump of a cow, a delicacy, could likewise be prepared this way and stored in a *moti lekweshi*. As mentioned, these pots belonged to elder men, and no one else would be allowed to use it or carry it around. A father with a *moti lekweshi* would dole out small portions of what was inside to his children and wives. There may have been a correlation between wealth and the ownership

of moti lekweshi; one elder from Barsaloi mentioned that rich people used to own them. His father had had two wives and two moti lekweshi, one for each house. Another elder near South Horr said that people who had lots of livestock used these pots for meat, while people with no livestock or small numbers of livestock used them for honey.

On the catalog card for the moti lekweshi at the National Museum in Nairobi, Jean Brown recorded that these pots are used by both Dorobo and Samburu for storing meat and fat for the dry season, when other foods might be scarce. Although I am quick to accept functional arguments for the importance of other types of pots, I am less willing to do so for moti lekweshi. First, although I acknowledge that frying meat can prolong its use-life, the amount of meat/fat stored in moti lekweshi is too small to account for any significant part of Samburu diets, even in the dry season. This meat is also typically distributed among quite a number of people. Second, one elder explained to me that whenever the meat in the moti lekweshi was finished they would slaughter another sheep, so that the pot would always be full. This was done even in times when people had lots of milk, and it was especially important to have meat in the moti lekweshi for visitors to the house. Finally, there is no persuasive argument to be made as for why fried meat and fat could not, in terms of spoilage, be stored in a wooden container instead.

Moti lekweshi are a liminal form of material culture, occupying a space in the Samburu world between milk and meat, life and death, wooden or gourd containers and clay pots.²¹ Moti lekweshi exist only because milk containers are materially and

²¹ I would refer the reader to Galaty (1979) for a much more in-depth discussion of food substances and technologies in Maasai symbolism: "...Milk can be seen to derive from operations by water and wood, meat by those of iron and fire. An initial proportional series of substances relating to the pastoral process can now be formulated: Water-Wood/Milk = Fire-Iron/Meat. The superordinate stands to the subordinate as means to ends (raw materials in the first case, tools in the second); the left side of the equation stands to the right as constructive to destructive, and reversible to irreversible processes, including birth/death" (p. 807).

metaphysically inappropriate containers for storing meat. Wooden vessels and gourds are made to contain milk, to store life. Putting the flesh of dead livestock inside a wooden or gourd container would be a grave violation. Clay is, instead, the medium associated with fire and the death of one's livestock. Cooking pots are for boiling meat and bones in times of either great need or ceremony, however, and to use them for storage would be wrong as well. Moti lekweshi are the Samburu compromise: storage vessels made from clay. They were treated in every observable way as wooden or gourd vessels rather than pots. A wooden milk container is cleaned, for example, by rubbing a smoldering stick of wild olive wood all around the inside; the ashes are said to get rid of germs. This practice also gives the milk stored inside a very distinctive smoky smell and taste. Moti lekweshi were cleaned this way as well. Cooking pots, in contrast, are never cleaned with fire. They might be brushed out with a cow's tail or a piece of cloth, but never with fire.

4.14.3 Other Pots

In recent decades, potters in Wamba would try out new ceramic forms in hopes that new products would sell well at market. At one point, for example, potters were selling ceramic pans for making pancakes. These were apparently quite popular, because the ceramic pans kept pancakes from burning better than metal pans did. I doubt that there was ever huge demand for pancake pans, though, mostly because Samburu hardly ever make pancakes. I would assume that such experimental pots and pans were most often bought by wealthier Samburu families who had settled down more permanently; indeed it was a woman from Siambu who raved to me about her two Wamba pancake pans. Experimental forms, including pots with lids, have rarely ever caught on in Samburu, but I do think it important to point out a willingness among Samburu potters to

innovate when market opportunities became available. Although Samburu cooking pots stand as tribute to a tremendous conservatism in form and style, potters *did* occasionally introduce new forms for new purposes unrelated to traditionally “pastoralist” subsistence practice. Some development projects are even now hoping to encourage the production of new ceramic goods such as environmentally-friendly ovens that greatly reduce needs for firewood.

4.15 Other Cooking Vessels

4.15.1 Sufurias

Sufurias are the ubiquitous aluminum cooking pots of eastern Africa. They can be purchased in markets or small shops, and are produced in Kenya’s informal manufacturing sector (called the “*jua kali*,” or “fierce sun,” for its open-air workshops) (Donaldson 2006). Nearly all sufurias share a common form. All have flat bases with rounded edges and out-turned, flattened rims. Flat lids can be purchased at some locations, although these are fairly rare and are one of very few modifications and/or additions that *jua kali* supply to the market. Although sufuria forms vary little, there is almost no standardization in terms of sufurias sizes. Figure 4.16 shows a number of sufurias in a range of sizes, from the larger one on the hearth to the smaller ones on the rack just behind. I have chosen to list the ranges of volumes for “small,” “medium,” and “large” sufurias in Chapter 7, Table 7.1, as reported to me by Samburu women during the course of my household surveys. Sufurias are most commonly used for preparing tea, which is typically done morning and evening. Nearly all other foods, besides milk, are now also

Figure 4.16 A Samburu “kitchen,” or hearth area, with shelves in the back holding numerous types of containers. Frame is included for scale.

Figure 4.17 Cast iron cooking pot, with bone soup.

cooked in sufurias. Larger sufurias are used for *loshorro* or *ugali*, while smaller sufurias are used for vegetables such as sukuma wiki. Some women construct stills out of both small and large sufurias to brew illicit corn liquor, *chang'aa*.

4.15.2 Other Metal Pots

There are two types of metal pots (*moti e chumai*) that are heavier and more expensive than sufurias. They do not have specific names. The first are very heavy cast iron pots (Figure 4.17) that only gained popularity in Samburu somewhat recently; Noosoritare mentions that people started using them just before the 1990s. They are vastly preferable to sufurias for a number of reasons. The first is that they look like clay pots, the only difference being that the handles are oriented horizontally rather than vertically. The second is that they retain heat like clay pots and will not burn food, and the third is that they should last a lifetime. I never saw these cast iron pots for sale in Samburu, so I presume that most are brought from Nairobi. The other type of heavier metal pot is more similar to a sufuria, but has a constricted neck and handles on either side (see Figure 4.18). These can be bought in the larger general shops found throughout Samburu. They are more substantial than sufurias, and foods can be slow boiled in them more easily. Prame's wife would often make *githeri*, a mix of beans and maize, in the pot shown in the figure.

Figure 4.18 Preparing food for a party; note the following cooking and serving containers: (1) sufuria, (2) heavier metal pot, (3) tin tea cups, (4) serving platter, (5) plastic jug, also (6) chapati block

Four-liter USAID steel cans (Figure 4.19), manufactured to hold a fortified vegetable oil distributed throughout Africa as a relief food, are sometimes used by Imurran at cattle camps and meatfeasting sites, especially now that women rarely if ever lend them their pots. Kimbo-brand vegetable shortening used to be sold in metal tins, and

those were also popular among Imurran in the past. Soups and other liquids can be boiled in steel cans directly over a fire, or a certain type of round white stone can be heated up and dropped in instead. The cans are especially popular at cattle camps, where Imurran stay and sleep with very spartan furnishings and cooking equipment. They would often use stones to quickly boil milk, I was told, which they would then drink like tea. The metal cans are most often left behind after use in the bush. One woman I spoke to in the lowlands said that she sometimes used a USAID can as a cooking pot in her home; otherwise this is highly uncommon.

Figure 4.19 USAID steel cans found in a rockshelter at Garma

4.15.3 Kitchen Goods

I will lump a number of different items recorded during household inventories under the label “kitchen goods.” These include enameled aluminum teapots, thermos flasks, wood blocks for rolling out chapati, cast-iron frying pans for chapati and pancakes, plastic jugs for pouring water and sometimes for milking, and an insulated “hot dish” container. Figure 4.18 shows a jug and chapati block. Teapots and thermoses are by far the most commonly-owned kitchen goods in Samburu, though, and they are both generally used to store prepared tea for short periods of time. All of these kitchen goods can be bought in larger towns such as Maralal, and families with greater expendable income might have a few items from this list.

4.16 Serving Containers

By employing the term “serving containers” I do not mean suggest elaborately decorated vessels, intended for some sort of public display. I mean plates, cups, bowls, and other kitchen goods designed for serving and consuming the food and drink of everyday life. These are the Samburu dishes. The most common serving containers in Samburu today are relatively cheap enameled tin cups, several of which can be seen in Figure 4.18, used primarily to serve and drink tea. These tin cups are also used to serve family and guests fermented milk, and tin cups are also occasionally used for drinking water and alcoholic beverages such as honey beer and grain liquor. Although some people have acquired imported and more expensive ceramic mugs, those are still fairly uncommon. A few women had drinking glasses and/or cheap plastic tea cups.

Enameled tin plates and small bowls are used to hold loshorro, ugali, and other prepared foods such as beans, cabbage, and kale. Many women in the lowlands were using plastic “Kasuku”-brand shortening tubs as makeshift bowls. Only one serving vessel of a different type was noted in household inventories, and this was the large enameled platter owned by Prame’s wife. It can be seen holding uncooked chapatis in Figure 4.18. Dishes were generally small and intended for serving individual portions of food; even the large platter was most often used as a convenient surface for food preparation rather than serving.

Before the introduction of metal serving vessels people would have used a variety of hand-crafted vessels. Carved wooden lids for milk containers were (and still are, sometimes) used for serving milk. Cups made from cattle horns were used to serve and drink honey beer; each elder man would have had his own. Men also used small gourds, similar to the “lboliboli” gourds used to store fat, that were used for carrying and drinking beer. Carved wooden bowls (*ncharraa*) were used in the home for eating soup. I was told that every person, adults and children alike, would have had a wooden spoon and also a wooden bowl or a bowl made from a gourd. Women might also have a small wooden plate from which she served meat with a wooden spoon (*lmerisie*). None of these types of containers were seen during the course of this project; it seems they have nearly if not all been replaced by metal and plastic. One woman in the lowlands did have a wooden bowl, called a *nyatupa*, made by Turkana. Milk container lids used as cups were not tallied separately as part of this project. Nor were serving utensils such as spoons, forks, and knives formally counted.

4.17 Water Containers

The consumption of water by pastoralists on a *household* level is rarely discussed in either development or academic literature on the human ecology of this way of life. Certainly ensuring access to clean, safe drinking water is a perennial priority in terms of efforts to provide for basic human rights, but there is little quantitative data available on the needs pastoralists may have for water beyond that required for livestock. Observational research in Samburu suggests that very little if any plain water is directly consumed, even when milk is in short supply. Herbs can be added to plain water to make it palatable, but this is done only on certain occasions. Some elders, for example, mentioned that *Imurran* at rockshelters might fill a goat's-stomach bag with water collected in a plastic jug, add the herb *Ikiloriti* (*Acacia nilotica* (L.) Del.), and then hang the bag from a tree so that everyone could have a drink.

Tea is now the primary source of hydration for everyone, and indeed the boiling process renders even murky river water safe for consumption. People drink on average two cups of tea per day (see Holtzman 2003); when milk is available a smaller proportion of water is used. Water use in the preparation of food has presumably increased since foods such as maize and beans have become staples, but at least small amounts of water have always been used to make bone soups. Water is also needed to rinse dishes and to bathe, and when more readily available water is used for laundering clothes. Women will now often carry large loads of laundry to a water source; presumably this would not have been necessary when people wore clothes made of leather. Plastic wash basins have become a useful and common accessory. Water is sometimes carried back to the boma for young livestock, and in some areas women irrigate small garden patches of kale and

other vegetables for household consumption. Ethnoarchaeological research in Maasailand suggests that women typically use twenty liters of water for their households per day (Marshall and Weissbrod 2009); I suspect that during my fieldwork Samburu women were using much less due to drought.

Plastic jerrycans have effectively superseded all other alternatives as favored water containers for pastoralists throughout eastern Africa. Samburu women always collect water, now, in ubiquitous yellow plastic jerrycans (Figure 4.20). These are typically round, twenty-liter (~5.3 gallons) barrels, many originally used for cooking oil but repurposed for water transport and storage. Flat bands of rope are tied around the jerry cans, and women then carry the jerrycans on their backs by slinging one strap around the front of their foreheads and then hunching forward. Smaller plastic jugs are used by younger girls who are unable to carry twenty full liters, and are also used around the house for storing oil and other purposes.

One look at a Samburu woman carrying nearly fifty pounds of water on her forehead is enough to understand how extremely labor-intensive water collection and transport is. If women live in close proximity to water sources they may collect water twice a day, if they live farther away they make take donkeys and collect enough water for several days. Donkeys can greatly reduce labor demands on women; Marshall and Weissbrod (2009) estimate that in Kajiado District a Maasai donkey typically carries fifty liters of water per trip to a water source (~8km), every other day. Having donkeys to transport water also allows for much greater flexibility in pastoral patterns of mobility and rangeland management. Boreholes are now reducing distances women have to travel for water, and increasing the availability of cleaner water, but overgrazing and increasing

settlement around boreholes and towns bring their own sets of serious problems. Control over access to these water points is also often a primary source of conflict, even as some other quality of life measures may be improved (Gomes 2006).

Figure 4.20 Collecting water in plastic jerrycans at the Kisima borehole

Previously, Samburu made water containers from the stomachs of livestock, either cattle or small stock. These were generally used for fetching water and could last for up to a month. Water containers were also made from animal skins and the bladders of small stock. Bladder containers were used for both water and for storing fat, and were made by inflating sheep/goat bladders like balloons which would then harden when dry. Water could also be carried in gourds, the same ones used for milking and milk storage. A big leather pouch, *siogiog*, could fit four or five gourds which were tied together and carried

on the back. Pots were rarely if ever used for fetching water; Mpashie guessed that such pots would have broken or the water source would have dried up. Only Loliin women ever mentioned collecting and transporting water with clay pots, although I could elicit few opinions from them as to why clay pots would have been preferred over wooden, gourd, or animal-skin containers for these purposes. Clay pots filled with water would have been significantly heavier than other types of containers for either women or donkeys to carry. Water is said to be cleaner when stored in clay pots rather than gourds or skins, but in terms of transport the use of clay pots may have been a matter of cultural or individual preference.

Water storage was occasionally done in clay pots, although accounts of this happening with any regularity were only given to me by members of the Loliin community. Water pots were the same large pots men would use to make beer. Highly mobile Samburu families, such as those with lots of livestock, were highly unlikely to have used and transported these pots. Most pastoralist Samburu women would tell me that they never stored water at all, and if they did it would be in wooden containers, gourds, or woven containers rather than pots. One woman from Siambu claimed that her mother had two large water storage pots which were several feet across and had lids but no handles. Her mother would take a large bag, put the pot in the bag, and put the pot in the corner. Water stored in these pots would be cool. These large water pots from Siambu were most likely a relatively recent innovation, however, as only recently have Samburu women started storing large quantities of water within and outside the home. Four gallon (~15.1 liter), rectangular plastic jerrycans, or *debe*, are used by families throughout Samburu for water storage, and giant plastic water tanks for collecting rainwater are

becoming a more common sight outside larger and more permanent homes belonging to wealthier families. I asked the daughter in Siambu whether or not her mother's clay water pots would have been too big to move, and she said that mobility would not have mattered, that such pots could have been carried on donkeys. I doubt that anyone had ever tried, but her remarks seem consistent with the general Samburu attitude that mobility is hardly ever a wholly limiting factor in the transport of household goods.

4.18 Wooden Milk Containers and Gourds

Mobile pastoralists are assumed to have little need for large, heavy storage vessels such as those used by other communities for water, honey, and grain. The one type of storage container that *has* been historically associated with use by pastoralists in eastern Africa, at least, is the gourd or gourd-shaped vessel. Samburu use the term *mala*, plural *malasin*, to refer to similarly-shaped containers made from either bottle gourds (*Lagenaria siceraria*) or carved wood. In the ethnographic literature these containers are often jointly referred to as “calabashes” (e.g., Straight 2007b). Lids are fashioned from wood or leather, and all have leather carrying straps. The most common types of wooden or gourd containers are for milking and for short-term milk storage, although many types can serve either purpose.

I identified nineteen different types of wooden milk containers and gourds owned by Samburu men and women, and I am sure many others exist as well²². These containers can be distinguished by size, shape, and decoration. Figures 4.21 and 4.22 are

²² Bilinda Straight, for example, shows a “nyatii” for uncircumcised boys on her webpage: http://homepages.wmich.edu/~bstraigh/eastafrica/samburu/samburu_matcult/samburu_matcult15.html

photographs of several different wooden milk containers and gourds; line drawings of common types have been done by Prame Lesorogol and can be found in Figures 4.23-25. *Nkilip*, *lkantirr*, *naitu*, *nkoiting* are each wooden vessels used primarily for collecting milk. *Nkilip* can range in volume from less than half a liter to over five liters; smaller *nkilip* are used for milking small stock. They can also be used for storing milk for short time periods, and a girl will carry a small *nkilip* (also called the *mala e nkoriong'*) full of milk on her back when she gets married. The *lkantirr* (Figure 4.21) is a bigger version of the *nkilip* and can be used by Imurran. Young boys will take *naitu* when herding animals, and can also be used by Imurran for the collection and storage of blood. The *nkoiting* is another medium-sized, multi-purpose wooden container with a flat leather lid, used primarily for collecting and storing milk for the husband. The *nchonkorr* is highly decorated and often used during ceremonies and for blessings; girls often drink milk from them. *Nchonkorr* can also be used for milking but can only contain small amounts. Wooden *seenderi*, often used by elder men, and *lng'oorrooshi* are larger containers used for storing fresh or fermented milk.²³ Milk gourds include *nkirrau*, the Imurran's large *mala sapok*, and the *siang'au* used for longer-term storage of milk. Round *nyatio* are used for making butter, and *lkotumpe* are used for making beer. *Nyaanja* are used for storing beer.

²³ Hodder (1982:94) illustrates a "*sendere*" container with an onion-shaped lid, round body, and narrow neck. He claims that this type of container is used by Samburu for storing and transporting honey. I have no explanation for this.

Figure 4.21 Lkantirr (wooden milk container)

Figure 4.22 From left to right: nchonkorr, nkirrau, nkilip, nkilip (all wooden milk containers, except for the nkirrau, a gourd)

Other containers can include the small wooden *nkodoos*, a cylindrical form often used in ceremonies to contain blood and other substances such as butter. The tiny *iboliboli* gourd is used to store fat, and is also carried on a girl's back during her wedding. Lkidong can be made from gourds or wood or now even small plastic canisters; they are generally for storing tobacco. *Ntutua* are watertight baskets woven from palm fronds, shaped like gourds. They are used for storing and carrying milk or water, particularly in the lowlands. The *lkurun* was only mentioned to me once, and is apparently a type of wooden vessel. Milk containers made by Turkana ("*lkumei*") are often different in form, with the lid flaring out at the top, and are sometimes used in Samburu if people have family ties. Although each of the vessel types listed generally has a prescribed use, many can be used for certain other purposes if needs arise. Wooden milk containers can also be used to store porridges made from wild seeds gathered by women, for example, or to store fat for applying ochre. Over five hundred individual wooden or gourd containers were recorded during my household surveys. Only two women had none.

Every morning and evening a woman will collect the milk of her family's herds into separate vessels for herself, her husband, her Imurran sons, and the rest of her children. Now, often, women will milk animals into plastic containers, and then pour the milk into *nkilip* or other milk containers for storage. The smoke of smoldering wild olive (*Olea europaea* ssp. *africana*) sticks used to sterilize milk containers gives this milk a distinctive and much-loved taste. Both carved wooden containers and containers created from gourds are made by women and are indeed strongly associated with women and their domestic activities; other ethnographers have written extensively about relationships

between household material culture and gender in northern Kenyan pastoralist societies (Dahl 1990; Prussin 1987; Straight 2007a). Straight's (2007b) book on Samburu divinity and belief hints at the profound depths to which milk containers and other objects are central to Samburu conceptions of life and death, self and other.²⁴ I would refer the reader to her scholarship for a much more nuanced and complex understanding of Samburu material culture than will be evident from this dissertation. Dr. Straight, just before I left for the field, suggested that I would soon discover the ways which wooden containers and gourds (containing milk/life) serve as a structural counterpoint to pottery (containing meat/death). I thank her for sharing those observations, and I now believe these symbolic distinctions are archaeologically relevant in more ways than one. Milk containers and pottery are discarded, for example, in fundamentally different ways. I will discuss both wooden containers and gourds in a bit more detail here, to frame their production and use in historical and ecological context.

4.18.1 *Wooden Milk Containers*

Everyone seems to agree that carved wooden milk containers have been a part of the Samburu cultural repertoire for as long as can be remembered. They are made by women, who make containers for themselves and for their husbands and children. These wooden vessels are carved from the wood of *Commiphora* trees. A sharp metal tool, *lorisie*, is used for carving and to cut out leather lids and straps. This tool is also used in scraping hides, and is usually provided by *lekonono* blacksmiths. Many women disagreed

²⁴ About Iboliboli, for example, she writes: "The Iboliboli that a bride carries filled with fat is not only a prayer for fertility, it *is* a child. As such, neither this calabash nor any other should be given outside the family...The bride smears herself with the fat contained in the Iboliboli and she may give some to postmenopausal women to smear on themselves – she does not fear that they will steal her child-*lorien*. No one, including herself, may eat this fat however – to do so is to eat her unborn children" (88-89).

with me when I would suggest that wooden containers are specifically designed to look like gourds, although the gourd form may have served as inspiration some time long ago. Certain container forms are associated with men, particularly those made with flat leather lids (*sioote*) (Figure 4.23). The “onion-shaped” lids (*lkapuri*) seen in Figure 4.24 are carved from wood and are thought of as feminine forms. They can be decorated with animal blood and charcoal, along with beads, cowrie shells, and other ornaments, depending on their intended use. Women often make and decorate milk containers for their children, and these containers are a source of great pride. Although wooden or gourd containers for ceremonies are often (as with pots) the same containers used in everyday life, some women say that vessels designed specifically for ceremonial occasions would be more heavily decorated than others. The *nchonkorr* shown in Figure 4.22 would be one good example.

Figure 4.23 Wooden containers with flat lids

Figure 4.24 Wooden containers (except for the basket *ntutua*)

4.18.2 Gourds

The history of gourd use in Samburu is a matter of some ambiguity. It is clear that at least the larger gourds, now used for milking, butter, and beer, were first brought to Samburu by the Meru or some other group of neighboring farmers in or around the 1920s. Some people suggested that Samburu first started getting gourds during the Lmarinkon ageset in the 1880s, although one of the oldest women (90+ years) I had the privilege to interview explained to me that Samburu only began to use gourds when she had already had five children. Samburu say they bought gourds from Dorobo, who

acquired them from Meru²⁵ traders coming over from the lowlands. At some point Samburu traded with Meru or other agriculturalists directly, exchanging sheep for big gourds full of *loikempe*, fermented maize meal that had been roasted and cooked.

Figure 4.25 Containers made from gourds

²⁵ The Meru are commonly said to be the source of most gourds now seen in Samburu, although many people mention the Kikuyu if prodded as well. The apparent ambiguity and confusion that exists in regard to these neighboring groups over half a century ago is not unexpected, given that rigid ethnic identities are in large part a legacy of the colonial regime. Volumes have been written about the highly fluid ethnic, economic, and political boundaries that likely characterized the eastern African cultural landscape prior to the great disruptions of the colonial era. For an example of how ethnicity in Kenya has changed and continues to changed, see Lynch 2006.

The first gourds acquired by Samburu were apparently nyatio and lkotumpe, the large round gourds used for churning butter and to make and store beer. Elders associate big round gourds with the Meru, and are the preferred shape for gourd containers in Samburu. Long, thin gourds are found in Maasailand and are preferred by Maasai, although Samburu would occasionally obtain them through trade with the Kamba. Gourds were not, originally, used for milking as *nkirrau* are today. Rumor has it that one family in Siambu still refrains from milking animals with gourds, and a general reluctance to use gourds for milking may explain why *nkirrau* are much less common in the lowlands than they are on the Lorroki Plateau and in the highlands. Even among women who do use gourds for milking, many will say that they only use gourds to milk docile cows. They are easy to break, and a sharp kick to a gourd will destroy it.

Some women argue that the small Iboliboli gourds have been in Samburu since the beginning, and only the larger gourds came from elsewhere. When the first Samburu came to the area, they say, the Dorobo already had Iboliboli. Those Iboliboli, I was told (perhaps with no small degree of nostalgia), used to be bigger, taking the slaughter of very large cows to fill them with fat. Other women, including members of the Loliin community, say that Dorobo have had all kinds of gourds for a quite a long time. Just how long, historically speaking, is unclear. Some Samburu women disagree with all of these accounts, claiming instead that even Iboliboli were introduced from the outside.

No one is sure when Samburu themselves started planting gourds to make containers. In keeping with their general aversion to farming Samburu maintain no reason to cultivate or otherwise manage any indigenous plants, although this is changing. Gourds used for containers are one exception, as they do save seeds from plants that produce

gourds with appealing sizes and shapes to scatter along their fences. An interview with a member of a family in Siambu known for growing gourds yielded some information about the different types of gourd plants familiar to Samburu. He distinguished between three different plants that are similar except in the sizes of gourds they produce:

- One plant that grows big gourds, for lkutumpe and nyatio. The sizes of gourds produced by this plant depend on where it has been planted, as it does better in hotter areas. If there is not enough rain, however, you will only get medium-sized or small gourds. The gourds from the big gourd plant are completely green, with no white spots. The biggest gourds can support themselves, and can be bigger than the door opening to a house. They may hold as many as 30 or 40 liters of beer.
- Another plant that grows only medium-sized gourds with big bellies and small mouths, which are used for milking and storing milk. This plant can also produce a long and narrow gourd like the Maasai type, which has to be propped up when growing. The gourds from this plant are green with white spots.
- Finally the lboliboli plant which grows only small gourds, also used for lkidong. Green with white spots, but the lboliboli plant produces gourds with relatively bigger, rounder bellies.

Noosooritare agreed that lboliboli come from a different type of plant than either the medium or the large-sized gourds. All plants, she explained, have the same flowers, but the leaves are different. The larger gourd plants have dark green leaves and branches, while the lboliboli plant has brighter green leaves. Another woman from the Loliin community also notes that the big and small gourds come from different types of plants,

and that the big gourd plant has larger leaves. One woman from the lowlands explains that there is a type of wild gourd plant that produces round, spotted gourds with no necks. They are not made into containers, although boys make soccer balls from them. They grow on vines in trees, near the Seiya River in the lowlands. Three wild gourd species have thus far been identified in Kenya²⁶, and it is unclear whether or not this plant is either among them or unrelated.

I did not collect herbarium specimens of gourds in Samburu due to the scarcity of such plants still alive due to drought. I would strongly suggest that more ethnobotanical research needs to be done on this subject, particularly in identifying the diversity of gourd landraces utilized in this region. Such an attempt would complement ongoing efforts by the Kenya Resource Centre for Indigenous Knowledge, the National Museums of Kenya, and the International Plant Genetic Resource Institute Sub-Saharan Regional Office to document and preserve the known Kenyan landraces of *L. siceraria* and its wild relatives. Collective efforts are also being made to collect as much locally-held information about gourds and their uses as possible. Although the Maasai, Turkana, and several other ethnic groups have so far been targets (Morimoto et al. 2005), there has not yet been any such undertaking among the Samburu. A recent development project²⁷ among a Kamba community in southeastern Kenya has successfully begun to address the disappearance of local knowledge and practice surrounding the use of bottle gourds owing to the widespread adoption of plastic containers. Unless a similar initiative can be implemented in Samburu, I worry that this aspect of pastoralists' cultural heritage will soon be lost,

²⁶ *L. sphaerica*, *L. breviflora* and *L. abyssinica* (see Morimoto et al. 2005; Morimoto et al. 2006).

²⁷ "Community-Based Documentation of Indigenous Knowledge, Awareness and Conservation of Cultural and Genetic Diversity of Bottle Gourd (*Lagenaria siceraria*) in Kitui District in Kenya." See <http://www.terralingua.org/bcdconservation/?p=82>.

with important implications for local biodiversities and future research into the domestication of container plants.

Figure 4.26 Gourd plant growing inside a boma, Lorroki Plateau

Samburu do not claim to often save seeds of particularly well-shaped gourds, or of sturdy gourds, or of gourds that do well in drought. They say that you cannot predict what a gourd will look like, and they generally attribute gourd-growing success to the individual that took care of the plant rather than any inherent qualities possessed by the plant itself. Gourds only like some people, and will refuse to grow for others. People still chuckle about the gourd shown in Figure 4.27, though, found growing in the highlands sometime around 1984. This gourd, used now for milk storage, is quite large and odd in

Figure 4.27 Milk storage gourd, in the highlands

shape. The man who stumbled upon the plant kept an eye on it for the rest of its life hoping for additional gourds, but it never produced a single fruit other than this one. For years he also tried to propagate seeds taken from this singular gourd, with no luck.

There are several reasons why bottle gourd plants can often be found growing on fences. A woman might scatter seeds along the fence to her *boma*, mostly because the vines need support as the gourds grow and take shape. If a gourd is hanging from a vine on a fence, it will develop a nice, straight-necked shape. If on the ground, the vines will droop and bend the gourd's neck. Occasionally efforts will be made to influence the shape of the gourd; for example, a hole was dug underneath the gourd pictured above, to support it while growing in order to give it a nice rounded belly. The specific type of container that will be created with the gourd depends upon both its shape and its owner's

preference. Another reason to sow gourd seeds along a fence is for protection; a wall of thorns or tall wooden poles might rebuff any porcupines or elephants in search of a snack. Some say that gourd plants can also be found growing wild in the forest, in places known to be frequented by those same elephants that wander onto the plains. It should also be mentioned that Samburu sometimes take advantage of the fact that gourds grow well in old, abandoned settlements where nutrient-rich soil has been created by accumulations of dung. Other wild plant resources that grow well in old settlements are discussed in my section on Samburu subsistence.

Gourd seeds do not need to be formally planted; simply scattering them on the ground often works. Even though many Samburu are now starting to cultivate certain crops such as maize, historically they have been reluctant to dig and farm. Sowing gourd seeds along fences is culturally acceptable precisely because it requires so little in the way of preparation and actual planting. A *laissez-faire* outlook prevails: Samburu can reap rewards by simply letting the plants do as they choose. The fact that Samburu have been highly residually mobile until fairly recently has likewise never been a deterrent to the cultivation of gourds. The reason for this was explained to me thusly: There are only two times when people must move. The first is lack of pasture during the dry seasons, and second is insecurity (i.e., threat of violence). Afterwards, people come back to the same places. No one will take the gourds while you are gone.

4.19 Other / Camel Containers

Baskets (*mbasige*) are made from dried doum palm leaves and are relatively rare in Samburu. These conical baskets are used for only one purpose, which is to milk

Figure 4.28 Camel milking basket, *mbasige*

camels. Basket-makers can only be found in the lowlands where doum palms grow near the rivers, and most are in fact Rendille. Many Samburu women, however, have learned to weave baskets and now produce them for the tourist art market (see Knausenberger and Lemunyete 2008). Prior to its first use a basket is waterproofed by coating its interior surface with colostrum. Women harvest and spin wild sisal (*Sanseveria robusta*) in a very labor-intensive process;²⁸ strands of this fiber are often woven into the basket as

²⁸ See <http://jgkdesigns.com/articles/wild-sisal-spinning.aspx>

decoration, or loops of braided or twisted sisal can be left as handles. Before milk collection a basket is then always smoked to kill any bacteria. Camel-milking baskets can also be made out of wood. During my time in Samburu I only saw one such basket still in regular use (Figure 4.28). The *soror* is another container form associated with camels. It is, I was told, a special wooden camel milking jar (cf Herbich and Dietler 2008).

There must be a great number, I think, of other containers made (or bought) and used by Samburu women and men. I have here described the most common, those containers which are still employed to some degree in aiding with the responsibilities of everyday life. Other containers are rare, such as the large cattle horns once used for storing water, milk, fat, and now often used for storing tobacco. Still others, such as the leather bags known as *sampurr*, are owned by many Samburu women yet are rarely now used for the mundane tasks they once were in the past. Some categories and types of containers I have surely and unfairly ignored. The ubiquitous maize/rice bag, capable of holding forty-five kilograms of maize, is used for all manner of household chores and might well deserve its own chapter. I hope, however, that I have presented a fairly comprehensive list of the durable containers used by Samburu in their past and present lives as mobile pastoralists.

4.20 Types of “Dorobo” Containers

I would like to conclude this chapter with a brief description of container types made and used by members of Dorobo communities throughout Samburu. A detailed discussion about hunter/gatherer material culture vs. pastoralist material culture deserves its own dissertation but will be mentioned again in later chapters.

4.20.1 Pottery

The same types of pots used by Samburu herders were also used by Dorobo, albeit often for different purposes. Cooking pots, for example, were generally used for boiling the bones and meat of wild game, rather than the meat and bones of domestic stock. Their cooking pots were the same in form and size²⁹ as those still used by both Dorobo and Samburu today. Poison used for hunting wild game was also prepared in clay cooking pots, although those pots could never be used to cook food again. I am unaware of anyone still actively hunting with poison, but Loliin elders speak of a time when elephants, rhinoceros, and other large game were routinely taken down with poisoned spears (*lpunat*). Poison was made by men, and usually prepared by boiling leaves from the *Imorijo* plant with water. The pots were left in the forest, often in caves, to be reused whenever more poison was needed. Moti lekweshi were also used by Dorobo, some say to store honey. One Loliin elder from Naibor Nkeju also remembered moti lekweshi being used to store the meat of wild game.

Mpejo, the elderly Loliin potter with whom I often spoke about potting traditions in Samburu, did make a few other forms which were produced specifically for members of her own community (Table 4.3). Few people but for the oldest Loliin now remember ever owning these pots themselves.

²⁹ A Samburu elder from Garma, however, told me a story about a huge pot that used to lie on a hill near Wamba. Kids used to play in this pot, he said, which was an abandoned Dorobo cooking pot once used to boil elephants. None of the Dorobo elders I interviewed, for what it is worth, ever once mentioned giant elephant pots.

Table 4.3 Additional types of pots, used by Loliin

Type of Pot	Samburu Terms		Description
	most common:	less common:	
beer pot	<i>lkotumpe</i>	<i>ndondol</i>	Pot for brewing and/or storing beer
water pot	<i>(none)</i>	<i>(unknown)</i> <i>nkisimet</i>	Two types: - Large pot used to store and cool water - Wooden milk container-shaped pot with clay or leather lid for collecting water

The most common of these Loliin pots was the beer pot. These were typically giant shoulder-width pots, with handles, that were kept near the bed. Other beer pots were apparently made to look like the calabashes, *lkotumpe*, used to make beer. Beer pots were quite heavy and immovable when full, so drinks would be ladeled out whenever needed for men. Samburu herders occasionally brewed beer themselves, in which case they would borrow these pots from Dorobo. Animal-skin bags were also used to make beer; today plastic jerry-cans stand in for these types of containers.

A different type of pot was used for water collection and transport. Those pots were shaped like carved wooden milk containers, but were bigger than *moti lekweshi* and had leather or clay lids. Some say that water storage pots were the largest of the Loliin pots ever produced, although it seems likely that these were often the same in size and form (read = the same pots) as the beer pots and the honey pots kept in caves. One woman told me about a water pot at least four feet high, like a water tank, which had a flat bottom, no neck, and a lid. It could be moved on a donkey, she said, but the donkey would not be able to carry anything else. Water stored in water pots is said to be clean and cool. The only water pot I saw during my fieldwork was owned by a woman in Maralal, and one other woman from the highlands vaguely recalled her mother once

having two. Transport logistics apparently prevent the use of giant water pots, beer pots, and honey pots by residentially mobile households, although note that nomadic Somali pastoralists often carry extremely large and heavy water pots in baskets on their backs (Chapter 6, Figure 6.3).

Other Dorobo vessels included a clay bowl, only ever mentioned once by an elder but apparently used for soup. Another type, mentioned by Mpejo, was a very small pot like an *lkunate* that children used to make and that potters would fire for them.

4.20.2 Honey Containers and Other Storage Vessels

There was some disagreement about containers used for honey. Most people agreed that wooden *ltaam* (Figure 4.29) and leather bags were the main vessels that men would use to collect and transport honey. In terms of honey storage, though, some swear that Loliin have never used clay pots to store honey. Others swear (equally as vehemently) that members of older generations would nearly all have had clay pots for honey. These honey pots, they say, were exactly the same as *moti lekweshi*, the pots Samburu say were for fried meat. For reference, Blackburn (1973) reported that Okiek hunter/gatherers of the Mau Forest had three types of honey pots, including a similar type of “house honey pot.” Another type of

Figure 4.29 Honey container, *ltaam*, made from wood with a buffalo-skin lid.

Okiék honey pot, a forest honey pot, was never mentioned to me by Dorobo in Samburu. Those Okiék pots were used for storing honey in the forest, and would be buried in the ground to protect it from honey badgers. Pots were preferred over other types of containers for this purpose, Blackburn notes, because they do not rot and contents are kept safe from moisture. The other type of Okiék honey pot was a very large pot, kept in caves, for storing honey and making honey wine. A Samburu elder living near South Horr once mentioned that people did use to keep giant honey storage pots in caves. He said those pots were so big, up to seventy liters, that they could not be fired. Rain would wash the clay away. They were generally kept in homes, but taken to caves for safe-keeping if the family had to move. J. Brown writes that Suiei Dorobo from Wamba used to make a type of “small, shallow platter with one vertical handle curved over the rim” (1989b:77), undecorated, used for serving honey. I was unable to find anyone who remembered this particular form. The only other type of pot ever mentioned in terms of honey was the regular cooking pot. One Samburu elder, also from near South Horr, mentioned that people used to heat up honey in cooking pots to separate honey from comb.

The most ancient woman in Mbaringon told me a slightly different story about the use of containers made from wood or gourds by members of her Loliin community. When she was much younger, she said, the *ltorrobo* did not have carved wooden containers like those seen today. Instead, they made containers with palm tree wood, *lkokidongit*, which was hollowed out on the inside. The ends were capped with buffalo skins. These palm wood containers were similar to *ltaam*, and could also be used for the harvest and storage of honey or for making beer. They were not used for milk. The Loliin

also had gourds, she told me, which were used to make bowls and to make containers for fetching water.

4.21 Kikuyu Containers

A comparative project examining the material culture of a settled, agricultural society in northern or central Kenya was beyond the scope of this project. In addition, the colonial impact in places such as the Central Highlands has been particularly dramatic, and only through in-depth research could I have begun to understand, for example, previous systems of craft production and container use. All pottery used by Kikuyu women today, for instance, is mass-produced for the commercial market. Nevertheless, limited interviews and library research suggest that reified economic and ethnic divisions between Samburu and their neighbors were once less rigid and obvious than they are today. Settled agricultural communities in central Kenya, for example, have often kept significant numbers of livestock, and pastoralist groups such as Maasai have had segments of their society farming at various times. Distinguishing household assemblages of mobile herders versus farmers in the archaeological record may be much less clear-cut than assumed by many, including myself.

Kikuyu pots today have globular bodies, constricted necks, and flared rims (see Appendix I, Figure I-DD for a similar example), bearing little to no resemblance to the pots Kikuyu women would have had in their own houses generations ago. I interviewed a Kikuyu woman living near Naibor Nkeju, who remembered her mother having pots similar to gourd containers, with bigger bellies and two handles. These pots, she said, were used for cooking maize, sweet potatoes, and meat. Her mother also had a smaller

pot, like a sufuria, for vegetables. Houses often had, in addition to a large cooking pot and a smaller cooking pot, a very large pot for storing water. An ethnography from the early years of the 20th century also describes Kikuyu household material culture in quite some detail (Routledge and Routledge 1910). There were two types of pots, the authors noted, wide-mouthed pots and narrow-mouthed pots. Pots ranged from half a gallon to four or five gallons in volume, with lugs or handles but no lids. One photograph (p. 98a, Plate LXVII) shows a wide-mouthed pot similar in form and decoration to modern Samburu cooking pots, except for at least one extra handle.

The ways in which Kikuyu farmers utilized gourds was quite similar to how Samburu use them today. According to Routledge and Routledge, Kikuyu used gourds for milking cattle, for storing and fermenting milk, and for bleeding cattle. Bisected gourds served as serving dishes. Gourds were also used for making and storing sugar cane beer. Juice was first squeezed into half-gourds, and then into narrow-mouthed gourds where the beer would ferment. Smaller gourds are made into rattles and storage for medicines. Storage of grains was done in baskets. With the exception of the large water pots, it seems, Samburu and Kikuyu container types have been, historically, nearly the same. A typical Kikuyu hut, Routledge and Routledge wrote, had “three or four earthenware pots, half a dozen half-calabashes of different sizes as dishes, and a couple of gourd flasks, each fitted with sling and leather cap, to carry milk or gruel when absent from home.” (1920:60).

5 Potting in Samburu

Very little has, to date, been written about potting in Samburu, and so this chapter will provide an introduction to the history of ceramic production by and for Samburu women. As explained at the outset, I am less concerned with reconstructing the history of Samburu potting than I am with painting a picture of pottery production and use during a fairly restricted period of time (i.e., more or less the last fifty years) in a fairly restricted geographic region (the three current Samburu administrative districts). Although few studies of ethnoarchaeological interest have been written about Samburu domestic life, two reports (J. Brown 1989b; Clarfield 1989) do briefly describe the manufacturing techniques by which pots are made. I will spend very little time going over the sorts of technical details (in regards to, for example, clay selection, shaping techniques, and firing practices) that are so often reported at length upon in ethnoarchaeological accounts. I will focus instead on the organization and scheduling of Samburu pottery production, regional differences within production techniques, and the decline of Samburu potting as a viable way for women to make a living.

5.1 Pottery in Northern Kenya

Over the course of the twentieth century the extensive social and economic networks among and between pastoralists and hunter/gatherers in northern Kenya have been disarticulated and reorganized in fairly substantive ways. Nevertheless, systems of pottery production and exchange seem to have persisted (if not thrived) throughout

northern Kenya, at least up until the fairly recent adoption of metal vessels throughout eastern Africa. Dassanetch herders reportedly had no access to clay sources, but were able to obtain pots through trade with both their partners to the north, including the Arbore, Bachada, and Hamar, and with the hunter/gatherer/fisher El Molo to the southeast (Sobania 1991). Samburu and Rendille obtain pots from Dorobo hunter/gatherers, and Samburu are also known to have obtained pots from the El Molo up until recent decades (Scherrer 1978). Turkana obtained pottery from both Dorobo potters near Mt. Ng'iro and from Pokot (Best 1993; Broch-Due 2000); pastoral Pokot obtained pots from sedentary agricultural Pokot (J. Brown 1989a). Gabra have, at least in the past, gotten pots from a hunter/gatherer group known as the Waata (Kassam 1986; Kassam and Bashuna 2004). Somali pastoralists obtain pots from neighboring agricultural groups (Ahmed 1986). As far as I can tell, every pastoralist group in northern Kenya incorporates, or has incorporated, pottery into their domestic and ceremonial lives.

5.1.1 A Note about the Semantics of Saying "Samburu" Pottery

"Samburu" pottery is, to be clear, made by Dorobo women. I will continue, however, to reference pottery in this region as "Samburu" for a number of reasons. This dissertation's major focus is on the use of pottery by Samburu pastoralists, and referring to their pots as "Samburu" must be done here for ease and simplicity. Another reason I am comfortable calling Dorobo pottery "Samburu" is that most Dorobo, at least now, consider themselves to be fully Samburu. They consider their pots to be "Samburu" as well. Dorobo potters indeed make identical pots for themselves and for the herding sections of Samburu society, with the exception of a few forms that no longer exist. Finally, "Samburu" pots, as made by Dorobo, share a number of stylistic traits that make

them easily identifiable, to an outsider, as coming from the Samburu region. Other groups such as the Rendille and Turkana have certainly exchanged for or purchased this pottery from Dorobo as well. Material culture created and circulated at the edge of ethnic boundaries is itself an interesting topic, and will be discussed later on in this chapter.

5.2 The Origins of Samburu Potting

The historical origins of craft production by Dorobo populations in Samburu are sadly and completely unknown. Most Samburu claim no knowledge about the history of their pots other than to say that they were given by God. When asked how Dorobo first learned to pot, both Dorobo and Samburu women tend to tell the very same story:

A woman must have needed a pot to boil meat, because when roasting meat it would lose too much fat, but she had no vessel suitable to put on the hearth. She gathered some clay and shaped it into a pot, but it would not keep its shape and hold the soup. She kept experimenting, and eventually figured out how to harden and blacken her pots in the fire. That was how potting started. Thanks be to God.

I love the idea that this story relates, simply, how potting in Samburu must have began.

There are no origin myths about potting, there are no stories passed down from generation to generation about the very first potter. Potting must have been invented by an industrious woman who found herself in need of a pot. Whether or not potting was actually an original invention in Samburu we might never know. Routledge and Routledge's (1910) photographs of Kikuyu material culture from the early 1900s show a small pot that one might say looks "Samburu." Stock images from the 1930s in the Getty collection also show Kikuyu pots with globular bodies, constricted but fairly straight necks, and vertical handles on either side. Dorobo may have learned to pot from Kikuyu farmers. It is also entirely possible that Dorobo in Samburu knew how to pot long before

any contact with agricultural groups. Complicating the issue, of course, is the fact that the history of Dorobo *themselves* in Samburu is still very much up for debate.

What we do know is that potting skills have long been passed down in Dorobo families from mother to daughter, although any girl who expressed interest in potting would have been welcome to learn. J. Brown (1989b) reported that the “tuition” fee for potters near Wamba was two strings of beads.

5.2.1 *On the Lorroki Plateau*

For all of the words that have been written about the historical and anthropological significance of exchange relationships between pastoralists and hunter/gatherers or pastoralists and agriculturalists, few have been devoted to discuss how these types of relationships may or may not evolve over time. The history of exchange between the Loliin hunter/gatherer community and Samburu herders on the Lorroki Plateau, for example, is to me less than abundantly clear. I do not know when it began, nor do I know the many forms it has most likely taken. Loliin elders all say that there used to be a time, long ago, when their families lived in the rockshelters and caves of the forested Kirisia Hills while Samburu and Laikipiak Maasai herders lived out on the plains. Only sometime around the 1930s did Loliin move their homesteads out of the forests and onto the plains. Before that time, one elder told me, the Loliin would only make pots for their own use. They had no interaction with their enemies out on the plains; they would not exchange with them for milk, or skins, or anything else. Pots, and honey, never changed hands. It is certainly possible that there have been times of tension and violence between Loliin and surrounding herders. Larick’s (1986b) work on blacksmithing in Samburu indeed speaks to a history of intense intergroup raiding and

conflict among Maa-speaking pastoralists, hunter/gatherers, and craftspeople that was particularly strong from the 1820s to the 1890s but continued throughout the twentieth century. No one today now remembers a time when Samburu would go into the forests to obtain pots from Dorobo potters. Oral traditions in reference to the exchange of pots on the Lorroki Plateau instead tend to begin once potters and their families had moved to the plains.

5.2.2 *Taboos and Social Stigma*

The strictest potting taboo recorded in Samburu was and still is adhered to by the Dorobo near the Kirisia Hills, and that is the prohibition of potting by any woman of childbearing age. Symbolic associations between potting and human reproduction are seen widely among sub-Saharan African societies (Herbert 1993); this Samburu case is typical in that the fertility of women and the creation of pots threaten each other. According to Neng'iro Lepilale, a Loilien potter from near the Karisia Hills, a pot feels the following: "It hates that regular thing [menstruation]. It hates small children, [the pot] smells the baby there, and it [the baby] dies here... They say it [the baby] is *kereet* [meaning "unclean"]... It [the pot] is proud, that thing. It hates *kereet*. It hates a young woman" [April 8, 2009]. A young woman, Neng'iro explains, can handle a finished pot, but cannot participate in gathering of clay, the shaping of pots, or their firing. Men are discouraged from either witnessing or participating in this process as well, although they may go with women while they collect clay for protection from wild animals. It is not simply that pots will break if these rules are neglected, but that harm will come to people as well. Pokot potters, similarly, use secluded rockshelters for pottery production to isolate themselves from pollution (J. Brown 1989a).

What seems surprising about Samburu potting is that, at least at present, taboos vary greatly in detail and scope among various Dorobo groups. Jean Brown, an ethnographer, reported the following in 1973 after visiting Suiei potters in Wamba: “A potter will not pot if she is menstruating. There is no objection to men being present during the making or firing of pots. The only bad omen to look out for is if the *ndiru* bird (a woodpecker with red on it) is seen on the potters [sic] left (it is a bad omen for a hunter if it is seen on the right) for it would undoubtedly result in pots cracking up” [card on file with the National Museums of Kenya]. As Rhoda Lenaimado, a well-known Suiei potter from Wamba, explained to me, she and her fellow potters used to make unfired pots when they were kids, to practice. They started making real pots when they were still young, about when they each had two kids. There is no such belief that young women of childbearing age are not supposed to make pots. She had never heard of such a thing.

Why the discrepancies from place to place and/or potter to potter? It seems both futile and ethnographically misguided to attempt the reconstruction of an original “Samburu” system of beliefs about who can and cannot make pots. It seems likely to me that Samburu potting taboos have from the beginning been locally modified and adapted as social and economic contingencies have dictated. General attitudes about potters and potting can apparently evolve as well: Near Mt. Ng’iro, one middle-aged Samburu woman (who, for what it is worth, was not identified as Dorobo by either herself or the local community) had learned to pot years before and had become locally admired for making enough in revenue to pay her son’s way through school. She seemed genuinely baffled when we asked about a prohibition against young women potting. Anyone, she said, could make pots. Indeed an ancient woman from Kurunga near Mt. Ng’iro

confirmed this, and said without any trace of irony that pots are like milk containers, anyone who is knowledgeable can make them. It is like when a calf is born, and it can grow up to be the leader of a herd. It is the same with people. A knowledgeable person can be born, and can make pots without learning from anyone. It's a very good thing.

5.3 Production Techniques

Although potting taboos vary from place to place, potters across Samburu follow roughly similar (but not identical) methods in terms of ceramic production. I will only briefly discuss the chaîne opératoire of Samburu potting, as I did not have an opportunity to witness an entire sequence myself. By the time I arrived in Samburu in 2009 no potters, as far as I could tell, were still making pots on a regular basis. The only pots still being produced, in many places, were those made for curious white people (including not a few anthropologists). I myself commissioned a dozen or so pots from Loliin women in an effort to promote potting as an income-generating activity. I kept several of those pots, and many others were to be offered for sale to women from the local community. As a younger woman I was kindly asked to distance myself from observing and participating in the process. The potters feared, in part, that my presence might somehow risk the loss of those pots. I did not push the issue, and the potters ultimately let me and several elder men witness a firing session. Much of the information presented here has been gathered from interviews with potters, as well as from watching a video of Mpejo and Neng'iro making pots taken by Carolyn Lesorogol and Bilinda Straight in 2005. Other accounts of past Samburu potting in Wamba and the Ndoto Mountains can be found in J. Brown (1989) and Clarfield (1989).

5.3.1 *Earth*

The clay in Samburu belongs to everyone, and is said to have been given by God. There are no restrictions as to who might use it, and no limits as to how much of it one might take. My elder neighbors did once voice the opinion, though, that Dorobo are fairly secretive about clay sources, never wanting others to visit the clay because, my neighbors presumed, the pots made from that clay would then break. All of the clay sources in Samburu are found in the hills, in the banks of stream beds. There are (at least) dozens of clay sources in Samburu, including near Mt. Ng'iro, the Kirisia Hills, the Mathews Range, and the Ndoto Mountains³⁰. The only other demand for clay in Samburu used to come from the blacksmiths, who lined iron-smelting furnaces with the same clay from which pots are made. There was never apparently any competition between blacksmiths and potters for clay or for land near clay sources.

Potters in any given area often seem to think that clay sources elsewhere are highly inferior. As Mpejo said of pots made at Wamba, "Those aren't pots. That's not clay! They don't know how to make pots! I don't even want to look at those pots." During that particular interview another woman chimed in (somewhat more charitably) that if a person from Naibor Nkeju went to Wamba, people from Wamba would ask for pots from Naibor Nkejo because the clay in Wamba is not good enough. It cracks very easily, she explained. Of course people in Wamba would say the same things about pots, potters, and clay from anywhere else. All of this despite the fact that most often potters had never *personally* seen any of those lousy pots made elsewhere.

³⁰ Clay from termite mounds is readily available on the plains. Children sometimes practice making pots with termite mound clay, but those pots are said to break easily. A potter in Ngurunit told me that potters from Loisamis near Marsabit once made pots from anthill clay, although again those pots were apparently prone to cracking.

Clay is quarried from the sources by the potters, and sometimes other women and children she might bring to help. They carry the clay back to their homesteads in leather bags or rice bags, where it is then laid out to dry. After all of the moisture has evaporated the clay is pounded and ground, using an upper grindstone on a leather hide. Stones and any larger particules are removed. Mpejo once mentioned using dried donkey dung, mixed in with the clay at this stage, to temper her pots. Zebra dung can serve as well, otherwise no temper is used.

5.3.2 *Water*

Water is added to the dried clay, and the reconstituted mixture is kneaded until it becomes a workable lump. A cone-shaped piece of clay is first created to stabilize the incipient pot in the potter's lap, and a pot is then built upwards from the cone following a coil method. Thick coils are added to form the walls, and these are thinned and smoothed with a round piece of a gourd and the potter's hands, which she re-wets throughout this whole process. The neck is added to the globular pot with a separate coil, and finally the clay cone at the base is trimmed off. Handles are added by making indentations in the pot, affixing the handles, and smoothing them onto the pot. Finally, small bands of clay are applied to the pot as decoration. Depending on the individual potter's style the bands of clay might then be further decorated with impressions from acacia thorns or small twigs.

Pots can be made in both the dry and rainy seasons. If rainy, potters will generally wait for a break in the rains before starting to make pots, as it rarely rains unremittingly for weeks or months on end. There are three steps in the process that are affected by the weather. Clay has to be dried out after collection, so that impurities and large inclusions

can be removed. When it is sunny, this takes one day. When there is no sun, this can take from between one to three days. After the potter shapes a pot, it then has to be dried before firing. This drying process takes between three and four days if sunny, four if it is cloudy or raining. The pots require a fair bit of attention, as they have to be rotated periodically to ensure even drying. If it ever starts to rain, a potter will bring her pots inside. A good potter, Mpejo told me, could make two pots a day during the dry season. In the rainy season it takes a bit longer. Potters from Wamba reportedly averaged twenty to thirty pots per month (J. Brown 1989).

5.3.3 *Fire*

Firing is always done away from the houses, outside of the settlement fence. All pots are open-fired, although specific methods vary from region to region. Brown (1989) reports that potters in Wamba fired their pots in depressions or hollows in the ground created for that purpose. The Loliin potters near Kisima fire their pots on a flat surface. Dried cow dung is the preferred fuel; one Samburu woman surmised that firewood would make a blaze too hot for the pots, which then might crack. Acacia bark can be used if no dung is available (see, for example, Figure 5.1). The number of pots fired at a time can vary. Four pots were fired in the open firing that I observed. If a pot cracks during firing it is generally discarded. Occasional attempts are made to repair minor cracks with wet cow dung. The fire is constantly monitored, and more dung or barks can be added if holes in the structure appear. Leather-hard pots are a light brown color before firing, and as they fire they will gradually turn black and then red. Parts of the pot not properly fired will remain black, and those pots will be less durable. Potters can judge whether or not

pots are adequately fired by both color and sound. A finished pot will sound like *mabati* (iron roofing) when tapped. Fence poles are used to remove these pots from the fire.

Immediately after firing, cooking pots are always then smudged to make them black. The smudging process involves putting leaves, either *lgilai* or *lakirding'ai*, inside the pot. Leaves are also rubbed on the outside of the pot, which will turn it deep black (Figure 5.1). Potters and the women who buy pots all say that if the pots are left red, they will not be strong enough.³¹ More fundamentally, though, a non-black cooking pot is simply not a pot as pots should be. Black is the color of death,³² and cooking pots are created specifically for the occasions on which livestock will die. Indeed livestock can *only* be said to die an acceptable death

when pots are available to prepare their meat and bones in appropriate ways. Cooking pots have to be black. Kikuyu cooking pots are always brown in color, and are thus

Figure 5.1 Smudging pots with *lakirding'ai* leaves, note pots being fired in the background

³¹ Experimental studies of Kalinga pots demonstrate that smudging can reduce permeability and improve heating effectiveness (Longacre et al. 2000). It may also provide resistance to abrasion. In Longacre et al.'s Kalinga sample, however, smudging did *not* improve vessel strength as claimed by both potters and consumers.

³² See Rainy (1989) on the complex symbolism of colors in Samburu. Particularly important are black, white, red, and green.

considered improper substitutes for the real thing. Tellingly, the one type of Samburu pot that is not smudged is the *moti lekweshi*. Moti lekweshi hold meat, so they must be made out of clay. Yet they are not placed over fire, they do not cook the meat themselves, and thus they do not have to be black.

Pots, milk containers, and numerous other types of Samburu material culture must be ceremonially prepared in certain ways (*a-ipok* or *a-ilish* are to ritually cleanse or purify, to make something ready to use). Carved wooden milk containers, for example, must be washed out with blood before they can be used for milk. For pots, several things must be done. Wet cow dung, smelly and green, is applied to the outside of pots after firing. Sheep or goat brains can be used instead, although (I can tell you from personal experience) brain-smeared pots are a very good magnet for flies. The chyme from a goat's stomach must then be boiled in the pot. Donkey dung could also be used, boiled with water and leaves. After boiling the stomach or dung the mixture is poured out, and animal fat will be smeared on the pot's interior surface. Only after this has been done can the first meat be cooked, which women will eat.

5.4 Trade and Exchange

I would like to recount, briefly, how potters on the Lorroki Plateau remembered personally interacting with members of the surrounding community. When people married, Mpejo told me, they should have a pot. So people would come to her. When she was making pots, a woman could just come and see the pots being made. Mpejo would then fire one for her. So there was never a time when she had many pots lying around her house. If she had three or four pots in her house, that is when she would make more.

People would just come to her, so no markets were needed. She only remembered taking pots for sale to Maralal once. Many Samburu women from herding families would in fact reminisce about having friends who were potters, to whom they would go whenever they needed a pot. A long time ago, Mpejo said, people exchanged pots for milk. For a big cooking pot, she would be given the milk that fits in a large wooden or gourd milk-storage container. They would just exchange for milk, she said, and not for the containers themselves. Occasionally they would exchange pots for blood, animal skins, or for livestock, but not often. Milk was usually available, and sometimes they could exchange pots for ghee. I have to point out that Loliin potters seem to have routinely gotten the short end of the stick compared to other potters in Samburu. Elsewhere, potters claim that pots were worth entire goats and not just a small bit of milk. Only after sometime around the 1950s, Mpejo said, did people sell pots for money.

5.5 A Few Words about Style

I have briefly described the technological processes by which potters in Samburu typically shape and decorate pots. I would now like to turn, briefly, to a discussion of ceramic style. My motive for doing so is only to expand upon Hodder's (1982) ideas about the homogeneity and conservatism that characterizes a great deal of utilitarian material culture made and/or owned by pastoralist groups in north-central Kenya. He writes of the Njemps of Baringo, for example, that although there may be localized variability in artifact styles, tribal-wide similarities in material culture result from a "more or less conscious desire for conformity" (1982:53). One might argue for a similar situation in Samburu: Nearly all cooking pots look alike, and have since anyone can

remember. If a desire for conformity exists, then, how has it arisen in Samburu, and how can we best understand the development of regionally-specific ceramic styles? How do Dorobo potters themselves conceptualize what a pot should look like and be? How do other Samburu women understand “Samburu” pots *vis-à-vis* pots from other groups?

First, however, let me describe in very basic detail the differences in Dorobo-made pottery throughout the broader Samburu region. Figure 5.2 shows four distinct style clusters, corresponding with Dorobo groups living in various locations throughout the hills. Although individual potters do develop their own ceramic styles, the potters from any given area do tend to make broadly similar pots. A pot made by any of the Loliin potters near Naibor Nkeju, for example, is easily distinguishable from a pot made by Suiei potters near Wamba. Given the specialized and small-scale nature of craft production in Samburu these localized styles are perhaps to be expected. Consider also the relationship between marriage patterns and stylistic patterning of material culture, which in this case is fairly complex and varies from place to place (and potter to potter). Although members of Samburu society generally follow patrilocal patterns of marriage, it seems that Dorobo women more often stay in their home areas. Women may learn to pot either before or after being married, often from their mothers and grandmothers but sometimes from their mothers-in-law or other women. The famous Deetz-Longacre model suggests that local microstyles often develop when women potters follow matrilineal patterns of marriage (Deetz 1968; Longacre 1970), but see Herbich and Dietler (2008) for a discussion of other salient factors in the development of regional styles. I would point out that the time depth of specific regional styles in Samburu is unknown. All of the pots shown were made since the 1960s-70s, and little seems to have

Figure 5.2 Common forms and decorations of pottery from locations throughout Samburu: (a) Mt. Ng'iro pot, with wide and tall straight neck, parallel vertical bands on neck, horizontal bands around rim and shoulder; (b) Ndoto Mountains pot, similar to (a) but with shorter, slightly tapered neck; (c) Wamba pot, with flared rim and flattened handles, very globular body, isolated applied vertical bands on neck; (d) Naibor Nkeju pot, with straight tapered neck, horizontal band around rim, hatched applied designs on neck extending to shoulder, rounded handles.

changed in these areas besides the fact that many potters have in fact stopped potting.

Right now I can suggest that the regional styles depicted in Figure 5.2 go back at least one or two generations. Only archaeological research, I think, might provide further insight into the development of local Dorobo potting traditions.

I am talking about ceramic *production* when I talk about local style clusters, but of course the other important point to consider is the *consumption* of such pottery and its distribution across the Samburu landscape. With very few exceptions, pots bought from one Dorobo group typically stayed in that general region. Samburu women got pots from the nearest and most convenient place to their homes – pots from the Loliin near Naibor Nkeju, for example, were bought or exchanged for by women living on the Lorroki Plateau. They were also bought by women from the lowlands who lived just on the other side of the Kirisia Hills. Those women use donkeys even now to transport goods to and from shops in Kisima. But families from the lowlands rarely brought their homes and their cattle across the hills to the Lorroki Plateau - in this sense, the circulation of goods such as pottery in Samburu followed paths outside established patterns of residential mobility. Generally speaking, however, the relatively localized ways in which families moved along with their herds rarely resulted in pots being transported all over the region. Vehicular transport has begun changing this pattern. Women I spoke to in Siambu, for example, had purchased pots at the market in Wamba. Kikuyu pots are now often brought from Maralal or from Nairobi to places throughout the region.

I took a series of photographs (which can be seen in Appendix 1, Figures I-C through I-L) at the Nairobi National Museum of the "Samburu" pottery in the ethnographic collections. I showed these photographs, at the conclusion of interviews, to Dorobo and other Samburu women, as well as any men who might have been hanging around. I asked everyone where they thought the pots had come from, who had made them, and what they were most likely used for. To my surprise, only pots from Naibor Nkeju (for example) were recognized by residents of Naibor Nkeju as "Samburu" pots.

The Naibor Nkeju pots were good pots, the right shape, with the right decorations. Other pots were inferior for various reasons. Residents of Naibor Nkeju had not seen pots from Wamba or anywhere else, and in many cases people could not name other locations where potters once worked. They knew that the other pots were not their own. Beyond that, they had no idea. Older women and younger women were equally baffled.

I might propose several reasons for the general lack of knowledge among potters about types of pots other than their own. The first is the relative geographical and cultural isolation of Dorobo communities. Rarely had potters traveled outside of their own home regions; no one I spoke to had ever met another potter from anywhere else. Why, then, do even Samburu women from ostensibly mobile herding families seem to know so little about pots from across the region? One might assume that the greatly reduced residential mobility of recent decades has led to younger women becoming less aware of people and places and pots from beyond their own home areas. Even much older women, however, had little idea that various potting communities existed throughout Samburu. As mentioned, even when families were highly residential mobile they rarely moved beyond large but fairly circumscribed zones. Which brings me to another point: Even if women *had* moved long distances and interacted with other peoples, there would have been little reason for them to pay close attention to the subtle stylistic details of pots made and/or owned by other women. Pots occupy a much different cultural space than milk containers, spears, ornaments, and other objects that are by and large designed for the public eye. Milk containers, for example, are (similarly to pots) functional and utilitarian objects, but they are also intentional and highly visible markers of both a woman's identity as "Samburu" and of her life stage and status within the community. The designs

of such items are, in part, meant to convey information (see Larick 1986a), and each cowrie shell on a wooden container and each beaded necklace says something about the woman who owns it. Pots, on the other hand, are part of a woman's private and domestic domain. They are brought out for ceremonies, yes, but there is nothing about a pot that might signal to an observer anything of import about its owner in terms of age, social status, and so on.

Throughout Samburu it seems there is less stylistic variability in milk containers and other types of containers than there is with pottery. Herbich and Dietler (2008) discovered a similar pattern during their fieldwork with the Rendille, although they focus on milk containers and mention very little about the clay pots bought from Dorobo. Wooden and gourd milk containers, and most other types of containers, are made by all Samburu and Rendille women rather than just specialists in fairly isolated areas. Herbich and Dietler thus ascribe the homogeneity of milk container design across Rendille to a number of factors including the relatively high degree of mobility among Rendille herders and the strong network of connections between craft producers. Another critical factor is the very long use-life of containers in Rendille, as in Samburu. Mothers make milk vessels for their children, and those vessels are expected to last a lifetime. There is little chance for the "rapid formation and transformation of distinctive local styles" (2008:243), as they saw with Luo pots. The regional styles seen with Dorobo pottery in Samburu have most likely developed slowly and with few dramatic transformations, but they have developed nonetheless. Certainly more research is needed on the local histories of Dorobo communities, the specific histories of their potting traditions, and their relationships with the pastoralist groups that surround them.

Let me return to pots briefly and discuss one particular example from the Lorroki Plateau, pictured in Figure 5.3. The handles, nearly everyone noted when showed a photograph of the pot, were “wrong:” They are oriented horizontally rather than vertically. It is so inconceivable that a Samburu pot should be shaped like this that a group of elder men near Barsaloi needed to take a very long and close look at its photograph to confirm that it was, in fact, a clay pot. One common response to this photograph was to laugh heartily at what must have

Figure 5.3 “Learner’s” pot from the Lorroki Plateau, source of much amusement and confusion

been a pot made by a “learner.” Every other person who was shown this photograph believed that the pot must have been made by some other tribe. It is not ours, they would say, it must be Maasai. Or, others guessed, Kikuyu. Or Akamba, or Kisii. Or maybe Turkana. Anyone but Samburu. Interestingly, most of the groups named as possible sources for the pot do, in fact, have potting traditions. Those pots, by and large, are entirely unlike the pot shown here. To be fair, the “learner’s” pot in the picture was over forty years old. Some women did look at pots unlike their own and suggested that perhaps those pots were made by Samburu a long time ago, before potters figured out how to make them correctly.

In the mind of each potter in Samburu there is, I think, a “correct” way to make a cooking pot. As Mpejo once told me, pots have not changed. Ever. There is only one way

that Samburu make pots. But ceramic style in Samburu is not, necessarily, a reflection of some “desire to express conformity with particular identity groups,” as Hodder found in Baringo (1982:45). Pots are not styled with two ears, black bodies, and simple designs in opposition to pots found somewhere else, for people to intentionally distinguish themselves as “Samburu” in relation to other tribes. Potters have no idea what other pots look like, nor do the Samburu women who buy them. Rather, Samburu pots are “technologies of the self” (Foucault 1988), used by women as they try to live properly Samburu lives. Having a two-handled black cooking pot is (or once was) both necessary as a means to cook food, and using it during ceremonial occasions was and still is considered a most propitious way to live a respectful and fruitful life.

Samburu have maintained a reputation as highly conservative and resistant to change, and here at the end of my discussion on style I would like to address this point in terms of clay pots. Holtzman (2003) explains, “From the earliest colonial encounters, East African pastoralists have garnered the reputation of being resistant to change, an image that received substantial elaboration throughout the colonial period and persists today within nationalist and development discourses.” An underlying implication behind these discourses on conservatism in pastoralist societies, including Samburu, is that they maintain a stubborn resistance to “modernity” out of some inbred obstinacy and pride in their more “primitive” ways of life. Lessorogol (2008) has refuted many of these ideas in terms of land management and ownership, and Holtzman (2003) cogently explains the dynamic and selective adoption of newer commodities, including tea, in Samburu. His discussion is likewise germane to social processes behind the adoption of household goods such as metal cooking pots and plastic containers.

It is not simply that potters in Samburu cannot or will not make different styles of pots. Potters in some areas *have* tried to incorporate new forms and ideas, such as pancake pans and lids, into their repertoires. And on one of my last days in Kenya one of the Loliin potters slipped me a pot. It was black, yes, and decorated as all other pots are. But it had an unusual shape – it was a jug, with a long, narrow neck and only one handle. To this day I have never seen another pot like it. It is quite beautiful, I think, which (dare I say) is unusual for a Samburu pot. It is perfectly proportioned, perfectly balanced, and the potter somehow thought that I might appreciate this jug more than I would a cooking pot with two handles. And I do. The type of pot that Samburu view as functionally and culturally appropriate for their *own* use – in cooking soups and other “pastoralist” foods – is two-handled and always the same.

A tendency towards conservatism in ceramics made by mobile peoples has been observed by archaeologists before, and ecological arguments have been offered as to why this might be the case. In the Great Basin of the American West, for example, prehistoric pots made by more mobile groups of hunter/gatherers were more finely potted, with thinner walls and more standardized rim shapes, than pots made by more sedentary groups (Eerkens 2003). Eerkens explains, “The need for a reliable technology in marginal environments probably led to less experimentation and strict adherence to a proven system” (p. 735). He is referring to pottery production and potential losses that might occur when things go wrong during firing or other production stages. He might as easily be writing about pottery consumption and the fact that mobile groups might want the pots they *know* are least likely to break. Additional ethnological research will be needed to determine if conservative attitudes to the invention and/or adoption of new technologies,

or experimentation with existing technologies, is more commonly seen among groups coping with riskier environmental and/or social conditions. It is certainly the case in Samburu.

5.6 Ceramic Ecology

Many assumptions about pastoralist pottery are predicated on the notion that ceramic ecology, as defined by Dean Arnold (1985), is the most important factor structuring systems of ceramic production that develop in mobile herding societies. But does mobility structure ceramic technologies in predictable ways? I would like to quickly introduce previous work on this topic, before presenting my conclusions about the ceramic ecology of Dorobo/Samburu systems of potting. Recent work by Eerkens (2008) includes a systematic outline of the environmental and logistical constraints that may inhibit (and in some cases prohibit) the production and use of pottery in mobile societies. He lays out five possible constraints on the production and use of ceramics by mobile societies, including both hunter/gatherers and pastoralists:

1. Pots are heavy and taxing to transport.

Transport logistics are routinely named as a primary limiting factor in the ownership of heavy and cumbersome goods by nomadic groups. So do nomadic groups typically, as assumed, travel light? They do, by and large, in relation to what is known about the material trappings of more sedentary societies. There are limits to how much weight pack animals can carry, and there are limits to how many pack animals a group might reasonably support in order just to move their belongings. Is there, then, an upper

limit to the numbers/types/sizes of containers that can be owned by highly mobile peoples? Presumably, yes³³. But one would assume that those limits would be both fairly high and dependent upon a variety of other factors including the distances that must be traveled and the other types of goods (i.e. house frames, mats, etc.) that must be carried as well. Regardless, quite a few containers can be hung from the sides of a donkey.

2. Pots are fragile and thus prone to breakage when moved.

The fragility of pottery is one of its intrinsic characteristics, and pots are in fact more prone to breakage when handled and moved on a regular basis. One could make a case that pots are used by mobile groups, then, only when there are no other, more durable alternatives suitable for the same needs. Plenty of mobile groups *do* have pots, though, and those groups employ various strategies to mitigate the fragility issue. The pottery itself could be specially designed to have handles, sturdier walls, and so on to minimize the risk of breakage and loss. Alternately, production systems could be structured to generate, as expediently as possible, greater quantities of relatively “disposable” pots. The use of pottery must also be affected in some ways by a recognition that pots are highly likely to break.

If the process of moving is thought to pose an increased danger to pots, then systems of transport could also be constructed accordingly. As Arnold explains, “Pots are important enough to some groups that they may be safely transported without breakage using adaptations such as carrying slings, net bags, or special shapes that are easily carried, or by cushioning pottery by careful packing” (1985:110). Mobile

³³ No studies, as far as I know, have examined transport logistics in hunter/gatherer societies or pastoralist societies anywhere in the world. This topic was beyond the scope of my project but nevertheless deserves greater study. What about, for example, mobile hunter/gatherer societies (such as those from eastern North America) who had canoes or other boats and lived along waterways or coast lines?

hunter/gatherers and pastoralists routinely carry ostensibly cumbersome and fragile pots along with various other kinds of containers. Sedentary groups regularly transport pottery as well, to markets in often far-flung locations. The main difference, Arnold notes, is that “potters in non-sedentary societies transport it during use while potters in sedentary societies transport it for distribution prior to use” (1985:112). Pots should be equally as liable to break in either situation, but the cumulative effects of regularly packing and moving a pot might make a difference. It would matter, then, how many times it is moved and how far it is carried each time. Caching pots is also an option, negating the need for improved transport systems altogether. Being able to cache objects only works, however, if there is minimal risk of theft or breakage while gone.

3. Mobile societies might not remain in one location long enough to complete the production of pots.

Arnold (1985) argues that what truly limits pottery production in mobile groups are the restricted amounts of time spent in places with favorable environmental conditions for potting. Potters need access to water and suitable clays, dry weather, and enough time spent in any given place to make, dry, and fire their pots. Moving around might reduce the likelihood that each of those conditions can be met. Dry seasons are the most favorable times of year for potting, in most cases, but those are also the times in which when many mobile groups tend to do the most moving around. Tobert’s (1985, 1988) study of Zaghawa potters in Sudan might prompt some reconsideration of this issue. Her case subjects were a group of peripatetic potters who moved around seasonally, camping at various villages to make and sell pots for short periods of time before packing up and continuing on. This itinerancy allowed them to sell pots at

established markets across a fairly large region, and assured them continuous access to sites with appropriate clay, water, and fuel supplies. In this case, demand from settled communities supported seasonal, full-time potting.

4. There may be a time conflict between pottery production and the gathering of wild plant resources during dry seasons.

Eerkens (2008) and other scholars working on hunter/gatherer societies in the Great Basin have expanded upon Arnold's ideas about ceramic ecology. They argue that dry season potting also poses scheduling problems for hunter/gatherers during dry seasons. This point is also relevant to discussions about pastoralism, however, given that pastoralists often rely heavily on wild resources during drought. Labor shortages are in fact a perennial problem in many pastoralist societies, but little has been written about how divisions of labor might be structured to allow for various types of craft production.

5. Small population sizes may limit demand for pots.

Although relatively small-scale forms of pottery production are not uncommon among mobile societies, as Arnold cites using HRAF, very little has been written about the intensity and scope of pottery production by the various mobile groups known to pot. Nor is any distinction typically made between these various levels of mobility. It is worth pointing out, however, that large-scale, full-time craft production and specialization rarely if ever develop in such settings. Arnold argues that potting only ever develops as a *full-time* specialization in completely sedentary societies. Besides constraints imposed by mobility on pottery production, Arnold also notes that there is rarely enough demand for full-time potters within mobile groups given their generally smaller populations. I am not

entirely convinced that mobility *necessarily* limits the development of larger-scale potting traditions: Given the proper confluence of social and ecological factors, it would not seem entirely impossible.

James A. Brown (1989) suggests that in large-scale, sedentary societies, pottery production and use may increase relative to other technologies (basketry, stone bowls, etc.), given that multiple pots can be produced at one firing. Demand for pots must be high, though, through having a relatively large population base with greater functional needs for pots, or if pots acquire value through social prestige. Eerkens et al. (2002) posit that in terms of ceramic production, economy of scale does not often become an issue in small scale, mobile societies for several reasons. If people cache pots while moving, the pots are not seen and thus not a good visible marker of prestige. Establishing markets for pots when trading partners might be far away may lead to less social value as exchange objects. Potting is thus done on local, household-level scales.

The only other potential constraint on potting, imposed by mobility, that I have seen discussed in the archaeological literature is the idea that inconsistent access to clay might make it difficult to potters to develop a working knowledge of the ceramic production process (Eerkens et al. 2002). Potters may not have the time or ability to develop an adequate understanding of, for example, how specific clays in an area respond to certain firing techniques. This is a conceivable problem, I suppose, but certainly not one that would seem to pose any serious long-term setbacks for any community of industrious people in need of some pots. Eerken's (2003) more recent work has in fact

examined ways in which highly mobile hunter/gatherer populations in the Western Great Basin resolved such conflicts to develop and maintain ceramic industries.

5.6.1 The Dorobo/Samburu System

It is easy enough to describe Dorobo potting in ecological terms: Samburu society adapted to the ecological restraints that their mobile lifestyle has posed on potting, by maintaining an exchange relationship with a group of potters who were more or less sedentary³⁴, a hunter/gatherer community whose members once figured out their own ways to manage demands for labor, time, and craft production. There is, of course, a geographical argument to be made for why “Samburu” potters came from Dorobo groups. There are a limited number of clay sources in the region, and all can be found in the forested hills. These hills are where Dorobo communities most often lived. Samburu herders are in some ways tethered to these hills themselves, as they need access to permanent sources of water, firewood, and fodder for livestock during drought. When herding families were more residentially mobile, however, they may have situated themselves near any given clay source for only part of a year. One potter from near Mt. Ng’iro had a fair number of livestock herself and would move on a regular basis. If necessary she would hire people to collect clay for her. People are generally only willing and able to move limited distances for clay, however, despite the many strategies individual potters might use to circumvent certain problems.

The more difficult argument to make (or refute) is that potting would still be possible, ecologically speaking, among mobile Samburu herders themselves. Women

³⁴ Dorobo patterns of mobility, I would note, have been greatly under-studied. Have Dorobo ever been in any way residentially mobile? Most likely, but this topic is rarely if ever discussed in historical or anthropological literature. Clarfield (1989:84) claims that Dorobo in the Ndoto Mountains follow “mountain-valley dry season-wet season ‘transhumance,’” but does not elaborate further.

from the lowlands sometimes suggested that Samburu near the Mathews Range indeed used to pot when they needed to, but only if there were no Dorobo around. Production would have been very small-scale. If clay were found on the open plains, perhaps along rivers, would mobile herding populations be more willing and likely to pot? Labor scheduling may indeed be one source of conflict with ceramic production. There have not been any studies, as far as I know, about labor demands on hunter/gatherer women versus pastoralist women. I considered trying to collect seasonal time-management data for Samburu using labor journals, but did not. Nearly every Samburu woman I spoke to acknowledged that the daily schedules and labor demands placed on Samburu women today are vastly different now than they were in the past. During my fieldwork, for example, women were spending day after day waiting in line for relief food. Sperling (1987a) presents some data relevant to the scheduling of daily activities in Samburu. While it may have been difficult for younger Samburu women to make time for potting while managing herds, raising children, preparing food, collecting firewood, etc., I do not see any ecologically-grounded reason why older men, for instance, could not have made pots themselves.

Would pastoralists such as Samburu use qualitatively and/or quantitatively different types of pottery if they had to make it themselves? My short answer: I doubt they would have to. The pottery made by Dorobo serves their purposes fine. Margaret Beck (2009b), in her review of historical and ethnographic evidence for ceramic exchange between mobile and sedentary communities from the American Southwest, suggests exactly the same. She explains, “Vessels made by neighboring agriculturalists may frequently have served mobile groups as well as vessels of their own design would

have” (p. 322), provided mobile groups could resolve transport problems (which they could). But mobile hunter/gatherer communities did, sometimes, make their own pots even when they could have gotten pots from sedentary groups. Beck argues that those systems of production came about not for ecological reasons but for social reasons, such as desire for economic autonomy and needs to maintain cultural identities and social networks.

5.7 The Slow Disappearance of Samburu Potting

Keyielo aitai...Ketiakaki mekwie ntai amu mebar suom loiti moti.Meroyie taa apa aitwua.

She knows how to make [pots]. ...She is told not to make [them] because the one who makes pots would not get many livestock. She decided long ago to lose it [to forget about making those pots].
- Family member of a Loliin potter

In terms of pottery, first appearances in Samburu Central District were discouraging to say the least. The green grocer in the largest town, Maralal, has a selection of round-bellied pots in all sizes from a Kikuyu agricultural community working near in the Central Highlands near Nakuru. These Kikuyu pots are lined up in a long row on the top shelf of the shop, behind the counter, for sale to the Samburu women who both live in and pass through the town. The shopkeeper informed me that she sells quite a few of these pots, given that pastoralist Samburu do not make pots themselves. She is quick to tell me that these Kikuyu pots are good for cooking, better than the cheap aluminum sufurias for sale in nearly every shop. One might surmise that the Samburu have been forced since perpetuity to acquire pots and tobacco from their agricultural

neighbors, given that the Samburu have only recently begun settling down. Thank goodness this was not the case, lest I found myself in need of an entirely new dissertation project. Samburu *do* make pots, or rather *did*.

A convergence of factors has led to the near-disappearance of potting in Samburu. Explanations for the decline of “traditional” crafting around the world often blame the introduction of mass-produced goods that can, in many cases, replace or improve upon indigenous technologies on purely functional terms. This is, arguably, the main reason for the gradual replacement of clay pots for metal in Samburu households. Metal pots such as sufurias are lighter in weight, and more durable, than clay pots. They would thus seem better suited for people who move their houses on a regular basis. Yet sufurias are *not* objectively better for cooking the foods of a pastoralist life: Bone soups, for example, are much better when slow cooked in clay pots. Samburu also believe that pots of a certain shape and size and color and decoration – the pots made for them by Dorobo, with their two ears and their blackened bodies – are requisite for ceremonial occasions. There is something intrinsically “Samburu” about them, as there has been since the beginning of time, and this intangible quality remains the only reason there are any pots left. Every older person in Samburu assured me, when asked, that they would still buy a clay pot if they could.

The problem is that demand for pots now far exceeds supply. Potting is seen as an intrinsically low-status activity. There are other economic opportunities for Dorobo now, as unrewarding and insufficient as they may be. A number of Loliin women, for example, were making and selling charcoal in Kisima during my fieldwork. There is some hope of employment outside the pastoral system for members of younger generations, particularly

if they make it through school. Educational fees, however, are still prohibitively high and very few children ever make it past grade school. It would not be an understatement, I think, to say that even though Dorobo in Samburu are now more integrated into the pastoral system, they still face tremendous economic marginalization and at times must struggle greatly to feed their families. Times were desperate enough during my fieldwork that Loliin women were willing to entertain the idea of reviving the potting industry on the Lorroki Plateau, despite the deep-seated social stigma associated with the craft.

One of the potters I came to know during my research had in fact stopped making pots for sale at market maybe ten years before. Her late husband had supported her potting career because it brought in much-needed income as they were raising their kids. Her son, once grown, had a different opinion of the craft and demanded that she stop potting altogether. He believed that potting reflected poorly on his family – pots are made by poor people, people who do not have cattle. This is, indeed, the widespread opinion also held by Samburu herders. Other people from within the Dorobo community also tried to stop her from potting as well. The persistent stigma attached to the community as a whole for having potters among its members might be one reason why. Yet I sensed a tension and frustration stemming from socioeconomic divisions even within this Dorobo community. These frustrations manifested themselves on deeply personal levels: Rich people, the potter said, are trying to stop poor people from getting other sources of income. Just like how people try to divide two friends, that is how people try to separate potters and pots.

I co-founded the Samburu Rupunye Pottery Group as a central organization for older Loliin potters on the Lorroki Plateau to teach younger women how to pot, in the

hopes that they could revive potting as an income-generating activity. Nearly the entire Loliin community expressed interest in such a project, and older potters agreed to help and support the younger people of the community in any way that they could. A few younger women swallowed their pride and gave potting a try. It takes a great deal of skill and practice to make a serviceable pot, and the first batches included more than a few that seemed a little bit wobbly. As far as I know, the overall project has thus far met with limited success (for numerous reasons). I will hold out hope, however, that younger Loliin women will begin making pots in earnest for the next *Imuget* ceremonies. Without similar efforts there is very little chance, I think, that potting traditions in Samburu will survive into the next generation.

Function Part I

Pottery

Ntoki natengena naning moti apake eiparu Loikop ontolu.

[Keji "Keata moti?" Neji "ee keata."]

Keji "keata ntolu?" Neji "ee keata."

"Oo." Maisho naa.

Amu meya nkolong.

The thing I grew up hearing since long ago is that Samburu ask if [a person] has a pot and an axe.

[They say, "does he have a pot? Then they answer "yes, he has."]

They say, "does he have an axe?" Then they answer "yes, he has."

"Okay." Then let us give him [a wife].

Because the starvation will not take her.

~ Group interview with elders at South Horr, April 28, 2009

It used to be repeated that a marriageable man in Samburu must have a pot and an axe. For the family of a potential wife, these two possessions alone symbolize his unconditional suitability as a provider. It may seem surprising that nothing is asked about cattle or other livestock; even without animals, they say, you could still feed your family using just an axe and a pot. The axe could be used to chop firewood and to collect herbs and other wild plants, and a pot could be used to boil those wild plants and the bones of wild game. Of course pots almost always belong to women (not men) and axes are owned by just about everyone, but this symbolic form of pre-marriage discourse nevertheless

underscores their functional and cultural significance to Samburu society. This chapter returns to my discussion about Samburu subsistence, and will explore the functional importance of Samburu material culture, particularly pottery, as related to food. A major aim of this dissertation is to demonstrate how pottery use has been historically important, on a material level, to Samburu in their lives as mobile herders.

6.1 Archaeological Pottery from a Functional Perspective

We know that in many mobile pastoral societies, ecological factors do not always preclude the production of pots. Nonetheless, we currently have few answers to even basic questions regarding, for example, the functional needs cattle pastoralists may have for various types of containers in domestic contexts. Ethnographic studies of pastoral domestic economies have provided insight into herd structures, demography, and diet (Dahl and Hjort 1976; R. Dyson-Hudson and N. Dyson-Hudson 1980; Little and Leslie 1999). However, there is very little empirical data available on the sizes, shapes, and designs of vessels, for instance, in which pastoralists catch and process milk and blood, or on how milk and water are stored and transported. Pastoral needs for cooking vessels are also in need of archaeological attention. Gifford-Gonzalez (2003) cites the functional importance of pottery to late-Holocene hunter/gatherers in northern Kenya, noting that boiling food in pots may have allowed fat extraction from bones. It is unknown to what extent pastoralists likewise need ceramic pots for cooking meat or fish (see Haaland 1992), or even vegetables and wild grains (see Harlan 1989), in pots.

From a purely functional standpoint, cooking pots can serve a wide range of uses and are uniquely suited to certain types of food preparation. D. Arnold (1985) presents a

list of the most important functions served by pots. First, pots can expand the resource base available for human consumption in any given area. Certain plants can be boiled to reduce toxicity, for example, and boiling bones in pots allows for greater nutrition extraction than does roasting or baking. Boiling food in pots can also reduce its bacterial load, thus extending the food's use-life by preventing or postponing spoilage. Finally, cooking in pots is a very time and labor-efficient means of processing food. For example, meat can be cooked at high temperatures for prolonged periods of time, with very little labor needed to tend the hearth fire.

There are alternative ways to boil foods, of course, and stone boiling deserves some mention here. Stone boiling – in which hot stones are placed in containers such as baskets, bark containers, or skin bags to boil liquids within – can serve as an expedient way to cook some types of foods. However, stone boiling can be an impractical if not impossible way to boil water or other liquids for any length of time. Stones need to be kept smothered by coals, and without enough firewood (and enough labor to go and get it), a sufficient amount of coals cannot be generated to keep the stones buried and hot (K. Nelson 2010). Another issue, as Nelson argues, is that stone boiling might require large fires. If cooking inside, then, stone boiling requires structures that can withstand the heat and the flames. Temporary houses made from poles and woven mats, for example, would go up in smoke. When fires need to be kept relatively small, boiling liquids in pots is much more efficient in terms of both fuel and time. Rendering grease from bones is also far more effective when done by direct boiling in pots rather than just with hot stones (Lupo and Schmitt 1997). I should note that stone boiling can be done in ceramic pots; indeed heat loss is less of a problem in pots than it is with other types of containers. For

prolonged boiling, however, it is far more efficient to simply put the pots over a fire. Soapstone vessels can also work well for direct-fire cooking, but of course this only works when soapstone or other appropriate raw materials are available.

6.1.1 Hunting/Gathering

Archaeologists have devoted some time and effort to understanding conditions in the past under which utilitarian pottery had become an important element of subsistence systems. Evidence suggests, for example, three main reasons why hunter/gatherer populations tend to use pots: to cook aquatic resources, to process nuts, and to extract maximal nutrition from meat (in other terms, to maximize hunting returns without the hunter incurring extra costs (Gifford-Gonzalez 2003)). Grease extraction from bones seems to be a particularly important issue. Studies of hunter/gatherer populations in the Americas, for example, have illustrated how seasonal stresses can demand a reliance on lean meat as fat stores in animals are depleted. However, diets based predominantly on lean meat can precipitate a host of serious nutritional problems, and people thus have a dietary need for additional fat (Speth and Spielmann 1983). Carbohydrates may also buffer those nutritional issues, and Speth and Spielmann suggest that this is one reason why many populations might participate in exchange with horticultural populations or sporadically cultivate grains themselves. In any case, the invention and/or adoption of pottery technologies by hunter/gatherer groups has occurred, throughout history, in somewhat predictable ways. Warm and dry climates, for example, seem to be an encouraging factor. One of the only exceptions on record are hunter/gatherers in the Alaskan Arctic who adopted pottery for social reasons and to deal with very specific local ecologies (Harry and Frink 2009).

6.1.2 *Agriculture*

Agriculture is no longer thought by archaeologists to be a precondition for the production of pottery, of course, as numerous studies have shown that pottery has arisen independently in both hunter/gatherer and pastoralist societies throughout the world. That being said, there are innumerable examples of pottery production and use becoming more common and more intensive among settled agricultural groups. But therein lies an analytical problem: In the vast majority of ethnographic examples on record, plant-based agriculture and sedentism co-vary. In other words, most farming societies are sedentary, and most sedentary societies are farmers (see Rafferty 1985). Determining why and how any of these societies make and use pottery is thus somewhat complicated – are patterns of pottery production and use correlated in any way with mobility? Or do they have more to do with agricultural types of production?

I would suggest that relatively few studies have deconstructed reasons behind the use of pottery in agricultural societies from a purely functional standpoint. Many grains do need to be boiled in order to make porridges and other dishes, but speculation as to ceramic function in agricultural societies is often vague and sounds something like this: “While agricultural societies, for example, have a great need of cooking pots necessary for the preparation of their agricultural products, pastoralists often do not eat vegetables and demand fewer cooking vessels as their meals, composed mainly of meat, can be prepared entirely without the use of pots” (Langenkamp 2000:160). This dissertation will not specifically address methods of preparation for grains and cereals, but rather focus on the second half of Langenkamp’s (I think erroneous) statement.

6.1.3 *Pastoralism*

Nearly all of the available literature on the use of pottery by pastoralist groups focuses on constraints imposed by mobility. So much discussion is focused on how mobile populations would produce and use pottery in a way that minimizes hassle and breakage, in fact, that little attention is paid to what those mobile populations would need pots for in the first place. One could presume that pastoralism as a subsistence strategy would require a different set of material culture than would, for instance, hunting or farming, regardless of how mobile any group might be. Subsistence could, theoretically, be a greater determinant of what a pastoralist assemblage might look like than is just the fact that pastoralists have to be mobile.

Archaeologists who have tried to document the different sorts of material culture associated with specifically pastoralist lifestyles have tended to despair at apparent paucity of goods people own. Cribb (1991) points out that herding itself actually requires very few tools or accoutrements. He does, however, present a short list of herding-related material culture seen in Near Eastern nomadic campsites. Aside from the architectural remains of corrals, this list includes “perishable wool clippings, bits of cloth (for tying the legs during shearing) and small bottles which had contained veterinary preparations” (1991:69). The wool and cloth would not survive in archaeological contexts, and any small containers found archaeologically would be difficult to identify as veterinary or not. Hole (1978) likewise describes various types of artifacts necessary to herding in western Iran, including weapons of some sort (presumably for protecting herds) and butchering tools. Unfortunately for the archaeologist, similar tools could be used by hunter/gatherer groups as well. As Hole points out, “It would be hard in many cases to

tell on the basis of stone tools only whether one were dealing with hunting or herding peoples” (1978:166). Robertshaw reaches a similar conclusion in his study of abandoned pastoralist camps in South Africa. He observed that “If one substituted prehistoric materials for the objects of tin, plastic, etc., one would be left after a few years with only surface scatter of stone artefacts and potsherds. It would then be impossible for an archaeologist to reconstruct that the site had been occupied by pastoralists rather than hunter-gatherers” (1978:29).

There can be no doubt, however, that there exists a wide range of material culture specifically associated with pastoralist production. For instance, cattle pastoralists need containers for transporting and/or processing milk. The ethnographic literature on pastoralist groups is replete with examples of pastoralists’ use of gourds, wooden containers, and animal skin bags for these purposes. Pottery and wooden vessels are also fairly commonly used as containers (Evans-Pritchard 1940; Robbins 1973; S. Smith 1978), and for pastoralists living in relatively arid environments containers for water transport and storage may be important (see Mohamed 1986). Pastoralist groups have also been known to use pottery for beer making, cheese making, and for soaking leather hides before tanning (R. J. Bradley 1992; Cribb 1991; S. Smith 1978).

Pottery is most commonly used by pastoralists for cooking (Hole 1978). Historical and archaeological evidence suggest that in South Africa, sometime before 700 AD, “Bushman” hunter/gatherers acquired pots made by Khoikhoi pastoralists. Khoikhoi pastoralists used these pots for cooking meat, rather than for storing water, milk, or blood, and Bushmen adopted these pots for similar purposes (Bollong et al. 1997). Few if

any ethnographic studies, however, have documented the use of pots by mobile herders. This dissertation will represent the first in-depth ethnoarchaeological study to do so.

6.2 The Samburu Case Study

Samburu think of their pottery as a technology that has, throughout their history, been invaluable to their lives as mobile herders. In other words, they could not have been pastoralists without it. The following sections will detail the ways in which Samburu say pottery has been essential from a subsistence perspective. Remember that the data presented in this discussion must be drawn primarily from interviews about pottery use in the past. Few people were, at the time of my fieldwork, using clay pots for mundane activities. The use of pots in Samburu has, over time, been transformed in many ways along with Samburu foodways more generally. Later chapters will consider ways in which pottery has become important in broader social and ceremonial expressions, but this chapter synthesizes ethnohistorical and ethnographic data about a time in the past when pots were used as an integral part of daily food preparation, particularly in the dry seasons. Table 6.1 presents notes from an interview I conducted with Noosoroitare Lesorogol about changes in pottery use over her lifetime and the gradual adoption of metal containers. I will then expand upon her comments, discussing specific ways in which Samburu say they once utilized pots to process milk, meat, blood, and wild plants.

Table 6.1 Interview with Noosoroitare Lesorogol (b. 1930s?) on the history of pottery use in Samburu, February 9, 2009

<p>When she was a child</p> <p>We moved very frequently, every 15 or 30 days, to where there was pasture. We moved during the dry season, not during the wet season. The whole house moved. We would put pots on donkeys with saddles, and we would move the distance you could walk in one day. In the evening you would build a fence. I remember my mother's pots, made by <i>Ltorrobo</i> women, which she got in exchange for milk.</p> <p><i>Lkunate</i> are small pots, used for ghee. You cook butter until it turns to ghee. The small pots could also be used for any other food, such as meat. Dried or deep-fried meat. Big pots, you could get fruit juice from acacia pods. Also <i>lparuai</i> or <i>mparuai</i>, the broom plant that has seeds, you cook them until it turns thick like uji, and you can add blood. To get the blood you bleed small stock, but only during dry season. You don't use blood in the wet season unless you have to slaughter an animal.</p>
<p>When she was first married</p> <p>We continued moving just as before. Only recently have things changed. We still had pots, but around this time sufurias came. This was also the time that tea came. We cooked tea in sufurias, and cooked milk in sufurias. Pots were used for meat, blood, and seeds. Not milk any more. Sufurias looked so nice, so that's why we used them. Tea drinking, at first it was just the chiefs or leaders. Women and children would suck tea juice from the leaves, and only cook one cup of tea for the husbands.</p>
<p>Lkishili Age-set circumcised (~1963)</p> <p>People weren't moving as often, except in the dry season. You could move far, maybe to Suguta Marmar. We would still use small sticks for houses.</p> <p>At this time, we had both pots and sufurias. For circumcision ceremonies, you had to buy a pot. Also used pots to cook a head, cook it at ceremonies or when there's a new baby. Many people still had clay pots, which were used for meat and bone soup, and maize flour. Kikuyu used to come when we were children. We used to exchange skins and small stock for maize flour. We would cheat the Kikuyu by taking a skinny goat and giving it lots of water to make it look fat. You could get a full sack of maize! <i>Ltorrobo</i> would sell pots to the Kikuyu. I don't know how far they came from. Both the Kikuyu and Meru came with food, exchanged for livestock, and they would buy pots. There was no maize until we got bigger. Then, we would use pots to cook maize.</p>
<p>Lkiroro Ag-eset circumcised (~1976)</p> <p>We were not moving much at that time. When Prame was born, we reduced movement.</p> <p>We would go and buy pots before circumcision ceremonies. You don't need pots in houses now, but you do need them for ceremonies. If it breaks, you can do without. There were the same pots as before, but <i>Ltorrobo</i> didn't make as many because of sufurias. But they did make pots for their own use, and you could ask them to make pots for you. They wouldn't have many you could just choose from. Kikuyu pots replaced Samburu pots. Also metal pots came from Nairobi. People started using metal containers shaped like pots, because they don't break easily. Even <i>Ltorrobo</i> started using them, because they are more durable. They are the same shape but the ears are flat, not up and down. They have a metal loop to use as a handle. With pots, you could also tie a big loop, made out of barbed wire, or cloth or bark. Pots didn't have lids, because the <i>Ltorrobo</i> didn't make them. People started having metal pots before 1990, they like these better than sufurias. You can put the lid on and go away, and the food will cook for a long time.</p>

6.2.1 *Pot Types for Milk*

Boiling milk for babies is done in small pots, presumably because of the relatively small amount of milk being boiled. Noosoroitare explained to me that small pots are also used to make ghee, although the pot needs to be large enough to prevent the foam that forms during cooking from overflowing. Ghee tastes better when it comes from clay pots, it was widely agreed, and the heat retention helps when boiling butter down over a slow fire. A similar use for pots has been described in Turkana (Donley 1976); interestingly, Donley reports that Turkana women also need seven additional types of containers for the production of ghee. Samburu somehow make do with far fewer. Elders would tell me that when tea, milky and sweet, was first introduced during the colonial period it was prepared in pots. This was around the same time that sufurias were just beginning to gain in popular use, and tea was still reserved for elder and important men. Samburu women today are adamant that tea, now ubiquitous, is boiled in sufurias not pots. Pots are generally reserved for cooking meat and medicines. The only other milk ever cooked in pots is the milk used in small quantities for soups and a few other dishes made with blood, seeds, etc. I would note that the use of smaller pots for milk processing, and the use of larger pots for processing carcasses, are similar to patterns of ceramic use seen throughout British prehistory from the Neolithic into the Iron Age (Copley, Berstan, Dudd, Aillaud, et al. 2005).

Other pastoralist groups in Ethiopia and northern Kenya are reported to use ceramic vessels more freely for milk; fresh and sour milk can be stored in either gourds or clay pots, and several sources mention both making and storing butter and ghee in pots somewhat smaller in size (O'Mahony and Bekele, 1985; Kurwijila, 1988). This would

never happen in Samburu, as everyone says the milk would go bad. I would think this explanation is based more on a serious cultural prohibition against using pots to store dairy products than it is on any real risk to the milk. One woman explained to me that flies could get in, because pots have no lids. Whatever the danger, fresh milk is never stored in pots. That would be a violation of respect for the milk and for the cows that produced it, and women would never consider using pots for that purpose. Even physically bringing pots near cattle or cattle enclosures would be highly unpropitious behavior (see Chapter 8). Interestingly, a woman from the Loliin Dorobo community explained to me that neither do Dorobo use pots for storing or processing milk. Her explanation was functional: They do not need to boil milk for children, she said, and people generally avoid boiling milk at all because the cream comes up and will evaporate.

6.2.2 *Pot Types for Meat*

Samburu are unanimous in their opinion that clay pots are most important for cooking meat. For circumcision ceremonies they have been, and remain, essential. They are also critical for cooking meat during droughts, or at least they were before metal pots gained widespread usage. Pots today are usually only used to cook meat for ceremonies or other special occasions, or to prepare herbal medicines. Women say they need two types of pots: one small pot for vegetables and milk, and one bigger pot for meat soups. A woman might also say she needs a really big pot if she has *Imurran* sons. The biggest pots in Samburu are in fact associated with meat-feasting, but note that even these tend to be cooking pots of only slightly above-average size. Bigger clay pots are also preferred for circumcision ceremonies, where bones and meat are boiled in a big pot, “big enough

for feet,” and cooked slowly for hours. Nearly all of the pots I saw in the lowlands were made by the same woman and bought specifically for circumcision ceremonies. Women say that the size of the pot they would use when cooking soups or frying meat in the home generally depends on the amount of meat being cooked, but remember that this choice generally boils down to a small pot or one slightly larger.

It is important to make clear that the Samburu pots used for ceremonies are the same pots that are used in the home. There is no such thing as a “ceremonial” clay pot as opposed to a “utilitarian” clay pot: They are one and the same. A pot might be bought specifically for a child’s ceremony, but at its conclusion the pot would be taken home and made part of a woman’s everyday kitchen. Likewise, if a woman has inherited a pot from her mother, it might be used in her home for the preparation of soups for years before being used in a ceremony. The symbolic significance of *all* pots in Samburu will be discussed in Chapters 8 and 9, but for now I would like to consider their utility from an ecological perspective. The importance of pottery in Samburu lies at least in part in its ability to allow the greatest amount of fat and nutrients to be extracted from the bones of both large and small stock. Boiling meat in pots also allows Samburu to extend the meat’s shelf-life. These facts seem most relevant when we consider how, during dry seasons and droughts, small stock might be slaughtered to provide people with essential energy and nutrition. There is also an argument to be made that the number of other ceremonies throughout the year in which small stock are killed – weddings, births, girls’ circumcisions, and so on – happen often enough to be considered a ritualized part of the subsistence system as well. It is more difficult to make the case that the slaughtering of

hundreds of cattle at a time at the *Imuget* ceremonies, and the cooking of those cattle in pots, is ecologically adaptive in some way.

Let me finally mention one other way in which Samburu boil soups and other foods. At cattle camps, *Imurran* would sometimes make quick soups and tea in steel cans. Certain type of white stones would be heated in a fire and dropped into the cans in order to the heat the liquids inside. This stone-boiling technique was simply an expedient solution that *Imurran* used when they did not have clay pots. The preparation of soups typically requires such long periods of cooking to extract enough fat and nutrients from bones that stone-boiling would simply be too inefficient. This raises an interesting point. The earliest pastoralists in eastern Africa, known from the Turkana Basin c. 4500 years ago, apparently did not use clay pots for cooking. The pots found at cemeteries and domestic sites appear to be serving vessels, and there has been no evidence for cooking over fires (e.g., burning or sooting) on any pottery found thus far. They may have instead roasted meat or stone-boiled it in baskets. Regardless, the absence of cooking pottery raises questions about how different pastoralist subsistence practices were at that time to those known in the region today. To my knowledge, all pastoralists groups living in northern Kenya today claim the use of cooking pots as part of their cultural heritage.

6.2.3 *Pot Types for Blood*

As with pots used for cooking milk and meat, there are none designated specifically for cooking blood. Samburu simply use the pots which they have. Mpashie did mention that women would use small pots that were flat like *sufurias* for boiling blood, although other women say that any kinds of small or medium-sized pots would suffice. When blood was boiled by *Imurran*, however, it was most likely done in the large

pots they were bringing back from caves and rockshelters. They would cook *nchakule* in these pots outside the home for two or three days, and then return the pots to their mothers. Blood residues might also be found in pots used to cook soups and other dishes, such as those made with seeds, into which small amounts of blood are often added.

6.2.4 *Pot Types for Plant Foods*

Plant use and pottery use are inextricably tied, as pots allow exploitation of botanical resources in areas that might otherwise be uninhabitable for pastoralists subsisting solely on the consumption of milk, meat, and blood. Some plants must be boiled to reduce their toxicity, others are boiled for their oil, and still others are boiled to leach their nutrients into drinkable juice. Figure 6.1 shows the typical methods of preparation for various plant food types. A majority of the seeds named in surveys are either often cooked in pots or always cooked in pots, along with a substantial number of fruits. All of the leaves and pods listed as foods are always boiled, often for lengthy periods of time. Although a great number of wild plant food resources can be consumed raw – as with the numerous fruits and berries collected by children while herding – it is critical to note that four of the top five most salient plants in each location (see Tables III-B through III-D) are often or always prepared in pots.

There are no Samburu pots made just for plants. Regular cooking pots are used whenever it becomes necessary to boil parts of plants for food, and the size of the cooking pot used depends on the plant to be cooked and the amount which is being prepared. In some cases women would mention that big pots were used to boil seeds including *lorido*, in other cases women would mention that their small sufurias were used for cooking “vegetables,” most often cabbage and kale. It seems likely that wild and

Figure 6.1 Preparation of wild plant foods

weedy greens were more frequently consumed – prepared first in small clay pots – before the now-common domesticates were introduced.

6.2.5 Medicines

Other scholars have done extremely thorough ethnobotanical research on Samburu pharmacology (Fratkin 1996; Nanyingi et al. 2008; Spencer 1959); here I will mainly contribute notes on the preparation of plant medicines in pots. I included a free-listing question about medicines in my ethnobotanical survey. I asked survey respondents about “*lkeek soroi*,” which in English translates simply as “medicinal plants.” “Which plants do you take as medicine,” we asked, “as a cure for when you are sick?” A more detailed ethnobotanical survey asking about herbal treatments for specific maladies may have elicited more information. Nevertheless, I was able to compile a list of plants, for each surveyed region, that have retained the greatest cultural importance to Samburu as medicines. This list can be found in Appendix III, Table III-F. These data suggest that

nearly every Samburu woman, young and old, has some knowledge about how to prepare medicines from a fairly wide range of local plants.

There is a distinction made in Samburu between herbal and ritual medicines (*ntasim*), or medicines and concoctions prepared by *loibon* (Fratkin 1996). I meant to focus on herbal medicines prepared in the home, but some *ntasim* such as *Imakutukuti* (*Clerodendrum myricoides*) were mentioned in surveys fairly frequently, by Samburu throughout the three survey areas. Many of these medicines, particularly those for sexually transmitted diseases, are considered too dangerous for anyone but local specialists to prepare. *Imakutukuti* is the strongest, and *Ing'alayoi* (possibly *Cissus* sp.), *Imugatan* (*Albizia anthelmintica*), and *serai* (*Euphorbia candelabrum*) are also considered dangerous if one overdoses. Many of these plants are considered poisonous to some degree, but adding milk while boiling will reduce their toxicity. Adding fat or oil during the cooking process will also, I was told, reduce the poisons. Other medicines require some degree of skill to prepare them effectively. *Seketet*, for example, can be over-boiled, which kills its potency. Some women mentioned clinics where home-made herbal medicines are sold in bottles. I never saw any of these clinics, but I presume they can be found in town centers such as Maralal. In many cases the lines between medicines and herbs are indistinct. Children, for example, are not supposed to be given plain milk when herbs like *lamai* (*Xymenia caffra*) could be added. The herbs are said to be good for the children, preventing them from getting sick. Post-partum women will prepare other herbs such as *larudenyai* (*Odontella fischeri*) branches, boiled in soup with blood and fat. Livestock are also sometimes slaughtered to make soups for sick people, into which herbs are often added to “cool” the stomach and improve digestion (see Holtzman 2009).

As with plant foods in Samburu there is some regional variation in the use of plant medicines, and this variation again most likely relates to regional differences in vegetation. *Lmakutukuti* is one of few medicinal plants known throughout Samburu. *Lkululai* (*Rhamnus staddo*), *lakirding'ai* (*Croton dichogamus*), and *lamuria* were named often in both the highlands and on the Lorroki Plateau. *Lkinyil* (*Rhamnus prinoides*) was also commonly listed in the highlands, and *leparmunyo* (*Toddalia asiatica*) was commonly listed on the Lorroki Plateau. Medicinal plants named in the lowlands again differed from those known elsewhere. *Lmakutukuti* had the highest salience index, followed by *Inyiriman* (*Maerua enlichii*), *lasaramai* (*Harrisonia abyssinica*), and *Igiriai* (*Lawsonia inermis*). The parts of a plant most likely to be considered medicinal are its bark or roots, and so these herbal medicines are generally available for harvest throughout the year. However, many medicines are considered most potent in the dry seasons.

Over ninety percent of the medicinal plants for which preparations could be detailed are boiled in pots (see Appendix III, Table III-G). Medicines are made in relatively small quantities and are thus cooked in small pots. Jean Brown collected a pot at Wamba in the 1970s that was apparently identified by potters as a medicine pot (see Appendix I, Figure I-J), but note that her written description fits the definition of an *lkunate* with an added lid. No potters or any other Samburu whom I interviewed had ever heard the term “*moti loldewai*” in reference to a medicine pot. Consensus seemed to be that the same small cooking pots used at home to cook vegetables were the same pots also used to make medicines. Clay *lkunate* are vastly preferred to small metal sufurias when cooking medicines; indeed many people believe that in order for herbal medicines

to be effective they must be cooked in pots made from clay. It is difficult, if not impossible, to quantify the ecological importance of medicinal plants to Samburu survival: Are Samburu, in fact, more likely to survive as a group in harsh environments if they have some knowledge of medicinal plants and have some effective way to prepare them? I do not know, but Samburu would certainly say yes. The last few pots in Siambu are now, in fact, being carefully curated in part for precisely this purpose. Similar circumstances, I would note, once led to the protection and preservation of medicinal clay pots in northern Bénin (Sargent and Friedel 1986).

6.2.6 *Veterinary Medicines*

Western veterinary medicines are becoming increasingly popular in Samburu markets; indeed relatively large sums of money are now spent by many stock owners on chemicals to treat serious maladies such as worms, ticks, East Coast fever, etc. Nevertheless Samburu still make use of native plants to both cure and control diseases in livestock, and acquiring ethnoveterinary knowledge is still being encouraged from generation to generation as a fundamentally important part of being a herder. Although Bussmann (2006) reports “hardly any veterinary use of plants” by Samburu living near Mt. Nyiru [Ng’iro], this observation is based on the small percentage (2%, n=5) of the total plants with known uses that were identified as veterinary medicines.

I would argue that botanical veterinary medicines are nonetheless *relatively* important to the practice of Samburu stock-keeping. Six veterinary plants were identified during this current research. *Seketet* (*Myrsine africana* L.) is perhaps the most commonly used, and prevents and treats worms in cattle, sheep, and goats as well as humans. The preparation of seketet will be discussed further in my chapter on grindstones, but note for

now that a large number of stock-keepers still feed seketet to their animals on a regular basis, as often as every few months. *Lmugutan* (*Albizia anthelmintica* Brongn.) is another plant used to treat worms. Roots are burned, ground, and then boiled and given to animals with water. The roots can also be ground and then simply mixed with salt. Heine et al. (1989) describe how *lng'alayoi* (*Cucumis* sp.) can be used to encourage a cow to accept her calf by grinding the roots and inserting them vaginally into the cow. *Mpopong'i* (*Euphorbia* sp.) branches are most commonly boiled with bone soup and used to treat sickness in humans but can also be boiled in water and given to sick animals to drink. *Labaai* (*Psiadia punctulata* (DC.) Vatke) leaves are boiled, and baby goats with flea problems are then bathed in the liquid. The roots of *lamuria* (*Carissa* sp.) are also boiled, and the liquid is given to livestock to remove the placenta after giving birth. Finally, a grass called *lkujita ong'u* (unidentified) is given to livestock in the lowlands as a kind of “vaccine” against upland diseases for when the animals are moved there to graze. The leaves of grass are boiled in large pots and the liquid is then given to the livestock to drink.

As an interesting point of reference, Ole-Miaron (2003) conducted extensive interviews and surveys on Maasai ethnoveterinary practice (see also Ryan et al. 1996). Seventeen plants were identified as key treatments for common livestock disease; many of these are common to Samburu ethnoveterinary practice as well. Of the thirteen plants named for which Ole-Miaron presents details on preparation, nine require boiling. The remaining four are either fed straight to animals as fodder or soaked in water. For both the Maasai and the Samburu cases, it seems likely that botanical medicines were afforded even greater importance before the introduction of Western drugs. The true efficacy of

wild plants used by Samburu as veterinary medicines has, it should be noted, been questioned on numerous occasions by livestock scientists (Gathuma et al. 2004; Githiori 2004). Results have been mixed, but needless to say Samburu believe in their effectiveness implicitly.

6.3 Design, Function, and the Issue of Transport

“Meyuieri moti mingani. Kejo Loikop keimingani... Meata nkiyiaa.”

You can't cook with a deaf pot. Samburu say it is deaf. It doesn't have ears.

– Neng'iro Lepilale

I have described in detail a number of reasons why, from a functional standpoint, pots in Samburu are an indispensable type of technology. I now want to consider whether or not the functional needs that Samburu have for pottery are in any way reflected in vessel design. In other words, does the unique shape of a Samburu cooking pot, for example, represent an adaptation to their specifically pastoralist way of life? Do patterns of mobility and/or subsistence, such as those seen in Samburu, necessitate pots of certain shapes, weights, or decorative styles? I raise this issue because several assumptions about pastoralist pottery can be found in the archaeological literature: vessels might need thicker walls to survive the potential hazards of animal transport, or perhaps they need to be tempered with fiber, straw, or dung to make them lighter and thus easier to carry (see Banning and Köhler-Rollefson 1992; Haiman and Goren 1992). Never mind the fact that pots can often be cached. Cribb (1991), for example, points out that transhumant pastoralists might leave behind big, bulky vessels at seasonally-occupied sites, and only travel with smaller, more valuable pots. These smaller pots would then, Cribb notes, be

less likely to end up in the archaeological record while the larger pots would be more so. Mobile hunter/gatherer groups from the Great Basin, known archaeologically, also cached large numbers of pots, which were abandoned and then later returned to on seasonal rounds (Eerkens 2003). My fieldwork in Samburu is the first that I know of to examine the issue of ceramic transport from an ethnoarchaeological perspective.

Figure 6.2 *Lnjinjil* used for transporting the pot on the right

Most if not all assumptions made about pastoralist pottery indeed focus on the idea that a relatively high level of residential mobility would pose unique problems that must in some way be solved. In a way, I think it does, but perhaps not in obvious ways. Consider the importance of handles on Samburu pots. When I showed Samburu women photographs of pots without handles, the first comments made were invariably about the how the pots were missing their ears. The quote at the beginning of this section refers to a

common bit of Samburu wisdom, which is that you cannot cook with a deaf pot. The handles of pots are called ears, and any deaf vessel, such as a Kikuyu pot, is deemed unsuitable either for cooking or for use in ceremonies. Samburu will even go so far as to attach handles made from cow dung to handlesless clay pots, or to metal pots, to make it properly “Samburu” for ceremonies. So why are handles so important? One might assume that handles are used to ease transport, to make them easier to carry long distances as families

Figure 6.3 Somali water pot at the Nairobi National Museum.

move with their herds. I would argue, however, that the full story is far more complex. Straps of woven rope may be tied onto the handles, yes, when being carried by foot from one boma to another, or from a town center towards home. However, an *lnjinjil* (Figure 6.2) was traditionally seen as the best way to carry a pot whenever a family packed up a house and moved their belongings. An *lnjinjil* is a small cage or basket made from woven twigs, designed for a pot to fit snugly inside. The *lnjinjil* could then be strapped to the side of a donkey. A sheepskin might also have been wrapped around the pot for added protection before being placed inside, and sometimes leather straps or metal strips were used as reinforcement for the twigs. This system seems to have been highly effective in preventing clay pots from breaking while being moved. Similar methods are used by Somali women to transport their giant handle-less water pots (Figure 6.3). These pots

would be strapped onto their backs or onto the sides of their camels. Mobility, of course, takes many forms. Samburu women had to worry about moving their pots when moving their homes; on other occasions potters had to find creative ways to safely transport their pots to market. One potter from Mbaringon remembered carrying pots nearly twenty kilometers to be sold in Maralal. She would spend at least one night there, and come back when all of her pots had been sold. She could use a big rectangular basket (*siogsiog*), made from tree barks, to carry a dozen or so pots stacked within each other. The basket would then be slung over both shoulders like a backpack; she told me (somewhat mysteriously) that this way of carrying things was employed before people started shouldering heavy loads by using straps over their foreheads. I was also once told that men, on occasion, would make a “ladder” for carrying pots, called a *sainiai*, which would rest on their shoulders, extending both in front and behind them. Several pots, in their baskets, could then be attached and carried some distance.

What, then, of handles? They are not considered necessary for long-distance transport, although they can be useful when carrying pots shorter distances by foot rather than donkey. Women also hang pots by their handles inside the house (see Appendix I, Figure I-CC), because leaving them on the ground risks breakage by children or animals. Perhaps the most important reason for pots to have handles, however, is that handles make it much easier to remove cooking pots from three-stoned Samburu hearths. Potholders have yet to make inventional inroads in Samburu; strips of cloth or pieces of paper must do instead. Handles allow for a better grip on the pot, preventing breakage at the critical moment when a burning-hot pot must be removed from a fire. Whenever I asked Samburu women about the importance of handles, the answer was always the

same. "How could you take a pot off a fire, without handles?" It is perhaps telling that the only non-handled pots ever made by Dorobo in Samburu were pots that had nothing to do with cooking: *moti lekweshi*, beer pots, and water pots.

The acute concern with preventing the breakage of pots originates, I think, in the difficulties often faced by Samburu women in obtaining replacements. Dorobo communities in Samburu were, and are still, fairly dispersed, and Samburu women in various locations out on the plains often had to make special trips when their pots broke. Women told stories of walking for entire days to get pots, and of sending their husbands at times to do the same. A woman in the lowlands mentioned once sending her son to walk for six or seven hours to find a potter in the Ndoto Mountains. The handles found on Samburu cooking pots, then, are considered (by Samburu) to be of tremendous functional importance because they seem to reduce the chances that any given pot will be dashed on a hearthstone. All Samburu cooking pots have the same basic minimalist design; they are even roughly similar in heft and size. My point is that Samburu recognize this design as the most durable, and most easily transportable, form a potter could make.

6.4 The Transition from Clay to Metal

Samburu opinions about the suitability of aluminum *sufurias* versus clay pots for cooking reflect the degree to which clay pots are today understood as the only truly appropriate vessels for the processing of "pastoralist" foods such as bone soups, ghee, blood, and (I would argue) wild plants. There are, as Samburu women attest, a number of practical reasons why people think clay pots are better quality cookware for those foods than aluminum *sufurias*. The thin-walled *sufurias* scorch food; pots do not. Clay pots also

retain heat better than sufurias, and consequently less firewood is needed to boil and simmer bone soups and seeds for longer periods of time. Less water evaporates from clay pots when slow cooking as well. And, although this would be hard to measure quantitatively, food in pots always tastes better. This is a common claim around the world as to the virtue of cooking in pots, and some speculate that improved taste might come from the salt in the clay. The slow-cooking process can also, of course, break down meat from even the toughest and stringiest goats, making it soft and tender. Samburu also believe that fat is retained in the pot during the cooking of fatty cuts of meat, and then released back into soups. This process, they say, can improve the taste of leaner meat. Even if a woman is cooking maize in a pot, some say, a person outside the house might detect the sweet smell of meat. The only issue with clay pots, I was told, is supervision. Dogs and small children are a recurrent problem. They can reach in and steal bones if a pot is left unattended, since no clay pots ever have lids.

On the other hand, Holtzman's (2009) "foods of the pot," which include prepared foods such as maize meal, might be more accurately described as "foods of the sufuria." These foods are boiled quickly, in a matter of minutes, and sufurias serve that purpose fine. The preponderance of sufurias in the highlands, then, where maize meal is a daily staple and the preparation of meat and blood is increasingly rare, makes some sense on a functional level. When no clay pots are available, however, meat must be cooked in those same sufurias. I point this out to emphasize the fact that just as shifts in Samburu foodways are responsible for shifts in household cookware assemblages (i.e., clay pots to metal pots), the types of pots now found in women's houses are themselves responsible for changing some ways in which people process "traditional" Samburu foods. Large

limb bones, for example, were typically put whole into large clay pots to simmer. Now, meat and bones are chopped into smaller pieces to fit into sufurias. I suspect that this is also done because smaller pieces cook more quickly, as simmering for hours is much more difficult when done in cheap aluminum pots. Older women often said to me that they prefer cooking the old way. Younger women, they tell me with some sense of regret, only now practice the new.

Holtzman (2009) writes extensively and compellingly on Samburu attitudes towards food, particularly their complex ambivalence about the widespread adoption of maize meal and other purchased foods. This ambivalence is grounded, Holtzman argues, in the recognition that the adoption of purchased foods such as maize has allayed, in many ways, a very real fear among Samburu of dying during droughts and other food shortages. Maize can, and has, saved many lives. Yet the process of cooking and eating maize for daily sustenance, Holtzman explains, is contributing to a sense of moral decay as long-held ways of segregating by gender and age are breaking down. People now find themselves eating together, around one pot and one cooking fire, which before would not have happened. I would simply extend Holtzman's arguments to say that attitudes towards cooking vessels themselves are also fraught with the same sense of ambivalence, and remain in a state of flux. Noosoritare presumed that long ago people bought sufurias because they were shiny and new. Today, the regular purchase of aluminum sufurias for cooking instead of clay pots is rued, at least by many elders, as a sad and unfortunate state of affairs. Yet they are cheap and durable, and allow for expedient cooking of these new foods. The few pots that have survived in Samburu since most potters stopped

potting are now seen by many as relics of a lost way of life, only relived during the circumcision ceremonies in which every boy must have his pot.

6.5 Archaeological Signatures

Consider the visibility of Samburu foodways as they might appear in the archaeological record. Butchery practices, and changes in those practices over time, would perhaps be the easiest aspect Samburu subsistence to reconstruct, using conventional zooarchaeological analyses. Paleoethnobotanical methods utilized at domestic contexts might recover macrobotanical remains of seeds used as plant foods. Herbs – the roots and barks used by *Imurran* at caves and rockshelters – would be unlikely to both preserve and remain identifiable in the archaeological record. Milk and blood are a different and interesting story. A great deal of research is now being conducted on residues in prehistoric pottery used by herding and/or dairying communities (Copley, Berstan, Dudd, Aillaud, et al. 2005; Copley, Berstan, Dudd, Straker, et al. 2005; Copley, Berstan, Mukherjee, et al. 2005; Copley, Berstan, Straker, et al. 2005; Craig et al. 2011; Outram et al. 2009; Whitney 1992). Lipid residues in pots can now be identified as coming from either the milk or the carcass fat of various animals such as cattle, sheep/goats, and horses; milk residues in pottery are of course interpreted as evidence for dependence on dairy as a secondary product (e.g., Sadr 2008:186). Protein residues in ceramics are more difficult to recover yet new methodologies show some promise (Barker et al. 2011). The potential that such research holds for understanding the development of pastoralist societies across the world is huge, and my ethnoarchaeological

data contribute some of the only background information available as to how pots can be used in pastoral contexts.

A basic assumption holds that highly specialized pastoralists own types of containers that reflect a unique dependence upon milk and other milk products. Pots owned by pastoralists, then, most likely have something to do with milking or storing milk, or cooking milk. My Samburu data indicate that there should, in fact, be milk residues in Samburu cooking pots. Small cooking pots, for example, should bear traces of milk boiled for babies and ghee. Larger cooking pots may also bear traces of milk used to make ghee, as well as the milk added to soups. Of note, in any case, is the fact that only certain types of milk processing will leave lipid residues. Boiling milk for butter and ghee will yield milk residues that might survive in the archaeological record, while using pots to collect or store raw milk will not (Copley, Berstan, Dudd, Aillaud, et al. 2005). Thus a lack of milk residues in archaeological pots should not exclude the possibility that those pots were made and used by pastoralists subsisting mostly on milk. Shalo (1987) reports that for some (unspecified) pastoral populations in eastern Africa it is taboo to heat milk or milk products. Milk is thus not used in cooking and butter is only used for cosmetic purposes. Milk residues would be completely absent in archaeological analyses of pottery used by those groups, despite the fact that their subsistence economies center on dairy. In Samburu, milk residues in pots would *not* reflect the full degree to which Samburu are dependent on the consumption of fresh and fermented milk, which in any case are collected and stored in other types of containers.

It is unknown whether or not lipid residue analyses would reflect the full range of purposes for which Samburu pots are used. There is some possibility that wax residues

from the cooking of leafy greens would be detected in laboratory analysis (Charters et al. 1997; Evershed et al. 1991), along with residues from wild fruits such as doum palms (Copley et al. 2001). What would be abundantly clear is that pots are used to boil bones. Given that the same individual pots are used for boiling soup in both domestic settings and for ceremonial meat-feasts, there should be little difference in residues from pots found in contexts associated with either of those two activities. This should hold true even though small stock are most often butchered and cooked in settlements as part of everyday life (or, for small ceremonies such as for the birth of a child), while cattle are most often butchered and cooked during meat-feasting at rockshelters or for large-scale ceremonies such as those for boys' circumcisions. To my knowledge, no studies have yet examined the antiquity of blood processing and consumption in eastern Africa or elsewhere. The regular consumption of raw blood would likely remain invisible as an element of a pastoralist subsistence system in the archaeological record. Unfortunately, protein residues in pots could also be difficult to extract and analyze if the blood has been boiled (Craig and Collins 2002).

Residue analyses are also limited by a lack of comparative pottery samples. It is common practice to sample various types of lipids and fats from modern contexts to better identify lipid signatures in archaeological pottery. Those lipids and fats are then sometimes boiled in brand new pots as an experimental step. What has never been done, however, is to sample pots that have undergone lifetimes of use in real-life pastoral contexts. Potsherds collected on the surface from a number of locations and contexts across Samburu currently await processing in Dr. Richard Evershed's laboratory at the University of Bristol. These should provide a valuable comparative dataset, particularly

for current studies examining residues found on Pastoral Neolithic pottery from central Kenya (Kathleen Ryan, personal comm.).

6.6 Conclusion

I will end this chapter by making a quick point about studies of ceramic ecology in pastoralist settings. There have been none. However, the vast majority of scholars to speculate on the issue focus on either (*a*) the constraints imposed on ceramic *production* by mobility, or (*b*) the problem of transport. In a footnote to his recent article on nomadic potters, for example, Eerkens (2008:307) writes that although his work focuses on characteristics of potting industries in mobile hunter/gatherer populations, “there ought to be analogous predictions for the material technologies of nomadic pastoralists as well.” He suspects that many of the same relationships between ceramic technologies and mobility in hunter/gatherer groups may also apply, but that pack animals owned by pastoralists may mitigate the need for the production of lighter-weight objects. Banning and Köhler-Rollefson (1992:191-192), citing Miraghiuolo (1979), also speculate that ceramics made by mobile pastoralists might be morphologically different than ceramics made and used by more sedentary hunter/gatherer or agriculturalist groups. The need for efficient and effective transportation of milk and water by pastoralists, they explain, might necessitate the more frequent production and use of vessels with constricted openings.

No studies have yet attempted to disentangle ceramic production from ceramic consumption to question exactly what needs pastoralists would have for ceramics in the first place. This project is the first, and this chapter has detailed the basic uses that

Samburu have had, over the last half-century or so, for clay pots. I have argued that Samburu need pots to cook milk for ghee, to cook blood, to cook meat and bones, and to cook wild plants. Pots allow Samburu to extend the shelf-life of several resources, including milk and meat, into the dry season when droughts pose a recurrent threat. Pots also allow for the maximum nutritional benefits to be gotten from bones, and for the exploitation of resources such as certain seeds that require sustained and repeated boiling. Pots, in short, are necessary to the success of this pastoralist subsistence system in very specific, very critical ways.

Lest it be thought that the Samburu use of pots might be unusual for a pastoralist group, I would point out other studies which suggest that this pattern of pottery use might be entirely as expected given the northern Kenyan climate and the types of resources upon which Samburu rely. K. Nelson (2010) compiled data from the Database of North American Indians, Binford's Hunter-Gatherer Database, and eHRAF to model the distribution of various container types and cooking strategies visible in the archaeological record, across numerous variables including latitude, patterns of rainfall, and other local climatic factors. Samburu follows those patterns exactly as expected: direct-fire boiling as opposed to stone boiling in most domestic contexts, the use of multiple cooking methods, and the use of numerous containers perishable in the archaeological record. Although the ethnographic literature on pottery use by other northern Kenyan pastoralist groups is sparse, it seems that most if not all groups (including the Turkana, Maasai, and Borana) have utilized pots in their recent histories in similar ways.

Function Part II

Grindstones

Down the street near Maralal's dusty main roundabout is a stretch of small shops with a long cement porch that stretches for nearly a block, such as it is. Dozens of Samburu women are seated on the porch, lined up with their legs stretched out in front of them, selling tobacco and herbal medicines. They grind the tobacco, using grindstones, to make snuff mostly for elder Samburu men and women. In the past, I was told, nearly every Samburu household would have had a set of grindstones. Grindstones mostly belonged to women, and were seen as requisite pieces of household equipment for the care of family and herds. This chapter will continue my examination of pastoralist material culture from a functionalist perspective as I examine grindstones and their places in Samburu lives. I will open with a brief discussion about the interpretive value of these artifacts as proxy evidence for various forms of subsistence and social/spatial organization in the archaeological record. I will then summarize the ethnographic and archaeological evidence for grindstone use by pastoralists throughout Africa. Finally, I will attempt to describe the ways in which Samburu have used grindstones throughout their history as mobile herders.

6.7 Interpretive Frameworks

The presence of grindstones, like pottery, is no longer considered proof that any given site's inhabitants were settled agriculturalists. It has, in fact, long been recognized that throughout the world a wide range of grinding technologies have been utilized by

non-agricultural or “pre-agricultural” groups (see Kraybill 1977). J. Adams (1999) critiques the uncritical ways in which archaeologists continue to use grindstones as subsistence indicators in the prehistoric American Southwest. Her evidence suggests that hunter/gatherers did not, in fact, radically change their food processing technologies as they began cultivation (see also Wills 1988). Fuller and Rowlands (2011) also make the good point that general methods of food preparation such as grinding can in fact exhibit continuity over millennia despite repeated local changes in types of foods being consumed. Nevertheless, archaeologists have found some success when considering grindstones as proxy indicators for some kind of environmental change, which is presumed to result in changing patterns of food procurement and processing as well as landscape use (e.g., Huffman 1996; Smith and Ross 2009).

An interesting pattern emerges when examining the archaeological literature for Africa, where many archaeologists once grasped for evidence that “Neolithic” societies in Africa did, in fact, cultivate domestic grains. Material from Hyrax Hill in central Kenya, for example, is said to demonstrate “...an economy that was predominantly pastoral, with hunting and collecting, although grindstones and stone bowls with ‘traces of carbonaceous elements adhering to the inside’ ...are suggestive of seed-collecting and possibly domestication” (Seddon 1968:491). Robertshaw and Collett bring up the few, scattered grindstones found at other Pastoral Neolithic sites including Crescent Island and Narosura, and write that “...the size of unbroken or reconstructible querns is often large and very different from the small palettes associated with Late Stone Age hunter-gatherer sites. This suggests processing of cultivated cereals” (1983:72). Yet no paleoethnobotanical evidence for early indigenous domesticated grains has ever been

found in Africa, despite intensive efforts to find it, and consensus is now that there simply *was* no agricultural production in eastern Africa until relatively recently.

It seems, at least in Africa, that archaeologists have been overly quick to suggest that grindstones, pottery, and other archetypical artifacts of the “Neolithic Revolution” indicate in and of themselves some form of agricultural production. What has fed this tendency, in part, has been a lack of ethnoarchaeological consideration of the ways in which such artifacts can play critical roles in non-agricultural economies: The ethnoarchaeology (and experimental archaeology) of grinding technologies has been almost exclusively limited to studies of grindstone use in farming societies (Ertug-Yaras 2002; Horsfall 1987; Phillipson 2001; Searcy 2011; M. Wright 1993). Roux’s (1985) ethnoarchaeological research on grindstone use by both sedentary, agricultural populations and by semi-nomadic agropastoralists in Tichett, Mauritania, is the most important study yet conducted on relationships between mobility, subsistence, and grindstone technology. This chapter on Samburu grindstones will address and expand upon a number of her conclusions. Brief as it is, this chapter will also stand as the only case study I know of on the use of grinding technologies by a highly specialized pastoralist group.

6.7.1 An Abbreviated History of African Grindstone Use

I will briefly review the archaeological and ethnoarchaeological literature on grindstone use by hunter/gatherers, pastoralists, and agro-pastoralists, focusing on case studies from Africa. The use of grindstones can be an important way to maximize nutritional gains from plant resources (Stahl 1989); K. Wright’s (1994) review of the hunter/gatherer grindstone use in southwestern Asia, for example, emphasizes the very

high labor costs associated with grinding wild cereals, but notes the importance grindstones may have had to the maximization of nutritional returns from foods during periods of severe climatic stress.

Small grindstones used to crush ochre, recovered from 100,000 year-old levels at Blombos Cave in South Africa, attest to (among other things) the antiquity and importance of grinding technologies to human societies. Ethnographic evidence from modern hunter/gatherer communities suggests that similar practices have continued in southern Africa at least until the mid-twentieth century. There is, for example, “...historical, as well as ethnographical, evidence that the Bushmen used, and still use, grinding-stones for grinding grass seeds, roots, ochre, clay, etc.; smooth, grooved stones for the straightening of arrow reed shafts; grooved sandstone for polishing ostrich eggshell beads; and sharpening stones for bone and metal points” (Rudner 1979:6). These multi-purpose grindstones were probably similar in size and shape to the “small palettes” mentioned by Robertshaw and Collett above as characteristic of Late Stone Age hunter/gatherer grindstones found at sites throughout eastern Africa. In the recent ethnographic past, hunter/gatherer groups in southern Africa have also been known to use grindstones, along with hammerstones and anvils, to process mongongo nuts (*Ricinodendron rautanenii* Schinz) (Lee 1973). Archaeological sites from the western Kalahari Desert, Botswana, have yielded similar artifacts in association with carbonized mongongo nut shells, in early Holocene contexts dating as far back as the early Holocene (Robbins and Campbell 1990).

The functional interpretation of grindstones associated with hunting-gathering and pastoralism in the ancient Sahara and the Sudanese Nile Valley centers on the intensive

processing of wild plant resources. In the Sahara, the occupants of Wadi Kubbania c. 17,000 bp were seasonally-mobile hunter/gatherers who utilized wild resources including fish, wild cattle, and gazelle. Grindstones at Wadi Kubbania and other later sites such as Tushka are cited as evidence for the processing of local wild plants (Wendorf and Schild 1976; Wendorf et al. 1989). The makers of “wavy-line” ceramics c. 9500 bp were more sedentary hunter-gatherers who probably harvested wild plants such as cereals fairly intensively (see Marshall and Hildebrand 2002). At other sites throughout the Acacus in modern-day Libya, populations of that era hunted wild game – and possibly managed Barbary sheep – as they also gathered and ground wild grass seeds (Barich 1987, 1998; Di Lernia 1999; Garcea 2001).

The occupants of Nabta Playa in Egypt c 8,000 bp were mobile cattle pastoralists who also relied seasonally on plants including wild sorghum (Wasylikowa and Dahlberg 1999; Wendorf and Schild 1998). Crader (2008) reports extensive grindstone use by mobile herders to process wild plant resources at Adrar Bous in northwestern Niger. In the Sudanese Nile Valley, pastoralists may have used wild plant resources more intensively than earlier groups of hunter-gatherers in the region. The accumulation of thousands of grindstones at sites suitable for cultivation suggest that by c. 5,000 bp pastoralist groups were seasonally harvesting wild sorghum (Haaland 1982, 1995). Impressions of sorghum seeds in pottery support this conclusion. Haaland suggests that in this case the use of grindstones to process wild sorghum and other seeds such as *Setaria* sp. may have been a necessary precondition for the domestication of sorghum, although she notes that the presence of grinding technology cannot be said to *predict* domestication in any context.

As pastoralism later spread throughout eastern Africa, grinding stones are found much less frequently in the archaeological record. Smoothed, rounded stones possibly used as upper grindstones of some sort occur in small numbers at ceremonial pillar sites in the Turkana Basin (Figure 6.4). Their function is currently unknown. These sites were occupied by generalized cattle, sheep, and goat pastoralists who subsisted largely on wild fauna (Marshall et al. 1984). A lack of large and abundant grinding implements at the few domestic sites in this region suggests an absent or infrequent need for grain or seed processing. A more specialized form of cattle pastoralism likely developed as herders moved into the Central

Figure 6.4 Possible upper grindstone found at the Jarigole Pillar Site (GbJj1)

Rift Valley and throughout Kenya and Tanzania. Robertshaw and Collett (1983) cite polished stone artifacts found at associated archaeological sites as indirect evidence for agricultural production. Some ground stone “axes” found at sites including Prolonged Drift and Prospect Farm, they explain, were likely used for chopping wood, but others could have been hoe blades. They also cite the large querns, or lower grindstones, found at sites such as Crescent Island, Narosura, and the Njoro River Cave as evidence in and of

themselves for the processing of cultivated cereals, although no paleoethnobotanical data support this conclusion.

The Elmenteitan crematorium at Njoro River Cave contained perhaps the most spectacular collection of grindstones yet found in eastern Africa (Leakey and Leakey 1950). Lower grindstones were found with seventy-seven of the site's seventy-nine burials. Although no studies have examined the functions these grindstones held for Elmenteitan men and women before being ceremonially interred, patterns of ochre-staining do reveal some of the only evidence we have for gendered patterns of use. Men were apparently using grindstones to crush ochre, while women were ostensibly using their grindstones for something else. Robertshaw and Collett (1983) suggest the preparation of grains.

The ethnographic record shows that many pastoralist groups in Africa (including the Dinka, Nuer, and Jie) do cultivate grains even if their cultural identities are built around the herding of cattle. Nuer cultivate *Sorghum vulgare*, referred to by Evans-Pritchard as a type of millet, seasonally along the banks of the Nile. Evans-Pritchard (1940) states that at the time of writing the grinding of grain seemed to have been a recent introduction, although he does not speculate as to how Nuer might have processed sorghum prior to the adoption of grinding technology. Fur in Sudan use grindstones for grain, primarily, and also for grinding roots and dried meat (Haaland 1982). Most households, Haaland notes, have two sets of grinders, one rough for the first stage in grinding and another finer grindstone for the final stages. Households with potters typically have three sets of grindstones, two large for grinding grain and one smaller for grinding ochre and clay. Although the Fur are an agropastoralist society, Haaland does

explain that most grindstones are associated with agricultural rather than pastoral activities. Crader (2008) reviews the literature on Tuareg grindstone use for processing grains such as wheat, barley, and corn, numerous wild grains, berries, and tubers.

6.8 Grindstone Use in Samburu

It took me several months to figure out that grindstones ever existed as a common item in Samburu households. Only after I noticed people grinding tobacco in Maralal did I begin to ask elder men and women about grindstone use in the past. It soon became clear that they carried a wealth of cultural knowledge about grindstones that extended beyond just their know-how in processing snuff. In the highlands I met the only woman I ever came across who still had a set of upper and lower grindstones for household use. This set is pictured in Figure 6.5. The artifacts pictured include a relatively small flat palette, or *nkii*, and a smoothed handheld stone, *ltotoi*, used as a pestle for grinding and rubbing. On at least one occasion I noticed that people were using building rubble, such as flat pieces of concrete, as lower grindstones. They were reluctant to let me examine such objects, however, as they considered these ersatz grindstones to be much inferior to the “real” stones they once had.

Grindstones are used primarily for the preparation of herbal medicines, *lchani* or *lkeek* (“trees”). The three most common are presented in Table 6.2: *longososi*, *lmugutan*, and *seketet*. Roots and seeds are the most frequently cited parts of plants to require grinding (see Table 6.6). These are usually processed in small quantities, and occasionally seeds are simply wrapped in cloth and pounded with an upper grindstone to break them apart. Roots and seeds are typically boiled in water after being ground. *Loisuk*

Figure 6.5 Upper and lower grindstone.

seeds, (shown in Figure 6.7), for example, are ground, boiled with tea, and then taken to treat coughs and other throat problems. Many of the herbal medicines presented here are still being prepared on a regular basis (Nanyingi et al. 2008), often in clay pots that are decades old and being curated for this particular purpose.

Figure 6.6 Loisuk seeds, *Zanthoxylum chalybeum*, dried and ready to be ground.

Although pottery, as discussed in Part I of this chapter, is critically important in Samburu for the preparation of certain foods, only twice during interviews did anyone mention grindstones being used to process wild plants that Samburu eat. The large seeds from the doum palm, *loka*, I was told by an elder woman from Siambu, used to be carried long distances by women to be ground at home. Nowadays people do not bother with *loka*, she said, because there are alternative foods such as maize meal available. The seeds of the *Balanites orbicularis* tree, *sarai*, are also said to be ground and then boiled repeatedly until edible. I have only found one other mention in the ethnobotanical literature of plant foods (or drinks) being ground; according to Heine et al. (1988) *lmomoi* fruits are ground and used for making beer. When elders are asked if grindstones are ever used in the preparation of food, however, the answer is always no, grindstones are for medicinal plants.

The barks and roots that were described as “herbs” in the previous chapter rarely need grinding. They are, however, often pounded on rocks to help them cook better in soups. The same is said for *Imaroo* fruits, which are pounded before being cooked. Both upper and lower grindstones can be used for pounding, but people typically just grab whatever rocks they can find.

Figure 6.7 Botanical medicines, herbs, and foods processed using grindstones

Table 6.2 Three plants most commonly ground. Information summarized from formal interview with Poloite Lolgeeti, April 15, 2009 and from informal conversations with Prame Lesorogol, who is highly trained in both Samburu and Western veterinary medicines.

longososi	lmugutan	seketet
<p><i>Cladostigma hildebrandtioides</i> <i>Hildebrantia sepalosa</i>?</p> <p>Longososi is for humans only, and is used to treat abdominal/stomach problems. It makes people have diarrhea, which is a good thing, as it removes disease. Longososi also gives you energy.</p> <p>The plant is found in warm areas, in the lowlands. People make special trips there to go get it.</p> <p>Women prepare longososi, although it is taken by everyone.</p> <p>There are two ways to prepare it. First, remove the roots, and dry them. Heat the roots to remove their bark, then let the roots dry again. Then grind them into dust. Boil in a clay pot with goat's intestines, then drink the soup. After an hour or two, it gives diarrhea. Or, once the roots are ground, put the dust in a container with water and shake. It makes bubbles; sieve using long hairs from a cow's tail, then drink.</p>	<p><i>Albizia anthelmintica</i> Brongn.</p> <p>Lmugutan is for both humans and livestock, and is used to remove worms. You use it when you are unwell; it is not really preventative for either people or animals.</p> <p>It is prepared by men, and consumed mostly by men. This is because it is very strong, and it can even make one to vomit.</p> <p>Use the roots. You have to burn them, remove the bark, and then grind the roots. You have to burn them first because otherwise it's too strong. Boil the ground roots with water in a clay pot, and you can add milk. Then drink. In the past, people drank this mixture with blood.</p> <p>For livestock, boil the roots and then give it to them with water, or grind the roots and mix with salt. It can be poisonous, so you need to have the right dose at the right time. It also causes diarrhea.</p>	<p><i>Myrsine africana</i> L.</p> <p>Seketet is for both humans and livestock. In people it treats upper respiratory infections, exhaustion and weakness, and worms. <i>Moran</i> also take it to build their bodies; you will not get cold or tired or get the flu. When you break a bone, it can help with recovery. Seketet can also prevent people from getting worms, such as happens when you drink milk too soon after eating meat. In livestock it prevents and treats worms.</p> <p>You only get seketet twice per year when the plant produces seeds, but the seeds are saved and used year-round. It grows around Mount Ng'iro and Siambu, not in the lowlands. Demand is high, people from all over the district used to come with big bags to get it from the forest.</p> <p>Seketet is prepared by men. It is generally for everyone but mostly consumed by men, because it is very strong. It can make one to vomit.</p> <p>Grind the seeds on a flat grindstone, or wrap the seeds in a cloth and pound them with an upper grindstone. One handful of seeds is enough for one or two people. For people, you grind the seeds and take just like that, although this is not advised because you get stomach problems. Or you can boil the seeds in clay pots and drink the juice. This way is recommended. For livestock, you grind the seeds, mix with salt, and give it to them like that.</p>

As mentioned in the previous chapter, numerous plants are used for veterinary purposes as well. I mention them again here because they so often need to be ground first before being administered. *Seketet* (*Myrsina africana* L.), for example, is an anthelmintic used for deworming. It is considered effective as a preventative measure in sheep and goats if administered every one to two months. Today bushels of these seeds can be found for sale at markets throughout Samburu. In February of 2009 I happened to be in Siambu when my research assistant's uncle decided to administer a "strategic dose" of *seketet* as a preventative measure to his herd of several dozen sheep and goats. The *seketet* was ground, mixed 1:1 with salt, and put in a long wooden trough out in the boma. The sheep and goats literally came running. When in previous years he would have used a grindstone to process this great quantity of *seketet*, in 2009 his family ground the seeds with a repurposed, hand-cranked cast iron mill originally purchased for grinding dried maize (see Figure 6.8).

Another less common use of grindstones in the past included the grinding of red ochre for the painting of the body and hair, so commonly seen on Imurran and occasionally on both women and men during ceremonies. This practice appears to have a long history among pastoralist communities in eastern Africa; the famous stone bowls of the Pastoral Neolithic in Kenya and Tanzania are often noted to contain ochre residue and have no other discernable function (Leakey and Leakey 1950). I was told that ochre, in Samburu, only came from a few areas, specifically the highlands and near the Pokot communities who live on the other side of the Great Rift escarpments. People would make special excursions just to get ochre, which would be collected and loaded on donkeys. Today, ochre powder is sold in towns and little if any grinding is needed.

Figure 6.8 Grinding *seketet* in a hand-cranked maize mill

The final uses for grindstones in Samburu are in craft and iron production. Potters will occasionally use grindstones to process hardened lumps of clay, grinding dried lumps in order to remove larger impurities before rewetting the clay and shaping their pots. Leather mats can provide a suitable grinding surface for clay as well. There is no need in Samburu for potters to temper their pots with ground mineral inclusions, as dried donkey dung can be used instead. Other women in the community could be enlisted to help with the tedious job of grinding up clay. Brown (J. Brown 1989b) refers to the grinding stones used for clay as *soi*; my observations suggest that these are simply the same grinding stones as used for everything else.

Figure 6.9 *Lekonono* hammerstone

When smithing spears, *lekonono* blacksmiths use hammerstones very similar to upper grindstones in order to pound the heated iron into recognizable form (see Figure 6.9). These hammerstones are pitted from repetitive percussion, and are less likely to have wide, flat polished surfaces than stones used to process plant material. The *lekonono* hammerstones are found in association with larger, heavier rectangular stone blocks used as anvils, dozens of which can be seen at the largest abandoned *lekonono* settlements. *Nkii* also refers to a sharpening stone. Note depression in the upper grindstone shown in Figure 6.5; I was told that this was caused by the repeated sharpening of iron spears, knives, and needles. Smoothed and polished sharpening stones (more typically similar in form to lower grindstones) are found throughout sites in the forest used for meat feasting, occasionally large boulders will exhibit surface areas that have been used for decades at least to sharpen knives used for butchering livestock. It is unknown when Samburu acquired or developed the knowledge to smelt and forge iron (see Larick 1986b), but one might presume that the appearance of sharpening stones at Samburu archaeological sites would in fact correlate to that period. The history of lithic production and use in Samburu society has to my knowledge not been studied.

Rougher stones were also used to smooth and shape wooden containers and walking sticks; today punctured lids from Kiwi-brand shoe polish tins serve as sandpaper when needed. Noltualan Lenchalote, an elder Samburu woman from the highlands, informed me that people in the lowlands, who used to move around more frequently and who constructed much more temporary houses from bent branches and animal skin mats, would carry upper grindstones from place to place in order to pound in house poles. These stones, called *lkintot*, would get smooth like regular grindstones. One could tell

that the stone had been used as an lkintot. Everyone, she said, used to have one. Flat grindstones were carried as well.

Today, grindstones are used almost exclusively for grinding tobacco leaves into snuff. The history of tobacco use amongst pastoralist groups in eastern Africa is long and complex. As early as the 19th century Samburu were getting tobacco in trade with the Dasanetch around Lake Turkana, who themselves obtained tobacco from Konso farmers in southern Ethiopia (see Sobania 1991). Elders in Samburu today mention getting tobacco from Meru and other agricultural neighbors; there is no indication that Samburu ever cultivated tobacco themselves. It was my mistake, however, to believe initially that tobacco and the grindstones used to process it were simply legacies of the British colonial occupations.

As discussed in Chapter 2, pastoralists in eastern Africa have a long history of exchange with neighboring agricultural communities. Maize or other grains are often sought by herders as supplemental foods, particularly during times of food stress. According to Holtzman (2009), many older Samburu remember a transition from the consumption of hand-ground indigenous grains to industrially-milled maize reminiscent of ash or dust. It seems most likely that Samburu got those grains, typically maize, already ground from their agricultural neighbors. No one I spoke to in Samburu ever mentioned having grindstones on which they processed grains. Of course, grindstones needed to process maize and other grains would be significantly larger and heavier than those used for purposes such as grinding small quantities of tobacco, herbal medicines, ochre, or clay.

Grinding plants, ochre, clay, and tobacco can be accomplished, it must be noted, without in fact using tools made from stone. For example, Samburu used wooden bowls for grinding as well. It seems that this was done on an ad-hoc basis when stone grinders were not locally available. Wooden bowls were generally used for serving food, and today are considered treasured possessions. Grinding would presumably be less effective in wooden vessels and would wear them out more quickly. Evans-Pritchard (1940) noted the lack of suitable stones in Nuerland for grinding sorghum; the Nuer instead use wooden upper grinders on a lower grinder made from “baked marsh mud mixed with finely ground potsherds” (86). It is unclear if these grog-tempered slabs would be well-fired enough to survive in archaeological contexts. It is important to note that if not, a hypothetical absence of stone grinders at Nuer sites would not prove that the Nuer were subsisting on the fruits of their pastoral labors alone. Agricultural production may well be invisible from a material standpoint; analysis of macrobotanical remains would be useful in painting a more complete picture of Nuer food production.

6.8.1 Mobility

Ethnoarchaeological examples from around the globe speak to a wide range of strategies that can be employed by mobile societies to reconcile their needs for grinding technologies with their needs to move. Kuznar (1995) notes that Andean goat herders cache grindstones at occupation sites with the expectation that they will return to those campsites year after year. Other societies adjust their patterns of mobility to better acquire grindstones along the way: Harlan (1989), for example, notes that Tuareg in the northern Sahara frequently return to sites where Neolithic grinding tools can be collected from surface exposures (see Nicolaisen 1963). Roux’s (1985) work in Mauritania

challenges the underlying assumption behind this whole question: She shows that nomadic populations can and do transport even large and heavy grindstones used for processing grains. These grindstones are carried, in her study area, on the backs of camels. She does note, however, that camels cannot carry more than one or two of those stones at a time. This makes it impossible for semi-nomadic populations to carry reserve grindstones with them, for use if their main grindstones break. Her work also makes it clear that groups might have different strategies for dealing with different types of grindstones: Small grindstones owned by semi-nomadic populations for processing vegetables, perfumes, and tobacco would be carried on camels as well, while larger grindstones used for cracking date nuts, as well as large grindstones repurposed for other household uses, would be left behind at permanent houses occupied for several months of the year. In Samburu, relatively small, portable grindstones are simply packed up on donkeys and carried along. For several reasons grindstones in Samburu are rarely left behind when moving a house. Good stones, appropriate in size and shape for grinding, are said to be difficult to find. People would also steal grindstones from one another, I was told, if grindstones were left at old homesteads.

The issue is still, I think, whether or not ancient patterns of land use and subsistence can be inferred from the patterning of grindstones as seen in the archaeological record (see David 1998; Nelson and Lippmeier 1993; Schlanger 1991). Although numerous studies have examined population *densities* as they relate to grindstone use, few studies have systematically considered population *mobility* as a factor in this regard. Roux (1985) argues that in Tichitt, Mauritania it would be impossible to deduce the degree to which a population was sedentary or not by examining only the

number of grindstones found on a site. Other factors would have to be taken into account, including the types of grindstones left behind. She warns that while it may be possible to determine if a site was occupied by a completely sedentary group (by, for example, the presence of numerous grain grindstones that have been repurposed for other activities), a site with few grindstones would *not* indicate, necessarily, occupation by a nomadic group. Simms (1983) takes a diachronic look at grindstone use by mobile hunter/gatherer populations in the Great Basin. He notes that because mobile populations often reuse artifacts this has a tendency to bias the archaeological record. Later contexts, for example, might have greater numbers of grindstones even if mobile populations throughout time followed similar patterns of grindstone use. In Samburu, it seems unlikely that very many grindstones would end up in the archaeological record at all. Grindstones were typically carried from house to house as a woman moved her hearth and home, and one grindstone might have lasted her entire lifetime. Relatively high levels of residential mobility coupled with careful curation would thus limit the accumulation of grindstones at any one occupation site. However, when the pastoralist landscape is viewed as a palimpsest of temporary but often spatially overlapping settlements it seems possible that a few worn-out grindstones would be recovered through archaeological survey. Grindstones used by men were occasionally stored in caves and rockshelters, and those might be more likely to appear in archaeological contexts.

Studies of residential mobility as it relates to spatial patterning of grindstones in the archaeological record would generally benefit from a consideration of grindstone function. What needs, for example, would mobile pastoralists have for grindstones in the first place? Have Samburu ever *needed* to grind large quantities of grain with large,

heavy grindstones while mobilized in search of greener pastures? Most likely not.

Although ethnoarchaeological research such as this can suggest ways in which similar groups in similar circumstances may have utilized grindstones themselves, determining artifact function in the past is perhaps best accomplished by direct analyses of grindstone use-wear and residues.

6.9 Hunter/Gatherer Grindstone Use

In the 1970s, hunter/gatherer “Bushmen” in modern-day Namibia and north-western South Africa were recorded using “grinding-stones for grinding grass seeds, roots, ochre, clay, etc.; smooth, grooved stones for the straightening of arrow reed shafts; grooved sandstone for polishing ostrich eggshell beads; and sharpening stones for bone and metal points” (Rudner 1979:6). Interestingly, Rudner notes, pastoralist “Hottentots” and the pastoralist Nama were using, at the time, the same tools for just the same tasks. In Samburu, I was struck by a similar symmetry in hunter/gatherer and pastoralist grindstone use. Elders from the traditionally hunter/gatherer Loliin community explained to me that their families once had flat lower grindstones, and round upper grindstones, that were carried along whenever they moved. These grindstones were primarily used to prepare herbal medicines, and to pound dry meat with fat to make it soft and edible for children. Pounding animal hides, many Loliin elders said, also made better leather (cf. J. Adams 1988). Samburu utilize small grindstones for these tasks as well. The preparation of veterinary medicines is the only additional, recognizably “pastoralist” purpose for which Samburu herders need grinding tools.

7.1 Household Assemblage Studies

Having looked at several types of household material culture from a functional perspective, I now shift my focus towards describing the assemblages of household goods owned by Samburu women today. Much of the ethnoarchaeological research on household assemblages can be traced back to Turner and Lofgren's (1966) study hypothesizing a link between cooking pot volumes and household sizes in the prehistoric American Southwest. Since the 1960s, ethnoarchaeologists have examined a number of additional factors that might influence the types, numbers, and sizes of pots owned by individual households. B. Nelson (1981:109-111), for example, argues that the cooking pot assemblage in any given household might be shaped by the following factors: The age-grade composition of the household, the social composition of the food-consuming group (food might be prepared for individuals outside the household, as during ritual occasions), food preparation techniques employed by the household, and the schedule of meal preparation (food for a day's consumption might be prepared all at once, or in smaller batches throughout the day). Nelson also notes that households can accommodate needs for cooking pots in multiple ways, such as by using either small numbers of big pots or greater numbers of small pots. The types of foods being cooked presumably matter as well.

Numerous ethnoarchaeological case studies (e.g., P. Arnold 1988; Arthur 2009; Beck 2009a; Hildebrand and Hagstrum 1999; Lane 2006; B. Nelson 1981) have further

examined factors behind the structure of household container assemblages, including cooking pots, in societies throughout the world. However, these studies are, almost without exception, about the household goods owned by individuals and families living sedentary agricultural lives. Very few studies have devoted efforts to systematically recording the household possessions of owned by members of mobile pastoralist groups. For this reason, archaeologists often fall back on assumptions about pastoralist material culture that are framed in reference to the material culture of settled farmers. As discussed in the Introduction, it is widely assumed that highly mobile groups own relatively fewer containers than more sedentary populations, and that these items are lighter in weight and easier to transport (see Cribb 1991; A. Smith 1992). It is also widely assumed that cattle pastoralists (as opposed to farmers or hunter/gatherers) must need a wide array of containers for milk.

Data collected through surveys in Samburu in fact suggest that these assumptions are overly simplistic and that these relationships may not always be as straightforward as one might assume. This chapter will have two main objectives. The first will be to provide quantitative descriptions of household assemblages in different locales throughout the three broader Samburu districts, focusing on cooking pots, the type of container most likely to be preserved in archaeological contexts. The second objective will be to explore reasons behind possible inter-local variability in assemblages among those same households. Information collected on household demographics, livestock holdings, income, and various other aspects of Samburu life will then be used to address the complex interplays between material culture and functional needs, cultural values, and limitations imposed by a relatively mobile lifestyle.

7.1.1 Definitions

There are innumerable ways one could define a Samburu “household.” For the purposes of this study, I identify a household as incorporating all of the people who eat around one hearth. This typically includes a married (or widowed) woman, her husband (who, if polygamous, may thus be considered the head of multiple “households”), the woman’s unmarried children, and any other dependents. Following this definition, Samburu households can also be conceptualized in a material way. Most of the containers I inquire about belong to the woman and are kept within her physical home, although she may include milk containers belonging to her husband, for example, if they are stored inside her house. The “household assemblages” described in this chapter thus refer to all of the containers that are kept within a woman’s house, around the hearth that always serves as the central locus of Samburu domestic life.

7.2 Project Location

The analyses in this chapter will be presented primarily in terms of location. Samburu North, Samburu Central, and Samburu East Districts collectively cover approximately 20,000 square kilometers. I selected three relatively small politically-defined areas within this vast area for survey, Siambu (Porro Location) in the northwestern highlands of the Lorroki Plateau, Mbaringon Group Ranch on the central

Figure 7.1 Map showing surveyed areas

plains of the Lorroki Plateau, and locations surrounding the town center of Latakweny in the lowlands. Samburu everywhere maintain a common identity centered on the ownership and management of livestock, but there are important regional differences in mobility and subsistence practices, which I will discuss. These three areas cannot be said to represent Samburu in its entirety (ecologically, economically, or culturally); indeed the northern part of Samburu North District near Mt. Ng'iro and Lake Turkana was almost wholly left out of this study due to security concerns, and locales in and around much of the Matthews Range were left unstudied as well. It is also important to note that the three areas selected are not by any means geographically or culturally bounded; grazing often takes people outside of their home areas, and women often move long distances via patrilocal patterns of marriage. Nevertheless, sampling from these three areas allows me to paint a fairly holistic picture of current life throughout Samburu.

7.3 Methods

The following section will detail specific research methodologies used to collect the data found in this chapter.

7.3.1 Sampling Strategies

Thirty households were randomly selected from each of the three surveyed areas. The decision to survey thirty households in each area was based primarily upon fieldwork logistics: I was under severe time constraints and travel throughout the districts was limited due to security concerns, gasoline costs, and number of other factors. Thirty households per area was a realistically feasible number in terms of the time and resources

available. In total these ninety households make for a robust statistical sample, although additional research will be needed before I can begin to compare different households *within* each location. In addition, I surveyed every household (n=26) from the Loliin community of the Mbaringon Group Ranch. This provided a total sample of 116 households. Results from the Loliin surveys will be presented as a separate case study in Section 7.8 of this chapter.

Random samples were obtained using different strategies in different regions. For her doctoral research in 2000-2001, Carolyn Lesorogol randomly selected samples of 100 households in both Siambu and Mbaringon from registries of families belonging to each group ranch (see Lesorogol 2002, 2008). Many of these 200 households continue to be surveyed by Lesorogol for ongoing research projects concerning land tenure, herd management, and decision-making. I elected to generate a random sub-sample of 30 households in each area from lists of the original 100-household samples provided to me by Professor Lesorogol. In Mbaringon, I did decide to survey each of the households recognized as Dorobo separately. This overall sampling strategy was helpful in several respects, most notably that I was assured generally representative samples from Siambu and Mbaringon, even if a few households from the registry had changed or moved in the last several years. I was also saved a tremendous amount of time. Finally, during my first few weeks in Samburu I assisted with the collection of demographic and economic data on households for Professor Lesorogol's current research in Siambu. This effort provided me with a structured and comfortable introduction to life in the highlands, as well as to the logistics and challenges of survey-based research. I was able to begin my own household surveys with women I had already met, in places that were already familiar.

Many thanks are due to Professor Lesorogol for providing me with the opportunity to aid in her project, and for sharing data and insights with me whenever questions arose.

In the lowlands, obtaining a random sample was more difficult. The area near Latakweny was chosen due to the fact that people from here and surrounding areas seemed to maintain higher degrees of residential mobility than people anywhere else in Samburu. Holtzman (2003:143) does point out that in the lowlands wealth divisions may be less obvious than in other parts of the district. There are wealthy and independent herders out on the plains, and then a class of families living in poverty in and near towns. For this survey I avoided sampling families living in the town center of Latakweny of directly adjacent, and instead focused on surrounding areas where families were still invested in the pastoral system. I recognize, however, that I may have missed some of the wealthiest families farther out on the plains. Given the scope of the project we could not do our own census of every settlement in the area. Instead we hired a well-liked and respected elder to introduce us to thirty households following a basic rundown of our project goals. There were three main clusters of settlements outside of the town center to the south, north, and west. Ten households were chosen from each cluster. No preference was given to women of any age or socioeconomic standing, and we tried to avoid interviewing only first wives, or second wives, and so on. For example, in many cases we had to interview whichever wife happened to be around when we arrived at the boma; if we thus interviewed a first wife in this manner we attempted to interview a second wife for the next survey. Our guide was wholly unaware of which women in the community owned clay pots or other household items of interest, so I am confident that our sampling procedure was unbiased in this regard. In several instances women were excluded from

the survey due to unrelated and sensitive circumstances. One woman's son, for example, had recently been killed by an elephant and we did not want to disturb her with numerous questions about her family. Notwithstanding the obvious problems with and limitations of this methodology I am confident that we obtained a fairly representative sample of Samburu households in the area.

7.3.2 *Survey Structure*

My surveys were designed using Lesorogol's work as a general model. It took several iterations for me to come up with a version I was happy with (which can be found in Appendix II), and I did have to re-visit several households in the highlands after modifying the contents of the survey. I began with several lines of inquiry about the demographic and economic status of each respondent's family. In addition, I asked a number of questions that were simply designed to improve my own understanding of Samburu culture and life in each region. I asked about common patterns of mobility in the past, for example, and the types of architecture common to various times and places. A series of questions about ethnobotanical knowledge was also added, and quantitative methods in some cases had to be modified as problems presented themselves. With my research assistant translating, I asked questions about the following variables:

7.3.3 Household demographics

Respondents were first asked if their husbands' had other wives, and if those wives maintained "households" in the same settlement. These women were then asked their ages. Most Samburu do not know their exact age in years, but are able to provide a rough estimate by either counting back successive age grades or by referencing an

important event such as Kenya's 1963 independence. For this study all reported ages have been rounded down to the nearest ten years. Women were then asked about their children currently living at home. Counts were made of how many children at home fell into each age group (0-5, 6-10, 11-15, 15+). Unrelated but dependent children were tallied separately, along with dependent adults (elderly family members, or other adults in need of support). All children living at home were tallied along with other dependent children and adults to get a "current household size." I did not ask about either married daughters who had moved away from home, or Imurran who were not currently living at home. To ask a Samburu woman how many total children she has had is somewhat culturally insensitive, and we worried that doing so would offend and/or produce misleading answers.

7.3.4 Mobility

To quantify the relative residential mobility of Samburu households I asked respondents how many years they had been living in their current house, how many years they had lived in the house before that, and again how many years they had lived in the house before that. Responses were averaged to derive a "mobility quotient." It should be emphasized that these moves, in the vast majority of cases, were not undertaken as part of seasonal or circumstantial migrations towards better pasture. Most moves were, instead, the result of families deciding to construct a newer house very close (< 1km) to their old house. Ecological considerations (such as the accumulation of dung, increase in fly and pest populations, etc.) certainly still factor into decisions made about when and why to switch houses. A wealth of social, economic, and political variables also play a strong role now as they have in the past. For each locality surveyed I asked a number of elderly

women about common patterns of mobility in the area during past times when houses were moved along with the cattle, for years with normal or abundant rainfall and for difficult years with too little rain.

7.3.5 Livestock

Livestock holdings were affected greatly by the drought that broke just as this study was ending. At the time the surveys were administered many families had lost every animal they owned, and most others lost huge percentages of their total stock holdings. For the purposes of this analysis, then, I have to assume that the numbers of livestock left per household still accurately reflect each household's relative wealth. Many calculations will be performed in terms of Total (or Tropical) Livestock Units, which researchers typically based on weight or milk yields. Methods to calculate TLU vary but for this study I will use the formula 1 TLU= 1 cow, 0.8 camel, or 10 sheep/goats (after Fratkin and Roth 1990). Samburu are generally reluctant to declare the total numbers of cattle they own, so overall counts were obtained by asking people to enumerate first their calves, then heifers, then bulls, and so on.

Livestock are often taken to represent "wealth" in most if not all African pastoralist groups. A lengthy and nuanced treatment of this topic will not happen here, but I should acknowledge that Dahl and Hjort (1976) rightly caution, for various reasons, against using livestock estimates to measure the "wealth" of individual households. Two short points, however, should be made in regards to this issue. First, although social status and prestige are in many ways tied to numbers of livestock owned, the main motivation for maintaining large herds of animals is to buffer against major losses such as those that happened during this recent drought. Second, households with greater numbers

of livestock can and do make more money from livestock sales at market than do households with fewer animals. Given the drought I was unable to obtain accurate information about typical household incomes generated from livestock sales, and for this reason I have limited confidence in my overall evaluations of household economics. Livestock holdings are the closest available proxy to household “wealth” I could come up with.

7.3.6 Agriculture

Although most Samburu women surveyed rely primarily on livestock to take care of their families, a sizeable number now also grow maize, beans, and/or other fruits and vegetables. Respondents were asked the types of crops grown and the acreage allotted for each. Each woman was also asked how many years she had been growing those crops, the amount of her most recent harvest, and the percentage of each crop sold at market versus eaten at home. These data are used here in this dissertation primarily to create a more detailed picture of everyday life in each of the localities surveyed.

7.3.7 Income

Income in this case refers to cash that people earn from sources other than livestock sales. This might include small amounts of change made from selling charcoal, vegetables, or running a small shop, or it could refer to money sent to the family by a son or husband working as a wage laborer elsewhere.

7.3.8 Containers

Finally, of course, I asked about household containers. I first asked women to list the numbers of sufurias they had, by size. I then asked them to count how many cups,

bowls, and plates they owned as well. Other miscellaneous kitchen containers, such as thermoses, tea kettles, and frying pans, were tallied, along with all of the different types of wooden milk containers and gourds belonging to the woman being interviewed. They occasionally named milk containers belonging to their husbands, but I suspect that some vessels were intentionally left off of my lists. I began the surveys by asking to see the milk containers so that I could measure them individually. This proved to be a bad idea. Women were extremely reluctant to personally show me containers that had milk in them, and so I determined that the most accurate inventory could be gotten only by asking women to simply list for me those containers that they had in their houses. My plans to measure all sufurias, plates, cups, and bowls likewise proved unrealistic. Typical sizes and shapes for these types of containers are noted when possible. In any case, after wooden and gourd containers I asked women about heavy metallic pots, and finally clay pots. An entire series of questions about clay pots concluded the survey.

7.4 Results

The following sections will examine Samburu containers by types (as broadly classified by function: cooking vessels, serving vessels, and storage vessels), across the three different survey locations. This research was conducted with the recognition in mind that pastoralist needs for containers will vary with local ecologies and economic strategies, and that specific cultural and individual histories will structure what people might have in their houses at any given time. The numbers of cooking pots that people own, for example, may relate most closely to degrees of mobility while the number of milk containers people own may relate most closely to livestock holdings. Covariance

between each of these variables will be taken into account. Quantitative data alone speak little to the complexities of Samburu domestic life and material culture; for this reason ethnographic data gathered from intensive interviewing and participant observation will be used to contextualize the data presented here.

Before discussing containers, however, it may be useful to present some baseline data about Samburu settlement patterns and household economic strategies. An understanding of household container assemblages, I will argue, must take into account the following regional differences, touched on in previous chapters:

- a) Samburu in the semi-arid **lowlands** have generally maintained the greatest commitment to the ideal Samburu way of life: residentially mobile and entirely pastoral.
- b) Samburu on the better-watered **Lorroki Plateau** live on communally-owned group ranches and have settled somewhat. 67% of households surveyed practice garden-plot (typically <1 acre) cultivation of maize and beans.
- c) Samburu of Siambu, in Porro Location on the **highlands** of the Lorroki Plateau, have settled in more permanent homes on privately-owned plots. Small-scale farming is most important here. 73% of households grow maize, beans, and/or vegetables in plots that average slightly more than 1.5 acres in size.

Table 7.1 shows quantitative data obtained on average mobility, livestock holdings, and household income in each of these three locations. Note that Samburu in the lowlands, although more residentially mobile, have somewhat fewer livestock per household on average than do Samburu in the highlands or on the Lorroki Plateau, although this pattern might be heavily skewed by losses incurred during the drought. Data obtained for this

Table 7.1 Average mobility, livestock, and income by location (n=30 households for each)

Location	Mobility Quotient (higher # = less residentially mobile)		Livestock (Total Livestock Units, TLU)		Income (Kenyan shillings/Yr., ~80Ksh=1USD)	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Lowlands	2.7	2.06	4.90	4.24	2571.4	9263.3
Lorroki Plateau	6.2	2.11	7.65	6.58	22137.9	22146.9
Highlands	8.1	5.18	8.54	12.01	16090.2	23985.6

study show no significant statistical correlation between location and average Total Livestock Units (TLU) per household (one-way anova, $F_{2, 86}=1.55$, $P<0.2180$). It is nevertheless safe to say that in the lowlands people still rely more heavily upon their animals to provide for their daily subsistence. In other areas there are simply greater ranges of available economic opportunities. Agriculture is the obvious example, which is impossible without irrigation in the lowlands but which can serve as a buffer against stock losses for families in the highlands and elsewhere. The table above does hint to a greater degree of inequality within the highland community when it comes to livestock holdings, but again a proper examination of economic disparity would be difficult given the limited scope of these data.

Income is another complicated variable that does co-vary with TLU per household, partly because disposable income is frequently used to bolster the size and health of one's herds. First, though, there is no statistically significant difference in average annual income between households in different locations. However, if the three outlying households (two in the highlands, one on the Lorroki Plateau) with annual incomes over 100,000/- are excluded, it becomes clear that households in the lowlands have much lower average incomes than those in either the highlands or the Lorroki Plateau (one-way anova, $F_{2, 82}=7.47$, $P<.0011$). There is also much greater variability in household income

within the highland and Lorroki Plateau communities than there is within the lowland community. Again this points to the highly limited options that are currently available to Samburu living in and around Latakweny. Causes and effects of wealth differentiation are interesting and complex topics, and their relationships to household container assemblages deserve consideration. Other variables, including household demographics, will also be discussed in later sections.

7.5 Cooking Vessels

I did not expect any particularly revelatory results in terms of cooking vessels, as initial interviews with Samburu women suggested that totals should be roughly the same across all households, everywhere in the three districts. Before the introduction of metal pots, including now-ubiquitous aluminum *sufurias*, the types and numbers of clay cooking pots that a Samburu woman needed to own were fairly straightforward. All cooking pots are the same in form except for size. Every family needed a big pot for cooking bone soups after an animal was slaughtered (see Figure 7.2³⁵). If a woman was cooking for fewer people, such as when she had just been married, a medium-sized pot would be sufficient. If she had warrior-aged sons, on the other hand, she might have wanted a really big pot. A small pot, used to boil milk and soup for small children, should have then completed the set.

³⁵ To avoid confusion, I will point out that this pot is not included in the catalog. Although not obvious from this picture, the entire back half had been broken. The pot had to be retrieved from where it had been discarded along a thorn fence.

Figure 7.2 Large pot, *moti sapok*, from the lowlands

Now that tea and maize porridge have become major staples in Samburu diets, the ideal cooking pot assemblage in most places is slightly different but no less minimalist. A woman needs a medium-sized pot for cooking tea, maize, and occasional soups, or a big pot if cooking for a large family. A small pot is needed for cooking vegetables such as kale or cabbage, and for boiling smaller amounts of tea. Nowadays metal pots, most often sufurias, are used for all of the everyday cooking. Clay pots are reserved for use during ceremonies or for

special occasions. Many of the younger Samburu women interviewed for this project had never owned a clay pot; even older Samburu rarely remembered having more than one pot, and those pots were typically used only for special events.

7.5.1 Survey Results

For the purposes of this study, when I discuss “cooking vessels” as a category I am referring to both clay and metal pots. Summary statistics for cooking vessels are presented in Table 7.2; these data are compiled from the ninety household surveys I conducted in the lowlands, on the Lorroki Plateau, and in the highlands. Results from the *Loliin* (former hunter/gatherer) surveys will be presented in Section 7.8.

Table 7.2 Summary statistics for cooking vessels

Container Type	Typical Volume Range (l) ¹	Median volume (l) ¹	Total # Recorded	# per household: Mean	# per household: Median	# per household: Range
Aluminum Sufurias						
<i>Small</i>	0.9-1.8	1.2	122	1.36	1	0-3
<i>Medium</i>	1.5-3.6	3	46	0.51	0	0-5
<i>Large</i>	2.5-20	5.5	113	1.26	1	0-4
(Heavy) Metal Pots	5	5	40	0.44	0	0-1
Relief-food Cans	4	4	2	0.02	0	0-1
Clay Pots						
<i>Small</i>			4	0.04	0	0-1
<i>Large</i>			16	0.12	0	0-1
COOKING VESSEL TOTALS			343	3.81	4	1-8

¹ Volume data for metal pots is from pilot questionnaires only (7 households in Siambu). Volume data for the clay pots I was able to measure are presented in Appendix 1, Table I-1.

When examined in terms of location, cooking vessel totals are, as I suspected they would be, fairly consistent across Samburu despite regional differences in mobility patterns and subsistence economies (Figure 7.3). There is no significant difference between the lowlands and the highlands, although households on the Lorroki Plateau did have slightly more cooking vessels on average than elsewhere ($p < .0001$). There was a slightly greater range of variability in the highlands than there was in the lowlands or on the Lorroki Plateau, but overall values were remarkably similar. From highly mobile households in the lowlands to permanently settled households in the highlands, Samburu women typically own approximately four cooking vessels each.

We might expect more mobile households to have fewer cooking pots in total than households that are more settled. I would not assume out of hand that more settled household have radically different functional needs for pots. Mobility is, of course, closely tied with patterns of subsistence. It may have been the case in the past that highly

mobile Samburu would need pots only occasionally, to cook meat or blood or grain when milk was not available or during ceremonies. More settled Samburu with fewer livestock may have needed pots on a more regular basis to cook maize and other vegetables either grown at home or obtained elsewhere. All else being equal, however, I would hypothesize that people would only tend to accumulate slightly greater numbers of cooking vessels if mobility is not a constraint. It may be convenient to have one extra pot to prepare tea in, for example, if your only other pot is full of *loshorro*, a maize meal mush. Otherwise extra cooking pots would only clutter one's kitchen.

Figure 7.3 Cooking vessels per household, by location

In this sample, there is a statistically significant relationship between mobility and total numbers of cooking vessels owned per household ($r^2=0.11$, $p<0.0019$). Highly mobile households have fewer numbers of cooking vessels on average than do less mobile households, but again mobility as an independent factor explains fairly little. In terms of other variables, wealth (as measured in Total Livestock Units) is not

significantly related to total numbers of cooking vessels per household, and total income, when one outlying household is excluded, only has a very slight positive relationship to total numbers of cooking vessels owned per household ($r^2=0.05$, $p<0.03$).

Do sizes of pots matter, in terms of mobility? The assumption is generally that highly mobile peoples would not only travel with fewer objects, but that those objects would also be suitable for frequent transport (i.e., they would be relatively small, light in weight, and less cumbersome than they might be otherwise). Wooden and gourd milk containers are relatively small and lightweight, and the same can be said for most serving vessels. Cooking pots, on the other hand, would presumably pose a larger problem to mobile groups in terms of transport. Figure 7.4 shows the overall distribution of cooking vessels per household by reported size. These data include *sufurias*, heavier metal pots, and clay pots; two steel cans used as cooking pots have been excluded.

These data are as expected from ethnographic inquiry: Women typically own one small pot, and one or two large pots. The fact that these data show so few medium-sized pots in Samburu households is very much a consequence of survey methodology. We asked people to classify their cooking vessels by size, without any other guidelines and without measuring the vessels themselves. If women had two *sufurias*, for example, they were most likely to classify them as “one small *sufuria*, and one big *sufuria*” no matter what exact size they were. The same can be said for clay pots, which were generally either categorized as “*lkunate*” (small pot) or “*moti sapok*” (big pot). Heavier metal pots made from steel or cast iron were all considered “large.”

Figure 7.4 Overall distribution of cooking vessels by size

Relative proportions of small, medium, and large cooking vessels per household are also consistent across locations. The relatively mobile households of the lowlands do *not* report a greater proportion of small vessels to large vessels than do households elsewhere. Figure 7.5 shows, for example, that the relatively mobile households of the lowlands do not report a greater proportion of small vessels to large vessels than do the more settled households of the Lorroki Plateau or the highlands. Conversely, more settled households do not report any greater accumulation of larger vessels as might be expected. Relative proportions everywhere instead seem to mirror a common ideal. As Samburu women themselves say, each household needs a small pot, a big pot, and maybe an even bigger pot if a woman has warrior sons. Indeed if asked about the typical numbers and sizes of clay pots that Samburu women owned in the (proverbial) past, the standard answer is always the same. A small pot, a big pot, and maybe an even bigger pot if a

woman had warrior sons. No mention is ever made of mobility; it is taken for granted that if a woman needed a pot she would simply carry it with her.

Figure 7.5 Proportions of small, medium, and large cooking vessels

One could make an argument that this cultural standard reflects simple functional needs. A household would be well-enough furnished if it had a smaller pot for tea, a pot sufficiently big to make bone soup for the family, and a bigger pot if warrior sons were to borrow it for meat feasting. Indeed when asked to describe a small clay cooking pot, Mpashie Lesorogol very thoughtfully explained that it was the right size for a younger Samburu woman who has three children and a husband. A bigger pot is for a woman who has a bigger family. Her daughter-in-law, for example, feeds six children and a husband. That bigger pot might be big enough to hold soup for the children, anyway, but maybe not enough for everyone including adults. Household *sizes*, to some degree, dictate how big their cooking pots must be within the general two-pot ideal. In this sample, however, there is no statistically significant relationship between household size and numbers of cooking vessels in any of these three size categories (bivariate fit tests, small $p < 0.2918$,

medium $p < 0.4305$, large $p < 0.06592$). Neither is there any significant relationship between total numbers of cooking vessels and numbers of people in each household. During interviews, no one ever did indicate that bigger families need greater *numbers* of cooking pots.

Not all large cooking vessels are created equal, and this fact warrants a closer look to determine if it may be the case that more mobile households simply have fewer heavier or bulkier large pots. In fact, Figure 7.6 shows just the opposite. Over fifty percent of the large cooking vessels owned by women in the lowlands are of the heavy variety, either metal or clay pots. Fewer than twenty percent of the large cooking pots owned by households in the highlands can say the same. Results for households on the Lorroki Plateau fall in between. In other words, women in the lowlands have a far lower proportion of lightweight large sufurias than do women anywhere else. Women in the highlands have very few metal pots or clay pots, overwhelmingly preferring sufurias instead.

Figure 7.6 Large cooking vessels: Proportions of metal pots, clay pots, and sufurias

Although these results may seem counter-intuitive, there are a number of factors that likely play into these patterns. There is a simple reason that explains why most of the clay pots found during household surveying were seen in the lowlands. In the nearby Ndoto Mountains a woman had been making pots no less than six years before, although I was recently told that this potter no longer makes pots and may in fact no longer be living. She had come down into Latakweny town to sell her wares, and numerous women had bought pots from her for their sons' circumcision ceremonies. These were by and large the pots we were shown to me during the course of my household surveying (see Appendix I, Figures I-AA through I-CC). Nowhere else in Samburu have there been active potters for decades. There are always clay pots for sale in Maralal, but these are made by Kikuyu potters from near Nakuru and are generally unpopular given their dissimilarities to Samburu pots in (among other things) form, decoration, and color.

One important consideration is the availability of mass-produced containers to families in each location. In each of the survey areas there are small general shops selling basic foodstuffs, beads, and limited selections of miscellaneous household goods. Otherwise, Samburu from the Mbaringon Group Ranch on the Lorroki Plateau and Siambu (Porro Location) in the highlands have better access to a wider range of commercial products. Both are approximately equidistant from Maralal; it takes roughly one hour by public or hired transport to get there. As the administrative center for Samburu and the largest town in the region, Maralal is home to a number of shops selling a wide range of kitchen goods from Kikuyu cooking pots to tea sets from China. There are fewer options in the lowlands, where a lengthy trip to Wamba might be prohibitively expensive and time-consuming.

The relatively large quantity of heavier *metal* pots in the lowlands, then, deserves some speculation. These pots, along with clay pots, are significantly more expensive than sufurias, and it may have stood to reason that only wealthier households would have had access. This is not the case; even women living in extreme poverty occasionally reported owning heavy pots. These surveys were conducted during a particularly devastating period of drought and economic loss, however, and it may be that some now-destitute families previously had more than sufficient resources to buy such goods. Many of the heavier metal pots, particularly the cast-iron pots, were likely bought some time ago. They have seemingly infinite use-lives, while sufurias will only last several years if heavily cooked with on a regular basis. Heavier metal pots are sold in Maralal and other larger town centers, but I never personally saw anything of that sort for sale in Latakweny (or anywhere remotely nearby). Women do make rare visits to Wamba, far across the Seiya River to the south, to visit to the Catholic hospital and for other personal reasons, and they or other relatives may have picked up pots from the market. This is certainly how many if not most of the clay pots in areas across the lowlands came to be owned. Still, transport can be expensive and time-consuming.

Ethnographic data suggest that Samburu in the lowlands value heavier metal pots for their close physical resemblance to clay pots, despite difficulties that might arise in both procuring and transporting them. Cast iron cooking pots are routinely described by Samburu women as looking just like proper clay pots. They are black, they are round, they are heavy, and perhaps most importantly they usually have two handles (albeit positioned in the wrong direction). The newer steel pots are shaped differently and are somewhat lighter, but they are likewise durable and suitable for slow-cooking foods such

as soups. Functionally, these heavier metal pots are more or less equivalent to Samburu clay pots. Sufurias are not.

In the highlands, aluminum sufurias have almost entirely replaced pots made from clay. At least one of the few cooking pots left is now being shared among members of the community as a vessel for preparing medicines. Was it not for the deep connection in Samburu cultural practice between clay pots and the preparation of botanical medicines I may have found no pots in Siambu at all. Nearly all cooking is now done in lightweight aluminum sufurias, seen as suitable for foods made from maize meal.

7.5.2 Discussion

In interview after interview I was told that sufurias were bad for cooking meat, bad for cooking soup, and generally just bad for everything. These criticisms did not, I should point out, come from the old men who liked to wax nostalgic about how delicious meat used to be when cooked in clay pots. Women, rather, would complain that foods boil too rapidly in sufurias and can scorch on the bottom, water evaporates at much too high a rate, and a metallic taste supposedly lingers. Sufurias are suitable for the quick preparation of maize meal and tea, but for the cooked foods of a “traditional” Samburu diet (i.e. meat and bone soups, and blood) they absolutely are not. Sufurias thus exemplify the new and unfortunate Samburu condition of being dependent on maize meal above everything else. This is the reality of life for most families now in the highlands and a large number on the Lorroki Plateau. On the Lorroki Plateau, however, women are hanging on to old cooking pots while accumulating sufurias for maize. In the lowlands there is a stronger resistance (bred by ecological necessity) to adopting a more agricultural lifestyle. The preponderance of heavier metal and clay cooking vessels in the

lowlands reflects, on both practical and symbolic levels, an enduring commitment to a way of life still centered on livestock production.

As communities begin to settle more permanently and adopt various forms of agricultural food production, archaeological expectations generally hold that these communities would begin to accumulate both greater quantities of pottery and a greater range of pot types (see Chapter 3). This would be unlikely in Samburu, for purely cultural reasons. Among Samburu there is a very real aversion to the ownership of *any number* of clay pots in the first place. Pots hate cattle. Pots eat cattle. Accumulating pottery would implicitly sanction the killing of cows. The consumption of meat is antithetical to the ideal pastoralist diet centered on the consumption of milk, and so the sacrifice of an animal is done only in the direst of circumstances. Outside of ceremonial contexts, pots are only utilized when an animal has to be slaughtered and boiled because there is no other food. Even though pots “kill cattle,” therefore, there is an acceptance of the fact that without those pots Samburu could not survive. People thus have just as many cooking pots as they need to survive. Or, as some might argue, people have just as many cooking pots as they *believe* they need to survive.

My data show no trend towards the accumulation of clay pots or heavier metal cooking vessels in either more sedentary or more agricultural settings. Samburu in many areas have abandoned the use of clay pots in part because they no longer live their lives as mobile herders. The vessels many Samburu need in their new lives as sedentary farmers are in fact more limited than one might expect. Large assemblages of cooking pots in a wide variety of forms are not among them. Comparisons of pastoralist versus agriculturalist material culture was mentioned briefly in Chapter 4; suffice it to say that

there is no *a priori* reason why a settled agricultural group would need more cooking pots than more mobile, pastoral neighbors. The following section will detail the needs that Samburu across my three study areas have for other types of containers, including storage vessels and the plates, bowls, and cups used for serving food and drink.

7.6 Serving Vessels

Serving vessels, as presented in Chapter 4, are here identified as any container that is used to serve either food or liquid. Food and drink are consumed from these “dishes,” which include cups, bowls, and plates, as well. Table 7.3 presents summary statistics for serving vessels in Samburu households. Keep in mind that the lids of many milk containers can also be used as cups for drinking milk, but these lids are not counted

Table 7.3 Summary statistics for serving vessels

Container Type	Total # Recorded	# per household: Mean	Median	Range
Enamel Cups				
<i>Small</i>	27	0.30	0	0-5
<i>Medium</i>	400	4.44	4	0-24
<i>Large</i>	113	1.26	1	0-5
Ceramic Mug	8	0.09	0	0-6
Plastic Cup	2	0.02	0	0-1
Drinking Glass	4	0.04	0	0-2
Enamel Plates				
<i>Small</i>	112	1.24	0	0-10
<i>Medium</i>	287	3.19	2	0-24
<i>Large</i>	61	0.68	0	0-10
Enamel Bowls	123	1.37	1	0-18
Wooden Bowl	3	0.03	0	0-1
Kasuku Small	54	0.60	0	0-4
Kasuku Big	7	0.08	0	0-2
Enamel Tray	1	0.01	0	0-1
SERVING VESSEL TOTALS	1202	13.36	11	2-53

separately here. A median household had a relatively modest collection of other serving vessels: five enameled tea cups (four medium-sized, one large), two enameled plates, and one bowl. Figure 7.7 charts serving vessel totals per household in Samburu. I include this graphic because it illustrates the fact that my sample included three households that might be considered extreme outliers in terms of the many serving vessels they owned. There are some differences in the types and relative quantities of serving vessels owned in each location surveyed. For example, in the lowlands people are more likely to use plastic “Kasuku-brand” shortening containers as bowls, and in the highlands more people have begun to acquire ceramic mugs for tea instead of the most popular enameled tin cups.

Figure 7.7 Serving vessel totals per household, with outlier box plot

When serving vessel totals are examined by location (Figure 7.8), some interesting patterns appear. Note that two of the outlying households mentioned above are in the highlands and one is on the Lorroki Plateau; these households have been excluded from the following analyses. There were significantly fewer serving vessels per household in the lowlands than on the Lorroki Plateau ($p < 0.0001$) or in the highlands ($p < 0.0001$). There was no

statistically significant difference when comparing households on the Lorroki Plateau and in the highlands. Lowland households averaged only 7.5 serving vessels per household, half as many as those both on the Lorroki Plateau (14.4) and in the highlands (14.6).

There is likewise a smaller range of variation in household assemblages in the lowlands as compared to everywhere else.

Figure 7.8 Mean serving vessel totals per household, by location

7.6.1 Discussion

Consider the small number of serving vessels found per household in the lowlands. One might argue that these totals reflect a minimalist adaptation to the relatively mobile lifestyle often necessary to survive as a pastoralist in this region even today. Indeed from a functional perspective, very few serving vessels are needed for the presentation and consumption of “pastoralist” foods. The wooden lids of milk containers are used as cups to drink fresh or fermented milk, and bowls can hold meat and bone soups. The proliferation of metal cups in Samburu is likely tied to the adoption of tea as a

dietary staple, and plates are useful for serving maize porridges, beans, and other such foods. But the generally small, lightweight, and compact nature of serving vessels found in Samburu is not likely to pose serious problems in terms of household mobility. I would suggest that other factors – such as poverty – have limited the numbers of commercially-made containers found in the lowlands. A colorful enameled tin bowl might be both aesthetically nicer and slightly better suited for serving hot soups than an empty plastic shortening container, but very few households surveyed had the expendable income to buy more than was absolutely necessary for them to survive.

It is similarly difficult to pin down the reasons why women on the Lorroki Plateau and in the highlands were more apt

to have larger numbers of cups, plates, bowls, and other serving vessels within their kitchens. Certainly a number of women maintained a minimal set, but perhaps the general trend towards both more permanent and significantly larger houses have made the accumulation of “extra”

Figure 7.9 Serving vessels per household by mobility

goods less of an issue. Figure 7.9 shows the relationship between the number of serving vessels owned per household and mobility. Reduced mobility is correlated with greater numbers of serving vessels ($R^2 = 0.27$, $p < 0.0001$), but causes for this are likely varied. I suspect that this pattern reflects both changing needs for serving vessels: extra enamel

cups make serving tea to family and guests a little bit easier, plates and bowls are necessary to serve maize porridges and other prepared foods. Indeed I think the ongoing cultural shift that Holtzman (2009) describes – from highly socially and spatially segregated ways of eating in the past, to the more recent way in which old and young, men and women, tend to congregate around a central pot full of maize or tea – is reflected in household material culture. Everyone now requires their own individual dish as they sit, with each other, around the hearth.

There is also a case to be made for the fact that women on the Lorroki Plateau and in the highlands might simply be better able to purchase mass-produced serving goods, given greater household incomes and somewhat better access to markets. However, I found no statistically significant relationship between serving vessel totals and livestock holdings or other income, although I am less than fully confident in my “wealth” data due to economic effects of the drought. Mass-produced dishes such as mugs and plates might also be more attractive to many Samburu in upland areas, given these goods’ perceived association with more “modern” ways of life. I would simply emphasize that serving vessels in Samburu, as with all other types of containers, are rarely bought to intentionally signal higher social and/or economic status. There still exists an aversion to the accumulation of material goods as a form of personal or familial aggrandizement, which would be, I think, an egregious form of disrespect. To buy a new set of ceramic mugs is to do something nice for one’s family, for one’s guests, and to improve in some small way one’s standard of living.

7.7 Other Kitchen Goods

A number of other kitchen goods were either difficult or problematic to categorize as cooking, serving, or storage vessels. For the purposes of this project I thus created a separate category for these items, which include tea kettles, Thermoses, and plastic jugs. Summary statistics for “other kitchen goods” can be found in Table 7.4. I will not present a separate chart showing distribution of these items across Samburu, but I will mention that the only kitchen good in this category that was found in the lowlands was the aluminum tea kettle ($n = 10$). These are generally used for storing any extra tea after a sufuria-full has been prepared and served. Twenty-six of thirty households on the Lorroki Plateau had one (or two, at one house), along with fifteen of thirty households in the highlands. Many women on the Lorroki Plateau and in the highlands had also purchased Thermoses for this purpose, and some had acquired cast-iron frying pans and/or multipurpose plastic jugs, often used for milking. My research assistant’s wife was the only women surveyed who had a chapati block or an insulated casserole-like “hot dish” for keeping foods warm.

Table 7.4 Summary statistics for other kitchen goods

Container Type	Total # Recorded	# per household: Mean	Median	Range
Plastic Jug	10	0.11	0	0-2
Tea Kettle	52	0.58	1	0-2
Thermos	28	0.31	0	0-2
Frying Pan	9	0.10	0	0-2
Chapati Block	1	0.01	0	0-1
Insulated Hot Dish	1	0.01	0	0-1
OTHER KITCHEN GOODS TOTALS	101	1.12	1	0-6

7.8 Storage Vessels

I will begin this section by presenting summary statistics for all storage containers listed during household surveys (Table 7.5). There were several types of wooden or gourd storage containers which were described to me during interviews as “Samburu” but were never named in household inventories: *lkidong* (a man’s tobacco container, commonly seen but never listed), *siang’au* (a large milk storage gourd, never seen), *lboliboli* (presumably owned by all married women, but never listed), *lkotumpe* (beer

Table 7.5 Summary statistics for storage containers

Container Category	Container Type	Total #	# per household: Mean	Median	Range
Wooden Milk Containers	<i>Nkilip</i>	223	2.48	2	0-10
	<i>Lkantirr</i>	3	0.03	0	0-1
	<i>Naitu</i>	53	0.59	0	0-3
	<i>Nkoiting</i>	61	0.68	0	0-5
	<i>Seenderi</i>	3	0.03	0	0-1
	<i>Lngoorrooshi</i>	5	0.06	0	0-1
	<i>Nchonkorr</i>	6	0.07	0	0-1
	<i>Nkodoos</i>	3	0.03	0	0-1
	<i>Turkana</i>	4	0.04	0	0-1
	<i>Lkurun</i>	1	0.01	0	0-1
	<i>Mala e nkoriong</i>	2	0.02	0	0-1
WOODEN CONTAINER TOTALS		364	4.04	4	0-14
Gourd Containers	<i>Nkirrau</i>	103	1.14	1	0-4
	<i>Mala Sapok</i>	58	0.64	0	0-5
	<i>Nyatio</i>	3	0.03	0	0-1
	<i>Lboliboli</i>	1	0.01	0	0-1
GOURD CONTAINER TOTALS		165	1.83	1	0-7
Other Storage Containers	<i>Mpasige</i>	3	0.03	0	0-1
	<i>Soror</i>	3	0.03	0	0-1
	<i>Ltam</i>	1	0.01	0	0-1
OTHER STORAGE TOTALS		7	0.08	0	0-1

gourd, seen in other households but not those surveyed), and *nyaanja* (gourd for storing honey, never seen). Storage containers belonging to older men and Imurran are most likely underrepresented in this data set; we simply asked women to list the containers that were part of her household possessions.

Figure 7.10 Relationship between numbers of wooden containers/gourds owned and livestock holdings

Carved wooden containers and gourd containers are the only types of Samburu containers directly associated with milk. Given that 96% of all wooden and gourd containers owned by the Samburu women surveyed for this project were being used for milking and/or milk storage, one

might expect that households with greater numbers of livestock would own greater numbers of storage containers. Figure 7.10 does show a slight trend in this direction, but there is no statistically significant correlation between total livestock units and total numbers of wooden containers and gourds owned per household ($r^2=0.04$, $p=0.0730$). Wealthy men with greater numbers of livestock might have greater numbers of wives, and each wife might have her own small set of milk containers. It is also fairly common for women to collect just enough milk for the members of her immediate family, and then to leave the rest for the calves. For these reasons, milk containers may correlate more closely with numbers of people per household rather than with numbers of livestock.

Also informative might be an examination of average numbers of these containers owned per household in each location (Figure 7.11). The lowlands and the Lorroki Plateau have nearly identical numbers of wooden and gourd containers per household on average, while households in the highlands have slightly fewer. Standard deviations are notably similar across all three locations. This overall pattern reflects, I think, the same changes in Samburu economy and culture that have influenced the numbers and types of cooking and serving vessels reported above. Households in the highlands are moving

Figure 7.11 Wooden milking containers and gourd containers owned per household, by location

away from livestock production in order to focus on farming, and the everyday use of milk containers has become less important from a practical standpoint. It is less important from a cultural perspective as well, given that the use of milk containers along with heavy

cooking pots is closely tied with expressly pastoralist means of production. The only place I witnessed people using metal milking pails was in the highlands.

There are some differences in household wooden milking container and gourd container assemblages between the lowlands and elsewhere. Containers made from bottle gourds are far less common in the lowlands (14% of total containers in this category recorded) than they are on the Lorroki Plateau (45%) or in the highlands (36%). I do not have a definitive explanation for this, although people in the lowlands did tell me that it was simply too dry there for gourds to grow well. It may also reflect, as discussed before, a lingering cultural reluctance to use gourds rather than wooden containers for milking. In terms of other storage vessels, *mpasige* and *soror*, both vessels used for milking camels, and the *ltam* for honey, were only found in the lowlands.

7.8.1 *Water Containers*

The presumption might be that more sedentary households tend to have a greater number of storage containers for water than more mobile households, or at least water storage containers that hold greater volume. The quantitative data I was able to collect in 2009 are not sufficient to test this hypothesis, but I can present some general observations that speak to this issue. Most water storage containers in Samburu today are round plastic jerrycans, the same containers that women use for transporting water to their homes from rivers or boreholes. My sense is that most households have at least one jerrycan for each woman and girl in the family who is strong enough to carry a jerrycan full of water on her back. Donkeys make water collection much easier, and their ability to carry heavy loads would, most likely, increase the number of water transport/storage containers found in any one household. Women may want to get clean water when available to store for later

use, as water sources can become contaminated during severe droughts, but it seems that water availability is a rarely a problem that can be planned for in advance.

Otherwise, there is little practical advantage to storing water at home if women still have to collect it by foot. Water storage containers, in other words, do not reduce labor and time demands. They may, however, increase the flexibility that women have in regards to labor scheduling. Any advantages to having additional water storage containers would still have to outweigh the costs associated with having to care for and move them. Women did mention having lightweight bags, at one time, made from animal products or gourds for water transport and short-term storage. It is nonetheless telling, I think, that the only times during interviews when people mentioned heavy and durable water storage containers, such as clay pots, were in reference to families or communities (e.g., Dorobo) who had settled down permanently. But I would certainly propose that the material culture of water transport and storage in Samburu is a topic in need of additional study.

7.9 Other Samburu Perspectives

“Newly married women had tiny houses with few possessions, while mothers with initiated sons (Imurran -- warriors responsible for defending the herds) had comparatively large houses with an ample bed space and many kinds of containers hanging from the ceiling and lining the walls. While I soon noted the material, economic, and social dimensions of the Samburu house, it was only very slowly that I recognized its symbolic richness.” (Straight 2007a:51)

Thus far in this chapter I have focused on mobility and household economics as major factors potentially influencing the composition of Samburu household assemblages. During interviews, Samburu women also often brought up another point to consider. They draw a very strong connection between stages of life and one’s household

goods, a connection that Bilinda Straight points out above. A younger, just-married wife will only need a one small pot, women would tell me, whereas an older wife with more children will need a larger pot as well. The largest pots should belong to women with Imurran sons. A woman with Imurran sons would thus, ostensibly, have the greatest number and greatest variety of pots (and other containers, Straight suggests), but as she grows older she might gradually begin to shed many of the material trappings of Samburu domestic life through gifts to younger relatives and close friends. Many of the elderly Samburu women I met during the course of this research seemed to have very few possessions at all. Most of their beads have been given away, and their kitchens are fairly empty.

I collected basic demographic data for households to determine if these patterns are, in fact, reflected in container assemblages owned by Samburu women. I will first admit to a few concerns involving sample sizes and survey methodology. The window of time between a woman getting married and building a family is most often relatively short; the great majority of a woman's life will be spent taking care of children. Most of the women surveyed for this project were in their thirties or forties, times in their lives when they might be expected to have a large complement of kitchen containers. My survey data include only a handful of households represented by elderly women, most obviously because there are simply fewer elderly people in Samburu, and also because older women sometimes move in with younger relatives, for example, and thus would not have been surveyed.³⁶ Finally, I do not have data on total numbers of children borne by

³⁶ Interestingly, there does seem to be some regional variability in demographics relating to households with adult dependents. Only one surveyed household in the lowlands had at least one adult dependent, as compared to five households on the Lorroki Plateau and six in the highlands. There was less regional variability in households with child dependents.

each respondent. For this reason, I simply use each respondent's age as a general reflection of her life stage.

There is no significant linear relationship between respondents' ages and the numbers of cooking vessels owned. Neither is there a significant quadratic relationship, which would produce a curved regression line consistent with younger women owning fewer cooking pots, middle-aged women owning more cooking pots, and older women again owning fewer. These data support the idea that cooking vessel totals are minimal in general, and reflect very basic functional needs rather than choices made to accumulate extras at any point in one's life. Serving vessels and other kitchen good totals are a different story. There is a negative linear correlation between age and the numbers of serving vessels owned ($r^2=0.08$, $P=0.0059$) and the numbers of other kitchen goods owned ($r^2=0.07$, $P=0.0118$). In other words, older women tend to own fewer of both. Quadratic regression models are not significantly better; I attribute this to the fact that relatively few women surveyed were young, just married, and without yet a large number of children (see Figure 7.12 for a visual representation of serving vessel totals v. age). Carved wooden containers and gourd containers present an interesting contrast. There is a significant positive correlation between numbers of these vessels owned and respondent age ($r^2=0.07$, $P=0.0114$). Older women tend to own greater numbers of wooden and gourd vessels; perhaps "traditional" types of handmade material culture such as wooden milking containers are becoming less important to younger generations. In the quote at the beginning of this section, Straight suggests that middle-aged women, or women with Imurran sons, might own the greatest variety of containers. My data are insufficient to fully test this idea. I do not see, however, any statistically significant correlation between,

for example, age and the number of different types of wooden and gourd containers owned per household ($r^2=0.03$, $P=0.1019$).

A related variable perhaps worth considering next is current household size. One might expect women with larger households to have greater numbers of containers (of

Figure 7.12 Bivariate fit of serving vessel totals by age of respondents. Shown are both the linear and quadratic regression lines. When the three three outlying households are excluded there is still a significant negative correlation between serving vessel totals and age ($r^2=0.10$, $P=0.0031$).

various types). In my data set, however, there are no significant relationships between current household sizes and numbers of cooking vessels, serving vessels, other kitchen goods, or wooden and gourd containers. Given the relatively long use-lives of most Samburu containers, however, perhaps vessel totals are unlikely to fluctuate greatly as children

grow older and move out or as household compositions otherwise change over the years.

7.10 *Loliin Containers*

I would like to briefly compare containers currently owned by Loliin women as compared to containers owned by other Samburu women on the Mbaringon Group Ranch. Figure 7.13 shows average container totals for Loliin households ($n=26$) and the Lorroki Plateau sample ($n=29$, one outlying, extremely wealthy household has been excluded).

Figure 7.13 Average # of containers per household on the Lorroki Plateau: Samburu herders v. *Loliin* former hunter/gatherers

Cooking pot totals are similar, although Samburu women in the general Lorroki Plateau sample had slightly greater numbers of sufurias and metal pots. Even though the Loliin community includes the only potters in the region, Loliin households do not, on average, have significantly greater numbers of pots than do members of the surrounding community. It has been decades since Loliin potters were active, and most of the pots that they made were either sold at the time or have long since been broken. Loliin do have far fewer serving vessels such as enamel cups and plates. Bowl totals are similar, and Loliin do have a greater number of other serving vessels such as store-bought ceramic mugs and drinking glasses. Other kitchen goods such as jugs and frying pans are only slightly more common in the greater Lorroki Plateau sample. Loliin do have significantly fewer wooden milking containers and gourds, testament to their history as hunter/gatherers rather than pastoralists. They have fewer animals today, and thus less need for those types of containers.

Other sections have commented upon similarities and differences in pottery used by “Dorobo” versus Samburu herders, and the ways in which these two communities have made and used different types of containers in the past. I will note that Dorobo elders sometimes mentioned that households often had as many as four or five cooking pots at a time. For now it is worth noting that contemporary kitchen assemblages are generally quite similar throughout the Mbaringon Group Ranch in terms of container types; the fact that Loliin typically own *fewer* cooking and serving vessels may be as much a product of economic status as anything else. I tried and failed to obtain accurate information on Loliin incomes and wealth, but it was very clear from informal observations and conversations that most Loliin households had very few resources, particularly compared to the (by and large) better-off households on the surrounding plains.

7.11 Summary

Can I say that **mobility** is a significant predictor of how many containers are owned by Samburu households throughout these three regions? In some cases, yes. Cooking and serving vessels are less abundant in the most mobile Samburu households. Indeed one could make a case that the relatively small container assemblages owned by women in the lowlands represent, on a purely functional level, the minimal numbers of kitchen tools a pastoralist household really needs to survive. Interviews with Samburu women reveal what might be considered an “ideal” assemblage of household containers for a mobile pastoralist family – one big pot, one small pot, perhaps a wooden bowl, and an array of specific milk containers. Household inventories, particularly in the lowlands,

generally reflect this ideal. Yet I am unconvinced that mobility alone *explains* the overall numbers of containers found in Samburu homes. Mobility may limit the number of containers a family owns to those that can fit on their two or three donkeys, but it is *not* true that Samburu would simply accumulate more of everything if they could (i.e., if high mobility did not *prevent* them in some way from doing so).

Before I explore this idea further, let me note that neither does mobility, in and of itself, wholly structure the *types* of containers found in Samburu households. It is often assumed that highly mobile groups would have fewer types of containers than would their more sedentary neighbors (e.g., Bright and Ugan 1999). This idea is most often framed in terms of differences between agriculturalists and pastoralists; pastoralists are usually assumed to need (and/or want) a narrower range of things that they would have to transport. Across my sample mobility is not significantly correlated ($r^2=0.02$, $P=0.1783$) with the total numbers of different container *types* found in each household. Types of containers are indeed fairly consistent across the three regions. It is not the case that farming households in the highlands need a wider variety of kitchen containers, at least, than do pastoralist households in the lowlands. There are certain container types that specifically serve the needs of mobile pastoralists and that are only seen in the lowlands. These would include various vessels used for milking camels, such as cone-shaped baskets and wooden bowls. None of the container types inquired about in these surveys was found to facilitate uniquely agricultural needs in the highlands. The subsistence-level farming done there does not generate particularly large demand for durable grain or seed storage vessels. In the rare case that a family has a surplus of maize, for example, it is usually just kept in rice bags. It is not the case that more sedentary, agricultural groups

necessarily *need* more types of vessels; it may be the case that they *choose* to accumulate them for other reasons.

I would argue that **subsistence** is the ecological and ideological aspect of pastoralist life that most fundamentally structures the material culture of Samburu homes. The heavier, bulkier cooking pots that predominate in household assemblages in the lowlands are strongly culturally tied with pastoralist subsistence practices, namely the preparation of meat and bone soups both during droughts and ceremonial feasts. There is stronger resistance there, bred by ecological necessity, to the adoption of a settled, agricultural lifestyle and related types of household goods. Aluminum sufurias, on the other hand, exemplify the new and arguably unfortunate Samburu condition of being dependent on maize meal (and tea). This is the reality of life for most families now in the highlands and a large number on the Lorroki Plateau. Serving vessels in these two areas are changing as well, with the proliferation of tea cups, bowls, and plates reflecting a shift towards the consumption of prepared, agricultural foods. Wooden and gourd milk containers are the most obvious example of a uniquely “pastoralist” type of material culture, and they are becoming increasingly rare in the highlands as livestock arguably become less economically and culturally important.

7.12 Luristan: A Comparative Example

A case study examining household assemblages in western Luristan (today Iran) reveals strikingly similar patterns to those I see in Samburu. Mortensen (1993) reviews changes in the household material cultures of nomadic Lur-speaking herders, comparing ethnographic data from the 1960s with inventories of museum collections amassed by

Danish ethnographers in the early twentieth century. Collections from the 1930s, a time period when the Lur were highly nomadic and heavily reliant on pastoral products, show a dearth of “fixtures” such as more durable items of furniture, storage boxes, etc., and relatively greater numbers of “portables,” or smaller, in some cases more perishable types of household goods. By the 1960s, the Lur had begun a forced and traumatic transition to a settled and more agricultural way of life. Even before the community had settled completely, many houses had adopted more heavy and durable types of furniture such as wooden chests and metal boxes. Inventories of food storage vessels and cooking utensils, however, remained for the most part unchanged despite drastic changes in residential mobility. One of the few differences Mortensen does note is that many houses had purchased durable serving vessels such as teapots, tea glasses, and saucers.

The history of subsistence change in this region appears to have been complex and marked at various points by food crises, organized resistance, and reorganization into agro-pastoral systems (Black-Michaud 1974). I cannot at this point draw direct connections between changes in household material culture and the economic, social, and cultural upheavals during the time described by Mortensen’s book. Yet the implications are intriguing. In Samburu, the newest houses do have sofas, beds, coffee tables, and other heavy and durable “fixtures.” The architectures of the houses themselves are also obvious and highly visible signs that Samburu are choosing to modify “traditional” aspects of Samburu material culture in the face of sedentarization, increasing agriculturalism, and various development efforts. But the accoutrements of everyday domestic life – the pots, pans, and utensils – remain largely the same. Household container assemblages in both Samburu today and in mid-20th century Luristan seem

relatively slow to reflect shifts in residential mobility, and may be connected instead to continuity and conservatism in culinary practice and the social aspects of food consumption. The accumulation of serving vessels in both cases deserves, I think, much greater examination as to its causes.

8 Pots and Other Things Left Behind

“Keilash, dei inia toki.”

It is proud, that thing.

– Neng’iro Lepilale,

Speaking about a clay pot.

The previous chapter on household assemblages has challenged the idea that Samburu women do not possess, at any given time in their lives, a wide range of durable material culture. As a step towards bridging the interpretive gap between the present and the formation of the material record in the past, I will now examine patterns of artifact discard across a range of contexts and site types in Samburu. I will begin with discussion of container use-lives, and consider what typically happens to those types of items mentioned in household surveys once worn-out or broken. I will then take a wider-angled look at patterns of artifact discard across site types, from settlements to meat-feasting sites, and discuss artifact patterning at varying temporal and spatial scales.

8.1 Use-Lives of Objects

The archaeological relevance of the household survey data that I present is made clearer with a brief discussion of container use-lives and the patterns of discard that one might expect to find at settlement sites. The wooden milk containers found in Samburu houses, along with metal and plastic containers, could theoretically last a whole lifetime. Aluminum sufurias may wear out more quickly, but I rarely saw such vessels being repurposed once they could no longer hold food over a fire. One woman in Siambu did

have a battered sufuria perched high on the top her pointed thatched roof, to prevent rainwater from pouring inside. Clay cooking pots are a different story, and their propensity towards breaking is nearly always cited by archaeologists as Reason Number One why mobile peoples would tend to avoid them. But what is the actual use-life of a clay pot in a pastoralist context? When and where are they most likely to break and be discarded? These are complicated questions for more reasons than one.

The first reason that collecting data on the use-lives of objects such as cooking pots is a challenge in Samburu is that women and men, as mentioned before, tend *not* to measure the passage of time in “years” as we know them. Instead, women would often tell me that a pot, for example, would last for the time it takes a woman to have two or three babies. Only ten of the women surveyed who had owned pots in the past were able to tell me exactly how many years their pots had survived before finally breaking. The average use-life of those cooking pot was almost six years. The longest-lasting pot that a woman once had was over ten years old, or (as she also explained) the time it took her to have five of her children. Of the pots currently owned by the women I interviewed, four had been bought fairly recently, for the *Imuget* ceremonies in 2006. The oldest pot I found was a Meru pot, which was said to be approximately twenty years old. The oldest Samburu pot that I came across while in the field was fifteen years old. Many women had no idea how old their pots were for another reason, and that was the way in which pots tend to be circulated between households over the course of their use-lives. Some women had inherited pots of unknown age from their mothers or co-wives, and others had borrowed pots for years at a time from their nieces and neighbors.

Nevertheless these data bring me to the second reason that reporting the “typical” use-lives of Samburu pots is complicated: The use-lives of pots seem to have lengthened over the past several decades. This change has occurred, I think, because women know that Samburu pots can no longer be easily replaced, if they can be replaced at all. The supply of pots from Dorobo potters is now greatly outweighed by demand. Women have always been careful not to break their pots, but one woman who had a pot more than a decade old described to me the additional steps she was now taking to prevent the pot from getting broken. She now refuses, for example, to lend the pot to *Imurran* for meat feasting for fear that they would break it. The pot is now only used for very important ceremonial occasions. Other women only allow their pots to be used for making herbal medicines.

Changing patterns of mobility in Samburu may also, to some small degree, be affecting the use-lives of various types of containers. Pots and perhaps some types of containers such as gourds are most likely to break, it seems, when being loaded and unloaded on pack animals. It would thus stand to reason that more sedentary patterns of living would lead to longer use-lives for easily breakable goods. But now that Samburu are largely sedentary, pots are no longer being used on a regular basis. The shift to other types of metal cooking pots is in large part *because* Samburu are no longer depending as heavily on livestock and moving their households accordingly. In this case it may be impossible to sort out causes and effects among the numerous factors that play into patterns of container use and discard.

8.2 Potsherds, Broken Milk Containers, and Cattle: Patterns of Discard

When a Samburu container comes to the sad end of its use-life, what happens? The answer, not surprisingly, depends. Broken sufurias and broken plastic containers are often seen strewn about homesteads, after having been repurposed for whatever small tasks might arise. Broken potsherds and broken milk containers are treated quite differently.

First, it is important to note that the physical integrity of both pots and milk containers are given a reverential respect. As Jean Brown recorded at Wamba in the 1970s, “It is very bad to break or smash a pot deliberately. It would result in a bad leg or arm or the potters child becoming sick. If a pot is so broken a goat must be sacrificed” (National Museums of Kenya collections card). Likewise, I was informed by an elder near South Horr that even if a woman carrying a pot accidentally falls and the pot breaks, a goat must be slaughtered on that spot and the woman must be covered with the contents of the goat’s stomach. This is done in order to cleanse her. Other actions that signify any disrespect towards pots also require cleansing slaughters of small stock. For example, one must not pass a pot over a fence; one must instead go through the gate. Crawling over a fence with a pot is similarly bad behavior. Wooden and gourd milk containers can “starve” and crack if left neglected and empty, and so small amounts of milk are always kept inside. Neng’iro’s affirmation that pots are “proud” suggests that inanimate objects can indeed both feel and act in the Samburu world – gourds like certain people, pots hear babies crying, and so on. Although I know too little about Maa linguistics and philosophy to debate the significance of object agencies, I am confident in noting that to Samburu, pots also kill cattle.

Pots are never taken anywhere near cattle, they are never used for milking, and they are never brought into a cattle enclosure. When a woman absolutely must cross a *boma* with a clay pot she performs a simple rite, explained to me by Mpashie Lesorogol. This woman must walk a few steps, and motion as if she is setting the pot down on the ground. She does this repeatedly until she reaches the other side. All the while she chants the following: “*Eterie moti, nepuo nkishu daa.*” “*Eterie moti, nepuo nkishu daa.*” “*Eterie moti, nepuo nkishu daa.*” “The pot fell and broke, the cattle go for grazing.” “The pot fell and broke, the cattle go for grazing.” “The pot fell and broke, the cattle go for grazing.” Leaves of grass are sometimes put inside a pot being carried in this way. The pot is thus emblematically full, with no room left inside for meat. Green grass is also a blessing, and to fill a pot with it is to ask for forgiveness and mercy. As Prame explained to me,

It is like with lactating baboons. They will offer breast milk in their hand if you are about to kill them. Likewise you cannot kill someone who holds out green grass to you. Or if you are scared of thunder and lightning, you can put green grass on the roof, and the thunder will have mercy on you. By putting grass in the pot, it is like asking the pot not to kill those animals. Green is the color of peace.

A pot above all symbolizes the death of an animal: This is what it means to say a pot, as Mpashie told me, “has slaughter” (*keata yiang’are*). It “hates cattle” (*nkishu eiba*), and thus a pot must be symbolically broken to ensure these animals’ safety. Stated another way, “*Nepuo naa nkishu eserian, neeye moti*”. “The cattle go well, the pot died.” It has to be one or the other. Only Dorobo can cross a cattle enclosure with a pot and without repeating these words and these motions. Because, they say, the Dorobo have no cattle and are thus unconcerned. The fact that Dorobo elders often mentioned, with little reservation, having households full of clay pots points to there being some truth in this sentiment.

If a Samburu pot should break, the potsherds themselves are also accorded great power and respect. To throw a piece of a pot at someone you hate is to curse them. When a pot “dies,” its pieces are supposed to be taken immediately to the edges of the boma and placed among the thorn brush there. This is done primarily to prevent cattle from walking on the sherds, which would of course be calamitous for the cow and thus also the people. People must not walk on potsherds either, and sweeping or placing these fragments aside is a way to avoid this danger. The alterity of the pot to the wooden or gourd milking container is exemplified in the way they are each treated once dead. When a milking container breaks beyond any chance of repair, the pieces are taken to the center of the cattle enclosure. They are left on the ground, specifically for the cattle to trample into the earth.

8.3 Site Types and Related Material Culture

Previous ethnoarchaeological discussions of pastoralist sites have focused almost exclusively on the material culture that might or might not be found at domestic settlements (Mbae 1990; Robbins 1973; Robertshaw 1978). In Chapter 4, Part I, I noted a number of other site types, including meat-feasting sites, cattle camps, and large ceremonial sites, that are routinely created and used by Samburu herders. This next section will review and reconsider the potential archaeological signatures of pastoralist sites across a physical and social landscape. Table 8.1, at the end of this chapter, summarizes these results.

8.3.1 Domestic Settlement Sites

Think back to the map in Chapter 4 (Figure 4.1) that showed residential patterns of mobility on the Lorroki Plateau in the 1950s. At the exact site of a boma from 1956, I stopped to see if there was any trace still left of the settlement. There was none. When I asked the Lesorogol elders what types of things may have been left behind, the answer was indeed very few. People had more than enough milk due to the plentiful rains that year, and so livestock mortality that year was almost zero. No animals had to be killed, except for a few small stock that were slaughtered on ceremonial occasions such as the birth of a child. Thus very few bones would have been left behind, and those that were might have been burned to prevent the transmission of disease. In dry years, greater numbers of small stock would have been slaughtered, but very rarely if ever would cattle have been killed for consumption at domestic sites. The three blocky hearthstones would have been left behind, but the likelihood that they would have remained in situ for long was slim. Neighbors are likely to take hearthstones, the elders explained, to re-use them in their own homes. Pieces of broken pots may have been left behind along the fenceline, but none were visible upon our return. The elders agreed that I might also be able to find parts of metal tools, perhaps an iron machete blade, if I looked hard enough.

My observations might seem to corroborate the findings of earlier scholars who concluded that mobile pastoralist campsites would be difficult to trace in the archaeological record. At any one site abandonment event, true, there would likely be little in the way of material culture remaining behind. But these studies often fail to consider the ways in which pastoralist landscapes in the archaeological record represent palimpsests of overlapping occupations. In other words, although Samburu are relatively mobile they tend to return to favorable settings, often building new settlements on top of

old. Instead of focusing efforts on recovering individual campsites in the archaeological record, it might be more productive to consider pastoralist “sites” in broader terms. I found large and at times dense scatters of potsherds at settlement areas throughout Samburu as I walked from boma to boma. Eerkens (2003) argues for caching as the reason we find accumulations of pottery at mobile campsites. I see no reason why routine ceramic breakage and discard, combined with repetitive use of settlement areas, may not also account for the accumulation of sherds at a site.

Some of the more subtle characteristics of Samburu settlement patterns would doubtless be lost to time. I have mentioned, for example, the seasonality of pastoralist subsistence, mobility, and container use. People were once most mobile during dry seasons and droughts, and these were also the times during which pots saw the most frequent use. If Samburu had “dry-season” grazing/settlement areas and “wet-season” grazing/settlement areas, I would expect faunal remains from cattle and small stock to be much more common (but more dispersed) in dry-season areas, along with broken and discarded ceramics. But Samburu are *not* transhumant pastoralists, and seasonal grazing patterns are *not* strictly predetermined but rather more fluid and opportunistic. Only through more creative methodological approaches might seasonality be visible in the Samburu archaeological record. Isotopic analyses of cattle or sheep/goat teeth, for example, might shed light on grazing patterns, culling practices, and other aspects of pastoralist livestock management, and archaeobotanical recovery efforts might yield evidence for seasonality in plant use. Relating those data to patterns of household container use would then be the challenge.

In the 1950s Samburu houses on the Lorroki Plateau – small huts constructed within the settlement enclosure from flexible wooden poles and mats – would have been dismantled and moved with the livestock. Only the slightest traces – perhaps a packed-down floor, a few tiny postholes, would have remained. I have little optimism that similar houses built by prehistoric pastoralists might be discovered in archaeological contexts. Indeed, Shahack-Gross's (2004) micromorphological analyses of the floors of similar Maasai settlements failed to detect distinctive signatures. Although settlements in the Samburu lowlands tend to have been similarly ephemeral, stone cairns (Figure 8.1), built just inside cattle enclosures to protect goats from hyenas and other predators at night, might remain intact for years. Even if architectural remains and other material traces might be scarce, however, old clearings and bomas are often still visible, centuries if not

Figure 8.1 A boy coaxes a goat into its cairn for the evening, near Latakweny

millennia later, on grassland landscapes. Geoarchaeological methods are now effective in detecting old dung deposits left by animals penned inside the enclosures, and the chemical and nutrient traces left by dung may shape the floral and faunal ecologies of pastoralist rangelands in detectable ways (Shahack-Gross et al. 2003; Shahack-Gross et al. 2008).

In terms of architecture, the more permanent settlements now seen on the Lorroki Plateau and in the highlands would certainly leave visible traces on an archaeological landscape. Large refuse pits can be seen just within or outside boma fences, and borrow pits within enclosures on the Lorroki Plateau are now created when women dig up clay used to construct their roofs. Of course there are also the houses themselves, whose postholes and daub-like plastering would preserve under certain conditions. The shift from the small round houses in Samburu to larger rectangular houses deserves, I think, much greater ethnoarchaeological study. Some scholars suggest that it may be possible archaeologically to reconstruct population demographics from ancient floor plans, noting that increased house sizes might reflect greater numbers of people living within them (Porčić 2011). Flannery (1972, 2002) famously pointed out that as settled villages developed in Mesoamerica and the Near East, housing styles likewise tended to shift from round to rectangular. Rectangular houses are easier to both expand upon and to compartmentalize, and shifts to this type of housing may, he argued, reflect shifts in social organization, storage and risk management practices, and increased reliance on farming. Reasons behind the shift to rectangular houses in Samburu have yet to be fully explored, but might reflect (among other things) a desire for more personal space. The shift may also reflect the influence of the larger and more “modern” *mabati* houses (iron-

roofed, cinderblock buildings) now common in some areas, particularly towns (but see Straight 2007a).

8.3.2 *Cattle Camps*

Cattle camps in the Kirisia Hills at the time of my fieldwork, in contrast to the domestic settlements out on the plains, were quite sparsely furnished. A few plastic cartons and water jugs were lying about, along with one or two USAID cans or aluminum cooking pots now used for cooking maize meal. At one camp I did see a bow and arrow, used by *lmurran* to bleed cattle. These are the most ephemeral of Samburu occupation sites, with little to no substantial architecture, and I doubt that archaeologists would have great success in identifying similar sites.

8.3.3 *Rockshelters/Caves*

A very distinctive pattern of site use and artifact discard should be apparent at all Samburu meat-feasting sites in the forest. Each site should have a communal roasting area and at least one if not multiple hearths. In terms of artifacts, the only type of clay pots ever used at meat-feasting sites was the large cooking pot. Those pots often broke, and I indeed found sherds on the surface at meat-feasting sites throughout Samburu. *Lmurran* would borrow pots from their mothers or steal them. The stolen pots would often be cached in the forests, especially if *lmurran* planned to go back. Borrowed cooking pots would be returned to their mothers, with pieces of dried meat inside. One elder recounted with a grin the time he cheekily put a shoe in instead. If a pot broke at the meat-feast it would be discarded away from the sleeping areas of the rockshelter or cave. Today, *lmurran* most often use metal *sufurias* for cooking soups. Other containers, such

as the animal-stomach water vessels and wooden bowls once used for drinking soup and water, would have been unlikely to break and preserve in the archaeological record.

Patterns of meat preparation and sharing are rigidly structured, and patterns of discard at meat-feasting sites will be ordered accordingly. First, though, evidence for culinary processing techniques will vary by faunal body part, and will be consistent across meat-feasting sites. Ribs, scapulae, and tibiae, for example, will always be roasted, and sterna along with most vertebrae (all but the upper neck bones) will always be boiled. Large bones and other debris are always cleared out of the rockshelter to minimize ticks, fleas, ants, and other pests. Small bones that have been boiled are either thrown in the hearth fires or outside the sleeping areas with other refuse. Cattle skulls are typically placed on display high up in trees. Bones from stolen animals are sometimes burned for secrecy, lest hyenas cart them away to where other people might see. Richard Gramly's (1975) test excavations of Maasai meat-feasting sites at Lukenya Hill, just southeast of Nairobi, confirmed a large proportion of cattle in meat-feasting faunal assemblages. He notes that this should stand in contrast to hypothetical faunal assemblages from settlement sites on the plains, where sheep/goats should be found in relatively greater abundance. He likewise found lithics, pottery, and numerous items of personal ornamentation, including objects such as nose guards carved by Imurran from cattle bones. Larger-scale excavations would be needed to determine spatial patterns of use.

During my surveys of rockshelters and caves in the Kirisia Hills, I should note that I did record several Samburu sites with substantial amounts of wild fauna seen on the surface. At one rockshelter, for example, were several lesser kudu skulls and a buffalo femur, along with the remains of at least two cows. All of the bones were thought to have

been there for less than a year, and I have to believe that the slaughter of wildlife was done in response to severe food shortages brought on by drought. It seemed that sites with wild fauna were more likely to be tucked farther away in the woods rather than near to the plains, a fact perhaps related to the current illegality of hunting wild game. These findings reminded me of Pastoral Neolithic rockshelter sites and at least one large open-air site elsewhere in Kenya, where substantial amounts of wild fauna have been found with ostensibly “pastoralist” pottery (e.g., Gifford et al. 1980). A standard explanation is that these sites represent occupations by pastoralists who had lost their herds, and were perhaps integrating themselves into hunter/gatherer communities. This has happened in Samburu in extreme situations such as the *mutai*. There must be recognition, however, that “pastoralist” subsistence systems might include a fairly regular dependence on wild game during droughts and other times of food stress. It is also interesting that a number of Savannah Pastoral Neolithic (SPN) sites in Kenya have higher proportions of wild fauna than commonly seen on Elmenteitan sites of the same time period, c. 3,000-2,000 years ago (see Marshall et al. 2011:50).

Botanical remains at Samburu meat-feasting sites would be wholly different than those found at domestic sites. At meat-feasting sites, barks and other herbs are used in abundance. Figure 8.2, for example, shows strips of acacia bark recently left behind at a rockshelter near the Kirisia Hills. I do not know whether these barks would preserve as macrobotanical remains in the archaeological record, or be identifiable if so. None of the nuts, seeds, or fruits prepared by women at domestic sites would, of course, be found at meat-feasting sites. There is little need for grinding stones at meat-feasting sites, although rocks scattered about can be used to pound barks for soup.

Figure 8.2 Acacia bark used by *Imurran* in soups

I conducted a number of interviews and mapping projects with Dorobo elders about rockshelter occupations as well. Data from these efforts reveal significant differences in spatial and artifactual patterns of rockshelter use between Dorobo in the past and Samburu Imurran today. I was told that when Dorobo lived at the rockshelters of the Kirisia Hills, before moving out to the plains in the early 20th century, there would have been no central roasting areas. Different families would instead partition different areas of the rockshelters for their own use. Meat would be distributed primarily among a hunter's immediate family, and there would be little in the way of gendered food-sharing divisions. Today, a cursory look at percentages of wild vs. domestic fauna at a rockshelter sites in the Kirisia Hills might reveal little about the cultural and ethnic identity of the group who most recently used it. Dorobo are highly integrated into

Samburu society, and their Imurran participate in meat-feasts. I did, however, come across one rockshelter apparently utilized exclusively by members of the Loliin community. There were beehives in the rocks above, and an assortment of both wild fauna and domestic fauna surrounding hearth deposits below. Zooarchaeological analyses of specific taxa present, body-part representation in certain areas of the site, and culinary processing techniques might reveal any lingering differences between this site and those used by the broader Samburu population. Pottery use would surely be exactly the same, although residue analyses will have to confirm or deny. An interesting comparative case would be the Mukugodo Maasai; Mutundu (1999) has excavated recent sites occupied by Mukugodo hunter/gatherers who transitioned economically to pastoralism, and in terms of ethnic identity to Maasai, in nearby Laikipia (see also Cronk 2002).

8.3.4 *Lorora*

Material culture at lorora, the ceremonial encampments built for the *Imuget* ceremonies, closely mirrors that found at domestic encampments with one major exception. Faunal remains will include large numbers of cattle, whose bones will be distributed in very predictable and highly gendered ways across the settlement. Many of the bones from the Imuget ceremonies will be burned. This is for sanitation purposes, and also for fear that witches or sorcerers might come to collect the bones and use them for harm. I noted, however, a great number of tarsal bones still lying around the roasting area of the lorora at *lowa loltorrobo*. The remaining bones from the roasted portions of cattle had been carried away and thrown under a tree, the *lcheni lolmuget* (Figure 8.3), and the roasting sticks had been leant against its trunk. The tree is considered holy from the start of the *Imuget* and thereafter. Along the thorn fence surrounding the settlement one would

find bones from the women's allotted parts of the cattle, including vertebrae, for example, but not the ribs. All bones from small stock, from parts eaten by both women and women, will be thrown along the outer fence as well. Near these bones one might find pieces of clay pots, if vessels were broken accidentally over the months-long course of the ceremony.

Figure 8.3 Tree, *lcheni lolmuget*, with roasting sticks. Piles of bones lie underneath.

Lorora reflect, I think, an idealized Samburu existence rather than the reality of life most of the time. People live together, and there are more than enough cattle to wholly sustain them. It would be nearly impossible to identify sites such as these as specifically “ceremonial” in the archaeological record without examination of the zooarchaeological assemblage for signs of feasting. Ceramics found at lorora and

domestic settlements would be the same, although perhaps lorora would have greater percentages of larger pots.

Table 8.1 Common material culture by site types

	Domestic Settlements	Cattle Camps	Meat-feasting Sites (Rockshelters/ Caves)	Lorora (Ceremonial Settlements)
Pottery	Complete range of forms and sizes, discarded along fence	none	Cooking pots only, predominantly large pots, discarded beyond sleeping areas	Cooking pots only, predominantly large pots, discarded along fence
Fauna	Small stock, discarded in refuse pits or along fence	none	Cattle, more recently small stock, difference in body part representation at roasting pits v. hearths	Predominantly cattle, difference in body part representation at roasting pits v. hearths
Flora	Fruits, seeds, nuts, etc.	Possibly roots/barks	Roots/barks	Roots/barks
Other Household Material Culture	Broken wooden/gourd milk containers in livestock enclosures, grindstones, lithics/iron tools for household use, butchery, and hide processing	Tools associated with bleeding cattle, perhaps broken milk containers.	Tools associated with butchery/bleeding, rock art	Possible broken milk containers in livestock enclosures, lithics/iron tools for household use, butchery, and hide processing.
Spatial Layout	Smaller enclosures with up to several houses, significant dung accumulation (small stock & cattle), possible house architecture	Small clearings, rarely any architecture	Roasting/boiling areas, bedding deposits	Large enclosures with up to hundreds of houses, some dung accumulation (predominantly cattle), possible house architecture

8.3.5 Other Site Types

Mortuary cairns associated with both ancient and modern pastoralist groups are known throughout northern Kenya (e.g., Stiles and Munro-Hay 1981), and thus far prehistoric cairns have been the only site types surveyed for and excavated in Samburu (Lane et al. 2007), though rockshelters and open-air sites have been excavated farther

south in nearby Laikipia (Causey 2010; Mutundu 1999; Siiriäinen 1977). In Samburu, until Catholic missionaries began having some degree of influence in the region, it was typical for bodies to be left out in the open for hyenas to eat and carry away (see Straight 2007b:115-126). Only a small number of people, such as *loibon* or diviners, may have been accorded special burial rites (for Maasai examples see Berntsen 1979; Fox 1930; Waller 1995). This is not to say that Samburu never otherwise marked places of particular significance on their landscape. Monuments similar to stone cairns were sometimes built by Imurran, for example, to remember places where enemies had been vanquished in battle. Rock art found at meat-feasting sites also may have served as permanent reminders that Imurran once gathered in solidarity at those places.

8.4 Discussion

The identification of short-term and otherwise ephemeral occupations in the archaeological record have been improved with more sophisticated models for interpreting radiocarbon data (Seymour 2010), and the integration of GIS-based studies of patterning across landscapes can now bring some degree of visibility to mobile populations. In Samburu, I would argue that repeated use of domestic settlement areas (as well as rockshelters and ceremonial settlement areas) allows for significant and varied accumulations of archaeologically-recoverable material culture, including pottery (see Table 8.1. Ethnoarchaeological studies of pastoralist site abandonment in Spain (Creighton and Segui 1998) and Jordan (Saidel 2001) have indeed suggested other ways in which pastoralist material culture might be modeled on both intra- and inter-site scales. On the Samburu plains, future efforts to map patterns of artifactual discard in much

greater detail may only be possible during severe droughts when grass is dead if not gone completely, but would be highly desirable in terms of validating, disputing, and/or refining the general observations presented here. Full-scale excavations at rockshelters or caves, such as those in the Kirisia Hills, would also help to ground-truth my observational and interview data about Dorobo occupations and later Samburu meat-feasting practices. At several rockshelters I tested the depth of leafy bedding deposits with the thin, sharp end of a spear. At some sites these deposits seemed to extend for over a meter, suggesting great archaeological potential.

9 Conclusion

This dissertation represents my effort to begin building an archaeological literature on the material signatures of mobile pastoralism in Africa. Results from my ethnographic research among modern Samburu cattle pastoralists reveal a deep and perhaps unexpected integration of pottery, grindstones, and other durable household goods into the the daily lives of men and women, young and old. I describe these household goods, focusing on containers, in Chapter 7. I then present a special case study on the production and use of Samburu pots. I argue that pottery use occupies a central role in Samburu society not *despite* the fact that Samburu are mobile herders, but rather *because* Samburu are mobile herders. An ethnohistorical examination of pottery use in Samburu suggests an ecological reason: Pots may enable mobile pastoralist systems of production in unpredictable and drought-prone settings by allowing a full exploitation of certain resources such as bones and wild plants. The use of pottery has persisted, at least on a small scale, even as subsistence practices in Samburu have changed. Pots are still considered critical for the preparation of bone soups during ceremonial occasions, and for the preparation of herbal medicines.

A series of household structured interviews provided a snapshot of current container use across the Samburu region. It became clear that there was no *one* distinguishable “container complex” in Samburu; household assemblages varied by (among other things) the gender, age, and wealth of their owners. Patterns were distinct by container types, and examination of regional variability across Samburu indeed suggested ways in which material culture might reflect processes of sedentization and

agriculturalization. Cooking pot totals were relatively consistent across all households, for example, whereas serving vessels were most commonly owned by settled, farming families in the highlands and on the Lorroki Plateau. Chapter 8 considered patterns of container use and discard at domestic sites and other elsewhere across the Samburu landscape. Despite prevailing wisdom about the archaeological visibility of mobile societies, repeated use of some spaces would allow for significant and varied accumulations of ceramics and other archaeologically-recoverable material culture.

This conclusion will revisit my research questions, presenting a few additional thoughts on mobility, subsistence, and material culture of mobile pastoralism. I also reflect on ethnoarchaeology as a research methodology, and consider the implications of this Samburu case study for the interpretation of African pastoralism as understood from the archaeological record.

9.1 Thinking beyond Mobility

I suggest, first, that archaeologists think beyond mobility when trying to predict or explain the archaeological patterning of pastoralist material culture. There has long been a tendency, amongst archaeologists, to exoticize nomadism as a fundamentally different way of life than our own. We often take it for granted that pastoralists, for example, possess a “nomadic ethos” in which mobility is the fundamental center around which all else in a people’s world must revolve. Social institutions, cultural beliefs, and material culture have to accommodate some intrinsic need to move. This may be true to some extent. I think our obsession with mobility is often, however, a projection of our own biases: We think that mobility fundamentally structures the visibility of

archaeological sites; therefore, mobility must have fundamentally structured the lives of the people we study.

It might be worth considering the idea that some highly mobile peoples take that mobility for granted and instead structure at least their cultural lives around something else. This is, I would argue, the case in Samburu. They are (or at least used to be) highly mobile, yes, but their identity is built firstly upon their devotion to a subsistence economy centered on livestock. Of course mobility and subsistence are intimately interrelated; Samburu cannot keep cattle in this part of northern Kenya without moving around. That their vision of Samburu-hood is more strongly rooted in their ties to food (livestock), however, than in their means of obtaining it (mobility) is a critical distinction with material ramifications. This dissertation has examined these ramifications, and suggested if not the fallacy of the universal “nomadic ethos” then at least its over-simplicity. Marshall Sahlins once said that, for mobile communities, “Small goods are in general better than big goods” (1972:12). My study allows us to question why, from a pastoralist perspective, this may or may not be the case.

Neither ceramic production nor ceramic consumption is prohibited outright by relatively high levels of residential mobility. We already knew this fact thanks to numerous ethnographers, colonial administrators, and historians who have documented the existence of both pottery production and use in mobile groups around the world. Through fieldwork in Samburu I have sought to explain the ways in which container use, in particular, and mobility are reconciled in pastoralist contexts. But do Samburu see any inherent conflict between, for example, patterns of residential mobility and pottery ownership in the first place? I often asked elders how this relationship played out in

everyday practice, i.e., how people could have had large and easily breakable clay pots when, in the past, they were moving so often. The usual response mentioned donkeys and the fact that transport was rarely a problem. Once, however, an elder patiently told me the following:

People moved when carrying pots. They just moved. Because there was a time when people moved until evening. [If a family travels long distances with their cattle herds, they cannot separate the calves from their mothers. Because those calves are suckling, the family will have no milk for themselves.] So they will move until evening, and then slaughter a big sheep for the children to eat while the rest of the family builds a house and a fence. They will boil the meat in a pot, over a fire. So pots meet children with food. They are not an obstacle to moving.

To Samburu, pots *allow* families to move. Explanations such as these, once given, seem so patently obvious that my questions framing mobility and pottery as existential problems, in retrospect, seem ignorant to no small degree.

9.2 Subsistence, Material Culture, and the Ecology of Samburu Pastoralism

So much of the archaeological literature on pastoralist material culture is still devoted to the explication of mobility as a limiting factor in the *production* of durable goods that few studies have bothered to consider *consumption*. In Samburu, the acquisition and ownership of pottery and other large, heavy, and often breakable items such as grindstones is in no way considered antithetical to a nomadic way of life. Indeed in many ways they represent it. Elders in the highlands of Siambu generally acknowledge that Samburu in the lowlands today maintain a more traditional lifestyle, one still largely centered on seasonal patterns of movement that often include both livestock and entire settlements. Results from household-focused structured interviews show that Samburu in the lowlands nevertheless have greater percentages of clay pots and heavier metal pots

than Samburu elsewhere. Samburu still use pottery and other items such as grindstones, people say, because those technologies specifically enable nomadic, stock-keeping lifestyles. A major contribution of this dissertation is the documentation and description of how and why this is the case.

It should come as no surprise that utilitarian goods held by mobile pastoralists might, in fact, serve some functional purpose related to mobile pastoralism. Yet no ethnoarchaeological research had previously discussed specific needs that pastoralists might have for such types of material culture. One common assumption is that pastoralist pottery, for example, is most likely used in some way for the collection, storage, and/or transport of milk. In Samburu this is never the case. Pots are only for cooking or storing meat, and are (or were, before the introduction of metal pots) critically important in allowing for the exploitation of certain resources during unavoidable times of food stress. Bones are boiled to extract the greatest amounts of fat and nutrients, wild plant resources such as acacia pods are repeatedly boiled to render them edible, and surplus milk is boiled to make ghee, thus extending its shelf-life. This study provides an important baseline for future lipid residue analyses of pottery from pastoralist archaeological contexts, and I challenge the assumption that residues from pots used by highly specialized eastern African pastoralists would necessarily reflect a heavy reliance on milk.

I am not the first to suggest that pastoralism as a subsistence strategy should generally be considered an ecological adaptation to marginal and unpredictable environments (see N. Dyson-Hudson and R. Dyson-Hudson 1999). Although not elaborated upon in this dissertation, the social organization of food preparation and

consumption are also perhaps ecologically-grounded on some basic level. Patterns of meat-sharing, for example, might also be structured to ensure that all members of society are able to eat and drink a fair share. Slaughtered animals are always divided amongst the community in predictable (if not always obviously equitable ways). It is sometimes said that the owner of a cow really owns only its skin. The hide, in the end, indeed belongs to owner. But the meat must be shared.³⁷ Or consider meat feasting by *Imurran*. One elder explained to me that meat-feasting was primarily done in dry seasons, whenever there was too little milk. Elders told the Imurran not to compete with the young children, not to take all the milk. Go and eat meat, they said. Milk is for the rest of the family.

But do all pastoralist societies, during dry seasons, banish their young men to the woods? Surely not. There are innumerable means by which members of a pastoralist society may choose to organize their particular system of food production, and material culture will vary accordingly. I am not arguing that ancient pastoralist communities in eastern Africa must have used pottery and other material culture in the same ways as Samburu (cf. Wobst 1978). Rather, I present the Samburu case as one example that can help us to expand our sense of what might have been possible in the past (e.g., pots may not have been just for milk). Documenting variability inherent to pastoralist systems of production and material culture, and reasons behind that variability, can only improve our understanding of pastoralism in the archaeological record.

Of course pottery and grindstones are just two of many types of material culture thought to facilitate activities specifically associated with pastoralist modes of

³⁷ Prame once tried to explain another, deeper meaning of this expression to me. I am not sure that I can do it justice here, but I will give it a shot: When cattle are alive, the only part of them one sees is their skin. It may look to a bystander, then, as if a man with a vast herd of cows is extraordinarily wealthy. In the grand scheme of things, though, everyone knows that cattle belong to everyone, and that the community as a whole lives or dies by the will of God (*Nkai*) and the health of everyone's herds.

production. I have not considered the tools that women use to scrape hides and fashion beautiful capes; I have not considered the tools used to carve the wooden troughs that hold food and water for animals. There are a great number of tools made and used by Samburu that together constitute the trappings of their pastoralist lives, and my hope is that many future dissertations will be written about them.

9.3 Hunter/Gatherers and Pastoralists

To what degree is there anything, in terms of function, recognizably “pastoralist” about material culture made and/or used by Samburu pastoralists? The use of goods such as ceramics and grindstones, typically associated in archaeological literature with sedentism and agricultural production, are integral to many mobile pastoralist systems. Not, I would argue, because pastoralists use those items to process agricultural products, or because they maintain any enduring dependence upon their agricultural neighbors. Rather, Samburu and other eastern African pastoralist groups utilize pottery and grindstones in ways much more similar to neighboring hunter/gatherers. Samburu primarily use pots, for example, to boil meat and bones from slaughtered livestock, and Dorobo hunter/gatherers once used pots in similar ways for boiling meat and bones from wild game. Both communities also use pottery to process wild plants for food and for medicine. There are a few ways in which Samburu use household material culture that are specifically related to either the care of livestock or the processing of secondary products. Both grindstones and pottery, for example, are used to process veterinary medicines. Pottery is also used to boil milk for babies, and containers made from carved wood or gourds are the most important vessels used for the collection and storage of

milk. Although my research focused on container technologies associated with pastoralist production, I would admit that additional research on tool use (spears, knives, scrapers, etc.) by pastoralists is necessary to present a complete picture of ancient and modern pastoralist technologies.

In terms of how these ethnoarchaeological data might contribute to an understanding of material culture patterning in the archaeological record, several points must be raised. A common goal of much previous research on pastoralist material culture has been to establish means by which archaeological sites can be identified as either pastoralist or otherwise, i.e., hunter/gatherer or agriculturalist, in the absence of conclusive faunal data (e.g. Cribb 1991; R. J. Bradley 1992; Robertshaw 1978). I am unconvinced that any such means might exist. One problem lies in conceptualizing pastoralism as a fixed and bounded category in relation to everything else, when in reality pastoralists and hunter/gatherers have often been one and the same. By this I mean that pastoralism as a mode of production in Africa is very often characterized by a *de facto* dependence on the hunting and gathering of wild resources, and that hunting and gathering as a mode of production is very often characterized by the exchange of livestock and other goods with neighboring herders. The archaeological implications of the fluidity inherent in pastoral subsistence systems might be at times unexpected: An archaeological site found to contain wild fauna, for example, could very well be the product of an ideologically “pastoral” society.

Other pastoralist strategies for coping with unpredictable rainfall and resultant food insecurity include increased levels of residential and logistical mobility, along with the maintenance of cooperative social relationships – incorporating the exchange of

goods such as pottery – with neighboring groups. These relationships, such as those between Samburu and Dorobo, are often framed in reference to subsistence. Many scholars, for example, would argue that Samburu maintained social relationships with Dorobo as a kind of insurance policy against disastrous stock losses. If all else failed, thinking goes, a Samburu herder could integrate himself into the Dorobo community and hunt/forage for a time as he rebuilds his herds.³⁸ This scenario certainly played out during the disastrous *mutai* of the late 19th century. But this argument, that pastoralists maintain exchange relationships as a way to maintain social ties, strikes me as somewhat tautological. These relationships are, on their most basic level, about exchange. One could argue from a materialist perspective that social relationships between pastoralists and hunter/gatherers are maintained to secure access (on both sides) to otherwise unavailable goods and resources. Consider the importance of honey to Maa-speaking pastoralists, and the forest-dwelling Dorobo groups that provide it for them. I would argue that Samburu similarly maintain a pottery-exchange relationship with Dorobo because they need the pots to survive. Or did, in the past.

I have presented ethnohistorical evidence that Dorobo hunter/gatherers in Samburu once utilized a greater range of pottery types than did their Samburu neighbors. Dorobo pottery types were typically larger and included storage pots for water, honey, and beer. There is an argument to be made, I think, that high degrees of residential mobility in the past may have prevented or deterred Samburu pastoralists from owning pots such as these. More readily portable alternatives such as skin bags and gourd

³⁸ What benefit this relationship supposedly served for Dorobo is somewhat unclear. The presumption might be that Dorobo would, if possible, seek to open lines of access to livestock. See A. Smith (1998) for a discussion of such relationships as patron/client, where hunter/gatherers are understood to be marginalized and dependent. I would not be the first to point out that hunter/gatherers might not always see their positions in such negative lights (Cronk and Dickson 2001; Kratz 1980).

containers were available for water and milk, and Samburu had little need to store or transport honey beer. Cooking pots, on the other hand, used by both Dorobo and Samburu are exactly the same in form, size, and decorative style. Hodder (1982) also pointed out striking similarities in pots and other utilitarian items owned by Dorobo and Samburu living near Kisima at the time of his research. He looked to the historical record for explanation, and described the symbiotic and non-competitive relationship that has long existed between these two groups. In such social contexts material culture is designed, Hodder argues, to reinforce sameness and encourage integration. This may be true in terms of style. An interesting point of debate, however, might be whether or not items such as pots – designed for private, household use – might be patterned stylistically differently than milking containers and items of personal adornment intended for public viewing. In terms of form, I would simply suggest that Dorobo and Samburu cooking pots are similar because both communities use them in similar ways.

This discussion brings me to my last point about the archaeological assumptions often made about pastoralist material culture as compared to the material cultures of other groups. It would be a mistake, I think, to always assume that any and all differences in household container assemblages, for example, come down to the fact that the pastoralists move around and have herds. Population sizes might differ, local ecologies might vary, and in the end social demands for certain containers might override any concerns about their utility and practicality even in mobile contexts. Although a large portion of this dissertation has been devoted to describing the functional importance of pottery to Samburu, it is also worth remembering the roles that ceremonial or medicinal purposes have played (and are playing) in the perpetuation of potting technologies throughout the

region. I also, with Hodder, acknowledge that nuanced readings of local histories are critical to understanding both the production and consumption of household goods.

9.4 The Materiality of Everyday (Pastoralist) Lives

Samburu in general are acutely aware of their somewhat precarious hold on life (Straight 2007b), and this understanding structures in many ways both their approaches to the mundanities of day-to-day life and their relationships with a spiritual world. Indeed the two are inextricable from each other. I mention this dynamic because any discussion of Samburu household material culture has to examine the ways in which subsistence on a survival level manifests itself in the materiality of Samburu life. I think, however, that reducing the artifacts of daily life in Samburu to only a kind of functional adaptivity misses a much bigger and much more interesting picture. I also think it important to consider the ways in which Samburu women conceptualize, shape, and are shaped by the material culture of their everyday lives.

Consider the ceremony known as “*ayea nkaji*,” or “bringing the house.” Many of the motions performed in this ceremony have been modified over time as Samburu have settled, yet aspects of its performance still reveal deeply-held beliefs in the connection between propitious human behavior, the necessity and power of material culture, and the survival of livestock. Samburu women must, after being married, bring the house. This expression seems to have referred, originally, to the practice of building a bride's "white house" (*nkaji naibor*) and transporting it to her husband's homestead by donkey. Some families would have performed this ceremony on the bride's wedding day, and other families might have waited a bit longer. Today, because many women have more

permanent houses built at their husband's settlement, they do not literally “bring” the nkaji naibor. Rather, at some point later, generally before the first child in the family is circumcised, a woman must “bring the house” by returning to her mother’s home and bringing back a collection of her mother’s household objects. A *sampurr*, or leather bag, must be among them, along with hides and milk containers. Donkey panniers must be brought, wooden cups or bowls if you have them, and the cow tail used to clean wooden and gourd containers. Most women would presumably already have many of these things among their own possessions, but this seems to be beside the point. The one type of object that would *never* be brought back as part of a “house” is clay pots. A woman can certainly bring a pot from her mother’s house later on, but never during this ceremony.

I have reported that household assemblages of cooking vessels throughout Samburu tend to be relatively minimalist, especially in regard to clay pots. Even households in the most settled areas of Samburu, in areas where agriculture has become the main economic base, have very few clay vessels of any type. The ceremony described above perhaps helps to illuminate one reason why. Clay vessels are intimately and inextricably tied, in Samburu systems of meaning, with the death of livestock and the subsequent preparation of foods such as bone soup. Samburu need (or needed) clay pots to survive during droughts and milk shortages, but to own any greater number of pots than absolutely necessary would be an affront. To flaunt – in any large or small way – the ownership of clay pots is to imply an imprudent readiness to slaughter one’s livestock. It is to curse one’s animals and therefore one’s self. These beliefs actively shape Samburu ways of being in the world, and structure the everyday assemblages of household goods acquired, owned, and discarded by Samburu women and men.

Most studies of materiality have thus far focused on “complex” agricultural societies and the ways in which power, prestige, religion, etc. are materialized and manifested in the archaeological record. The lack of research on materiality in ostensibly less “complex” societies, hunter/gatherers and pastoralists, perhaps reflects an assumption that behavior in those societies is driven primarily by functional ecological concerns. A lack of cultural sophistication is, I think, implied. My larger point is that the materiality of any given group must be understood in a broader ethnographic context, on its own terms: An accumulation of serving goods in a pastoralist society may or may not be about aggrandization or wealth, for example, but rather changing patterns of food preparation and consumption. My Samburu data suggest that greater attention should be paid to the ways in which some types of archaeologically-visible pastoralist material culture, such as kitchen assemblages, can reflect both an everyday (functional) dependence on – and (ideological) devotion to – livestock. Or wild plant resources, or maize, as the case may be.

9.5 Back to African Archaeology: Material Culture and Transitions to Food Production

I agree with scholars who argue that the invention or adoption of agriculture by hunter/gatherer groups must necessitate a complex reordering of both ecological and social landscapes (R. Bradley 2004; Mace 1993b). Studies of “Neolithization” in Europe and the Near East, for example, are indeed moving beyond chronological and culture-historical debates to consider the material consequences of this “long-term, incremental, and undirected process” (Goring-Morris and Belfer-Cohen 2011; see also Zeder 1994). Much less often discussed, and of equal relevance to the African archaeological record, is

the adoption of pastoralism by hunter/gatherer populations. This process must have likewise had material consequences. The Samburu ethnoarchaeological case study, I think, might inform our understanding of this issue by speaking directly to the materiality of pastoralist versus hunter/gatherer lives.

Major changes in ancient African systems of food production – including the domestication of millet in the Sahel (Manning et al. 2011), the domestication of cattle in the Sahara (Garcea 2004), and the adoption of herding by hunter/gatherers in southern Africa (Sampson 2010) – have all occurred in settings where ceramics were already in use. In the northern Sahara, for example, relatively sedentary hunter/gatherers had been producing pottery for two thousand years before they domesticated cattle. This pottery was most likely associated with delayed-return subsistence strategies, including the exploitation of aquatic resources and boiling of wild plant foods into stews and porridges (Garcea 2006). Little has been written about ways in which early domesticated cattle in Africa were utilized, but one might hypothesize that early cattle were used for carcass products such as meat, rather than milk. Residue analyses in pottery will have to answer this question one way or the other. One could easily make the argument that regardless, ceramics were critical to the success of early pastoralist systems in Africa by allowing for the predictable preparation and consumption of meat and bone soups, as well as the continued exploitation of wild plant and animal resources. The preparation of medicines and/or poisons in pots may have been important as well. Whatever the case, it seems clear that pottery was *not* an impediment to the development of increasingly mobile settlement strategies. In fact, just the opposite may have been true. In the Libyan Sahara, for example, pottery becomes increasingly abundant in pastoralist assemblages even as

societies are becoming more residentially mobile. Clay pots may have enabled the success of mobile, multi-resource pastoralism. Garcea (2005) in fact hypothesizes that during this time period clay pots may have been socially transformed from prestige items to everyday utilitarian goods.

Many of the presumed connections between mobility, subsistence, and types of material culture such as pottery have been challenged, refined, and in many cases refuted outright as archaeologists move towards more local understandings of social process and change. Barich's (1984:685) work in particular has questioned the application of the term "Neolithic Revolution" to the Saharan case: Archaeologists have observed, as pastoralism supplanted hunting and gathering, a "gradual appearance of new arrangements" rather than a blanket replacement of all existing economic and social structures. Ceramic production and use persisted relatively unchanged across the Neolithic divide, and the Samburu case may help us to understand why. Pots already in use by hunter/gatherers to process wild plant and animal resources would have remained important to the same daily practices of food preparation and consumption, even as some groups added domestic stock to their subsistence economies when climate conditions became increasingly difficult and unpredictable. Lipid residue analyses of pottery from northern Europe indeed indicate marked continuity in local economies and food processing techniques across the "Neolithic" divide (Craig et al. 2011).

Pastoralists would have no need for new ceramic forms associated exclusively with dairy production, as vessels such as skin bags, wooden containers, and woven baskets can all be used for collecting, storing, and transporting liquids including milk. Research has also shown that gourd cultivation can easily be incorporated into mobile

lifestyles without necessitating dramatic shifts in subsistence economies (Hanselka 2010). Thus the best evidence for specialized pastoralism might be container types unlikely to survive in the archaeological record. Gourds and wooden vessels, such as those found at Njoro River Cave, a Pastoral Neolithic crematorium in Kenya (Leakey and Leakey 1950), are sadly few and far between.

9.6 Final Thoughts

I have, I hope, demonstrated that ethnoarchaeology in Africa need not be limited by a focus on the primitivism that has characterized a great deal of research within the discipline thus far. I have certainly tried not to overly romanticize traditional material culture in Samburu as existing in opposition to modern encroachments from the outside world. Instead, I hope this thesis conveys my admiration for the clay pots, wooden milk containers, and grinding stones that have served as centrally important fixtures in Samburu households for so very many generations, while at the same time recognizing the ways in which these objects have, over time, transformed and been transformed by Samburu society. I also came to appreciate the opportunity I had to witness the adoption of new technologies in Samburu – the metal pots, the plastic milking jugs, the industrial grinding machines – and the processes by which older technologies are modified and sometimes replaced. If anything, this case study of Samburu containers speaks to the dynamism and flexibility that have marked pastoralist societies since herding ways of life began in the Sahara so long ago.

Archaeologists have long since quashed many doubts about the viability of pastoralist archaeology itself, demonstrating that pastoralists need not be considered

invisible in the archaeological record. We have greatly improved our abilities to detect and recover archaeological materials at even ephemeral sites, and a great deal of research is now being conducted on the global spread of both plant and animal food production. We are recognizing the role of pastoralist societies in large-scale systems of trade and exchange, and in some cases we are beginning to identify pastoralists as major players in the development of large-scale, urban societies. On an interpretive level, a great deal of research has been devoted to improving our understandings of seasonality and larger-scale landscape use, and zooarchaeological research has yielded tremendous insight into processes of animal domestication. However in Africa we have not, with few exceptions, moved “beyond bones” (Chang and Koster 1986) to include examination of other artifact classes.

This discussion has encouraged the reader to begin conceptualizing various types of pastoralist material culture, particularly ceramics and other container technologies, on their own terms. Across the continent pottery appears to have been an important part of pastoralist material-cultural repertoires, yet studies of pastoralist ceramics in the Sahara, eastern Africa, and elsewhere are still primarily typological and directed towards writing cultural history. Archaeologists would be well-served, I would argue, to consider more seriously how pottery, wooden vessels, gourds, grindstones, and the like enable pastoralist systems of production in part by allowing people to better exploit unpredictable and drought-prone environments. Pastoralism has proven to be a resilient and sustainable way of life on the African continent for close to ten thousand years. Nevertheless, pastoralist societies are increasingly under threat from a wide range of external forces, including states and development agencies, intent on encouraging people

to settle down, modernize, and start farming. Pastoralism exists as one of the *only* viable subsistence strategies for people living in unpredictable and drought-prone environments where agriculture is not an option, and its importance is only likely to grow, I think, as the effects of global warming take shape. Archaeology could hold, and should hold, a special place in the debate over pastoral relevance in the modern world (Honeychurch 2010), given its ability to illuminate the deep history of pastoralism and its impact on Africa's ecological, economic, and social landscapes across the *longue durée*.

Appendix I Pottery Catalog

All intact Samburu pots observed during the course of my research will be presented here. I will also include photographs and information about several pots made elsewhere but found in Samburu households. Eleven pots in the Ethnographic Collection of the Cultural Heritage Department at the National Museums of Kenya were made by Dorobo potters living in Samburu. These pots are shown here along with pertinent information found in the museum's card catalog. Three additional pots were discovered in the collections of the Archaeology Department at the National Museums of Kenya; these pots have no provenience information attached but all appearances suggest that they, too, were made in Samburu. The remaining twenty pots were recorded over twelve months of field research in 2009, during an extensive survey for potters and pots in all three of the current Samburu administrative districts. Only once did a woman refuse to allow the photography of her cooking pot; this occurred when my research assistant and I declined to pay her.

In Figure I-A, I show the distribution of clay pots found during research. Measurements of these pots were taken when possible with a school ruler and are recorded in Table I-A. Figure I-B shows how these measurements were taken. I then present photographs of the pots at the National Museum in Nairobi. The pots found in the field are then organized both by general geographic provenience and by type (for example, the Meru and Kikuyu pots can be found at the end). Any information about the pot gathered from interviews is then presented below the figure. For the museum pots, information found on catalog cards is included where relevant.

Figure I-A Geographic distribution of pots found in Samburu. Pots from the National Museum in Nairobi are included, and are placed on the map where collected.

* Pots 15 & 16 were recorded in Siambu, but 15 was made in Wamba and 16 was most likely made near Naibor Nkeju.

** Pot 23 was recorded in Barsaloi, but was reportedly purchased in Maralal. Otherwise provenience is unknown.

*** Pot 10 was collected for NMK at a market in Korr, but was likely made by a potter from the Ndoto Mountains.

Note that placements on map are general and readability was a concern. Pots 29-34 and 36, for example, were all recorded within a fairly short radius (<10 km) of the town center in Latakweny.

Table I-A Quantitative measurements for the pots described in this study

Pot #	Description	Approx. Volume (l) ³⁹	Rim Dia. (cm)	Rim Thick. (mm)	Height (cm)	Neck Height (cm)	Neck Width (cm)	Body Width (cm)
1	Large cooking pot from Wamba	3.8	18.2	9.4	22	6.7	14.5	18.8
2	<i>Lkunate</i> from Wamba	1.9	14.3	9.9	18.5	7	11.7	14.6
3	Largest cooking pot from Wamba	4.8	20.2	9.3	25	8.7	15	19.5
4	<i>Lkunate</i> from Naibor Nkeju	4.1	16.6	6.0	19.7	8.8	15	18
5	“Learner’s” cooking pot	2.4	15.7	7.9	15.5	5.9	12.8	15.8
6	Cracked cooking pot	4.0	17.4	6.8	20.7	8.3	15.1	18.1
7	Cooking pot w/ wire	2.4	13.9	6.0	16.8	7	12.8	15.4
8	Medicine pot (?) w/ lid	3.1	14.6	7.6	19.6	6.5	12.6	17.7
9	<i>Moti lekweshi</i>	1.4	8.8	8.4	19.8	9	9.5	13.9
10	Rendille pot	6.2	19.7	6	24.7	11	17.2	20
11, 12, 13, 14	Pots from the ethnographic displays and archaeology collections at NMK, no measurements taken							
15	Wamba pot in Siambu	3.1	19	10	25		16	20
16	Smaller Wamba pot in Siambu	1.6	13.7	5	14	3.5	12.8	14
17	Naibor Nkeju <i>lkunate</i> , one ear	3.8	15.1	5	21.1	7.6	14.8	18.0
18	Naibor Nkeju <i>lkunate</i>	3.5	15.2	6	19	7.9	14.5	17.4
19	Camel Derby <i>lkunate</i> , no measurements taken							
20	Large cooking pot, South Horr	5.1	15.6	0.4	25.9	8.3	15	19
21	Large cooking pot, Mt. Ng’iro	6.8	17.4	6	31	10.8	15.2	22
22	Large cooking pot, Ng’urunit, no measurements taken							
23	Barsaloi cooking pot	2.7	18	15	24.2	5.8	13.5	18

³⁹ Volumes reported here should be considered very approximate, as they were calculated from rough measurements obtained in the field. Because all of these pots are similar in form, I determined the volume of each using the same formula: The shape of the body was considered a sphere ($V = 4/3\pi r^2$), where r is the radius of body width minus rim/wall thicknesses, and the neck was considered a truncated cone ($V = \pi h/3(r_1^2 + r_1 r_2 + r_2^2)$), where r_1 is the radius of the cone’s base as measured using orifice diameters, r_2 is the radius of the cone’s truncation minus rim/wall thicknesses, and h is the height of the neck. The volumes for each constituent part were then added together.

24	Wamba potter's pot	4.0	15.9	9	23	7	14.5	19.4
25	Wamba Lekonono <i>lkunate</i>	4.1	17.5	6	25	6.9	14.7	18.7
26	Wamba Lekonono large pot	3.9	16	9	25	7.2	14.9	19
27	<i>Lkunate</i> in Maralal	1.4	12	10	18	4.5	10	14.5
28	Water pot in Maralal	4.4	18	10	30	4	15.5	21
29	Hh 109 cooking pot	2.4	14	9	23	7	14	16
30	Hh 106 cooking pot	3.3	16	8	23	8	15	17
31	Hh 121 cooking pot	4.5	16	10	29	8	16	20
32	Hh 125 cooking pot	2.7	14	7	24	5	15	17
33	Hh124 cooking pot	2.7	14	8	25	6	14	17
34	Hanging cooking pot, no measurements taken							
35	“Meru” pot, Naibor Nkeju							
36	“Meru” pot, lowlands

Figure I-B Diagram explaining quantitative measurements taken on pots
(drawing from J. Brown 1989b)

Figure I-C Pot 1

Collection Date: 21 March 1973
Collected by E. J. Brown at
Margwe, Wamba

Ethnographic Collection,
Cultural Heritage Department at
the National Museums of Kenya

Accession Number: 1973 1a

This pot was made by Rhoda Lenaimado in Wamba, and was one of the bigger Samburu pots found at the museum. According to Rhoda, when Jean Brown collected the pot in the seventies she wanted this one to be brown. Samburu pots are, of course, traditionally black, so for this pot the smudging stage of production was intentionally skipped. When showed a picture of this pot, Mpashie Lesorogol (April 6, 2009) explained that it was a big pot for a big family, like her son's (my research assistant). His household has eight people, six children and two adults. Mpashie later clarified her statement, saying that it would be big enough for the children, at least, but maybe not big enough for everyone including adults.

Figure I-D Pot 2

Collection Date: 21 March 1973
Collected by E. J. Brown at
Margwe, Wamba

Ethnographic Collection,
Cultural Heritage Department at
the National Museums of Kenya

Accession Number: 1973 1b

This small pot from Wamba (potter unknown) is a typical *Ikunate*, suitable for “a younger woman, with three children and a husband.”

Figure I-E Pot 3

No provenience information, tag reads "For Kitale Museum"

Ethnographic Collection,
Cultural Heritage Department at the
National Museums of Kenya

Rhoda Lenaimado's daughter recognized this pot immediately, saying that her mother made it. Rhoda, however, disagrees. The other Suiei potter still living in Wamba, Soloina Lempaile, asserts that the pot was in fact made by another woman, who lives on the other side of the Wamba hills, and who is now quite elderly and blind. We were never able to locate her and interview her for more information.

This pot is the largest of all the pots from Wamba. It is big enough for a whole goat, I was told, and would have been used by a very large family. This pot was considered by everyone who saw its picture to be quite nice.

Figure I-F Pot 4

Collection Date:
13 November 1965
Collected at Maralal

Ethnographic Collection,
Cultural Heritage Department at
the National Museums of Kenya

Accession Number: 1965 33

On catalog card: Pot for cooking
mainly meat. Made by the
Samburu but little made nowadays
and rather scarce. From near
Maralal.

This pot was most likely made by a Loliin potter near Kisima. This pot is quite typical of those made by potters in this community, and all women in the area who were shown this picture commented upon the very nice form of the pot, with its straight neck, round belly, and proper ears. The decoration was also said to be good. The pot does not appear to have been used, and was likely smeared with sheep brains instead of the more typical cow dung after firing. Vertical scrape marks on the interior surface of the neck are unusual, but no explanation could be found as to why they were not smoothed out during the manufacturing process.

Figure I-G Pot 5

Collection Date: 25 December 1967
 Collected by E. J. Brown at North Maralal
 Price: 4/-

Ethnographic Collection,
 Cultural Heritage Department at the National
 Museums of Kenya

Accession Number: 1967 262

On catalog card: Pot used mostly for cooking meat.
 Made by the Dorobo on the Loroghi Plateau.

This small pot, possibly from somewhere near Maralal, looks to some like a sufuria. One Loliin elder suggested it may have been used to cook vegetables.

Note: The band around the neck is called a *maitai*, which refers to anything that goes around the neck, such as a cowbell. This particular type of applied-clay band ("*maitai nekima*") was apparently not uncommon on pots (although no other examples were seen), and was designed to prevent cracking during firing or when placed on a hearth fire. Figure 1.7 shows a metal wire around the neck of the pot; one elder suggested that a clay *maitai* should have been applied over this wire before firing.

Figure I-H Pot 6

Collection Date: 25 December 1967
Collected by E. J. Brown at North Maralal
Price: 5/-

Ethnographic Collection,
Cultural Heritage Department at the National
Museums of Kenya

Accession Number: 1967 264

On catalog card: Pot made by Dorobo of Loroghi
Plateau.

The white residue on the exterior surface of this pot is somewhat unusual. This could have been caused by the pot overflowing, or somehow ashes getting high up on the shoulders and neck. Cracks on the bottom of the pot may have been repaired with sheep brains. In terms of provenience, its shape suggests that it was made by a Loliin potter near Kisima. Women of that area recognize this pot as having the best form of all.

Figure I-I Pot 7

Collection Date: 25 December 1967

Collected by E. J. Brown at North Maralal

Price: 5/-

Ethnographic Collection,
Cultural Heritage Department at
the National Museums of Kenya
Accession Number: 1967 263

On catalog card: Pot made by
Dorobo of Loroghi Plateau.

This pot was likely made by a Loliin potter near Kisima. One notable feature is the metal wire around its neck; according to one elder this is a *maitai nekima* used to prevent cracking (see also Figure I-G). She noted, however, that a clay band should have been applied over the wire before firing. The applied designs on the pot have been heavily eroded; many comments were made about this pot's apparent lack of appropriate decoration.

Figure I-J Pot 8

Collection Date: 22 March 1973

Collected by E. J. Brown at Margwe, Wamba

Price: 6/- gift from Mrs. E. L. Ayers

Ethnographic Collection,

Cultural Heritage Department at the National Museums of Kenya

Accession Number: 1973 2

Object: Medicine Pot

Tribe: Samburu Dorobo

When Made: present

Vernacular Names: Moti Loldewai

On catalog card: Small round-bottomed two handled pot with handled lid. Pots of this size are used by the Warges Dorobo (and Samburu I think?) for medicine. Only medicine pots have lids and lids are a fairly recent introduction. Made by Dorobo potter. For making details see 1973 230 [Note: This card is missing from the catalog.].

[NOTE: This is the information card that was presented to me at the National Museum for this pot with this lid. It appears as if the cards and/or the pots in the collection have been mixed up: The card references a two-handled pot, while this pot clearly does not have handles. I could not find a small, two-handled pot in the ethnographic collections that matched this card's description. The handle-less pot seen here is probably the same pot illustrated in J. Brown 1989b.]

Two different potters, Lilian Leorle from near Mt. Ngiri, and Rhoda Lenaimado from Wamba, both claim to have made this pot. Rhoda says that she made it to be a water pot. Only one other water pot (Figure I-Z) was found during this study. No potters or any other Samburu interviewed for this study had ever heard of the term “*moti loldewai*.” Medicine pots are typically just *lkunate* or smaller *moti* that are used on occasion for cooking medicines; no formal distinction between these types of pots is generally made.

Figure I-K Pot 9

Collection Date: 22 March 1973
Collected by E. J. Brown at Margwe, Wamba
Price: 5/- gift from Mrs. E. L. Ayers

Ethnographic Collection,
Cultural Heritage Department at the National Museums of Kenya

Accession Number: 1973 3

Object: Storage pot
Tribe: Samburu Dorobo (Warges)
When Made: Present
Vernacular Names: Moti Legweshi

On catalog card: Small jar with tall neck and no handles. Made by Dorobo woman potter and used by Dorobo and Samburu for storing meat and fat for the dry season when food is scarce. Such pots are never made with handles. For pot making see 1973 230 [Note: This card is missing from the catalog.].

This pot is a *moti lekwishi*. It was designed to be shaped like a carved wooden milk container, and would have a leather lid and leather straps with which to hang it at home over the head of the husband's bed. It is for storing fried meat and sometimes fat. Loliin elders from near Kisima say that their community used this type of pot (or something similar) primarily for storing honey. Note that this type of pot is not made black, nor does it have ears. The example shown here was the only *moti lekweshi* found during the course of this research.

Figure I-L Pot 10

Collection Date: 14 August 1978
Collected by Colvin at Korr, North Eastern
Price: 22/50 each

Ethnographic Collection,
Cultural Heritage Department at the National
Museums of Kenya

Accession Number: 1978 55

On catalog card:
Object: Cooking Pot
Tribe: Rendille
When Made: 1976
Vernacular Names: Diri

After pouring water into the soil a woman shapes a large piece of this by hollowing out the entire, the end product of this is a clay Diri, which can be used for any mean for cooking directly on a flame or for serving milk. This clay which comes from near Mt. sclopes [sic] after a period of usage turns darker from the meat. This particualr [sic] diri has two handles and has a rectangular design on its outsides. It is a very deep pot which can be used by anyone. The dire is stored in a wicker support (injel) which is made from twings [sic] tied with leather strips for securing purposes.

This pot is included in this catalog despite its provenience presumably being Rendille. When pictures of this pot were shown to several elder Samburu near South Horr, however, they claimed that the pot was just like theirs, and informed me that a Samburu potter

from that area would take pots to Korr for sale at the market. These pots were frequently purchased by Rendille, who carried them on camels and would use them for circumcision ceremonies.

Figure I-M Pot 11

This pot was seen on display in the ethnographic galleries at the Nairobi National Museum. There was no associated description or catalog card, but it appears to be a Samburu pot from somewhere in the Mt. Ng'iro area.

Figure I-N Pots 12 (left), 13 (center), 14 (right)

These three pots were found in the collections of the Archaeology Department, National Museums of Kenya. There is no associated provenience information, although the two on the left at least appear very similar to the “Rendille” pot in the Ethnography Department (Figure I-L). Based upon their form and decoration I assume that these are Samburu pots made near Mt. Ng’iro, possibly intended for sale to Rendille. Note that the two pots on the left have never been used on a fire and are thus still thoroughly covered in dung. The pot on the right is heavily worn and cracked, although from its shape and decoration again appears to have been by a Samburu potter, possibly from the Mt. Ng’iro area.

Figure I-O Pot 15

This pot belongs to Elizabeth Langapati, b. ~1963, who was interviewed on 12 Feb 2009 in Siambu. This is the only pot she has ever owned. She bought it in Wamba sometime after 1990 for 25/-. She was there on other business, but saw people selling pots and decided to buy one. She transported it by car from Wamba to Siambu, but today stores it and carries it around for short distances in a rice bag. She also owns one of the cast iron cooking pots that are said to be shaped like these clay pots. She bought this pot to cook food in it, primarily meat and blood. She used to use it to cook maize, but would never have used it to cook uji or ugali. How often she used it depended upon the availability of meat and maize at the time. She has also taken it to be used at circumcision ceremonies, and on the occasions when babies are born. In recent years she has lent the pot to her daughter-in-law, who then lent it to a woman whose doctor told her to find a clay pot in which to cook herbal medicines.

Figure I-P Pot 16

This pot belongs to a woman, ~60 years of age, in Siambu. She borrowed this *lkunate* from her niece, who lives near Naibor Nkeju, three years ago. The owner knows the pot was made by Dorobo, but she does not know the individual potter or when it was made. She had owned another pot before this one but it broke, so she borrowed this one because she knew that she would use it. She holds it by the ears to take it out of the fire, and stores it in a rice bag when not in use. Other women in Siambu borrow this pot to boil medicines, often for their children. It is also used to boil *longososi*, which is an herbal medicine taken by pregnant mothers. It is boiled in water with sheep/goat intestines. Otherwise the pot is only used to cook meat, although sometimes medicines are mixed in with the soup. She would never boil milk in this pot, although sometimes she also adds milk to soup.

Figure I-Q Pots 17 (left) and 18 (right)

The pot on the left belongs to a woman from the Loliin community. It was made just after 1990 by Mpejo Lepilale. The owner of the pot went and brought clay for Mpejo, and so she did not have to pay for the pot. Mpejo made a pot for herself from the rest of the clay. This *lkunate* is still in use even though one ear has broken off. The extra band of clay around the rim is said to make the rim stronger and for decorative purposes. It is characteristic of pots made by potters from this community. The pot on the right was probably also made by Mpejo, and belongs to a Samburu woman who lives very closely nearby. Heavy residue on the interior surface seems to be from cooking maize.

Figure I-R Pot 19

This *lkunate* was seen at the 2009 Maralal International Camel Derby. As an attraction for tourists the Samburu community in the area sets up life-size models of “traditional” Samburu homes. These houses are little more than shells, and so Samburu women set up cooking hearths just outside. I asked them about pottery, and one woman rushed home to bring back this pot. It was most likely made by Mpejo, as it is shaped and decorated exactly like the two pots in Figure I-Q. Note the straight neck, the round handles, the extra band of clay around the rim, and the distinctive pattern of embossed decorations on the neck and shoulders.

Figure I-S Pot 20

This pot is owned by a Samburu woman in Kurunga, near South Horr. It was made by a potter in Tuum, on the other side of a nearby hill, sometime around 1989. It was bought for 300/- which at that time was extremely expensive. Today a pot from this region would be at least 800/-, or one could get a pot in exchange for a sheep. Turkana and Rendille, from up to 100 kilometers away, come here to buy pots. I was repeatedly told by Samburu in this area that Dorobo do not make pots, instead anyone who has that special knowledge can produce them. Not many people make pots, but those who do have livestock. This particular pot has been used for ceremonies, including circumcision ceremonies and weddings, and to cook meat.

Figure I-T Pot 21

This pot is owned by Lilian Leorle, a potter from near Mt. Ngiro. She was interviewed on 29 April 2009 about this pot and other pots she has made during her career. Her grandmother made pots, and she learned from simply observing her and others. She has made typical Samburu pots for cooking, as well as flower pots, incense burners, and pots for storing water. She still makes pots, she says, but since the drought is so severe people have many other things to do to keep them busy. Demand is way down. She showed me an old photograph of her with a water pot she had made for a missionary. It looks like a big Kikuyu pot with no handles and has a lid. It was made to store water within his house. Her cooking pots, like the one shown, all have handles. She scraped off at least a quarter inch of sooty residue from the neck of the pot to show me its decoration, which by this point had been mostly obscured.

Figure I-U Pot 22

This pot belongs to a *Lekonono* woman near Ng'urunit. It was shown to me during a group interview that took place on 30 April 2009 with Lekonono elders about iron smelting and blacksmithing. This pot, the owner said, was bought a long time ago, around 1995, and she has had four children since. It was made by a potter living in this area. She has only used it for meat. The Lekonono elders explained that they never had any specific use for pots related to their profession; instead they seem to use pots as any other Samburu community might. Lekonono blacksmiths do marry potters occasionally, but this is not common practice. Many Samburu are under the impression that Lekonono sometimes make their own pots, but no one from this Lekonono group could corroborate that idea.

Figure I-V Pot 23

This pot belongs to a younger woman living near Barsaloi. It is an *lkunate*, and it was bought for this woman by her brother in Maralal. She explains that she used to live in Latakweny, and her father there used to buy pots from Lekonono blacksmiths. She thinks that this pot is likewise Lekonono but made by a group living near Maralal. It does have an uncommon shape and a very unusual decorative pattern of tiny dots in vertical bands on the neck. I was unable to locate anyone who remembered Lekonono potters living near Maralal, but I cannot rule out the possibility that this story is correct. Her pot is still used quite often for cooking meat and beans. It is generally hung inside of the house, but anyone is welcome to come and borrow it.

Figure I-W Pot 24

This pot belongs to Rhoda Lenaimado, a Suiei potter from Wamba who was interviewed on 13 April 2009. She made this pot a long time ago, she says, and it has often been borrowed by her daughter for ceremonies. She uses it for meat and maize, but not now for boiling ghee. She notes that long ago people did used to boil ghee when milk was abundant, when people were few and they had lots of livestock. During her lifetime, she notes, she has always had livestock. This same potter also made several of the pots in the ethnographic collections at the National Museums of Kenya. I believe it is her picture in Pavitt 1991, page 205.

Figure I-X Pots 25 (left) and 26 (right)

Several years ago in Wamba it happened that two or three enterprising women from the *lekonono* blacksmithing caste took to making pots as a way to generate income, much to the apparent consternation of the Suiei potters who until then had a corner on the market. The pot on the left was gotten last year from another member of the Lekonono community who had decided to try her hand at potting to bring in some extra income. The pot on the right was also made by a wife of a blacksmith. Both pots are somewhat irregular at the top, with thicker rims and wider rim openings than are typically seen on other Wamba pots. Lekonono pots such as these are sold for either 500/- or given in exchange for a goat. These pots are used to boil maize and meat, and in the past *lkunate* such as the one on the left were used to boil tea.

Figure I-Y Pot 27

This pot belongs to Halinio Samburu, a Turkana woman who is married to a Somali but lives in Maralal. She was interviewed on 2 June 2009 at her home in town. She purchased the pot in Wamba years ago and does not know of any potters elsewhere in the Samburu districts. She notes that bigger pots were made as well, and she has had many of these over the years. Her daughter is currently borrowing her big pots. This small pot is an lkunate, which she uses for cooking *mboga* (vegetables), *githeri* (maize and beans), and boiled meat. It is also used to boil traditional medicines.

Figure I-Z Pot 28

This pot also belongs to Halinio Samburu in Maralal. This pot is a water storage pot. She thinks it was made by potters in Wamba, many years ago. It is designed to keep water cool. Because it is not a cooking pot, it was left brown in color during the manufacturing process. It had two very small handles which have been broken off by children. The handles appear to have been so small that, given the weight of the pot, they must have been entirely non-functional. It has a decorative band of small circular impressions approximately five centimeters below the neck. Besides the possible water pot in Figure I-J, no other examples of this form were seen. Note its similarity in form to the Meru (?) pot in Figure I-DD.

Figure I-AA Pots 29 (left), 30 (center), and 31 (right)

All of the pots on the following three pages are owned by Samburu women living in the lowlands near Latakweny. They were all made by the same potter from the Ndoto Mountains, who comes down to this area with pots for sale just before major circumcision ceremonies. We were unable to locate this potter, but her pots are quite distinctive in their form and decoration. They are all approximately the same size, and have distinctive forms and decorations.

Figure I-BB Pots 32 (left) and 33 (right)

Figure I-CC Pot 34

A common method of storing pots in the lowlands is shown here. A rope or cloth is tied to the handles and the pot is then suspended from the interior roof of the house. Note that this house was one of the more expeditious and temporary, with curved roof poles covered with tarps, mats, and skins. A donkey panneer can be seen in the foreground.

Figure I-DD Pot 35

The pot on the right belongs to the woman pictured here, a member of the Loliin community on the Lorroki Plateau. She likewise says that this pot is a Meru pot brought from Nairobi. There have been no studies done, to my knowledge, on Meru pottery, however, and note the dissimilarities between the pot on the left and the pot on the right. This pot is very similar to mass-produced Kikuyu pots sold in Maralal and across the country, and my suspicion is that it may be one. She uses this pot for meat and maize, and remembers when small stock were exchanged with the Meru for maize and beans.

Figure I-EE Pot 36

The pot on the left is owned by a woman in the lowlands as well. It is a Meru pot, she thinks, that was brought from Nairobi sometime around twenty years ago. It has no handles and no other identifiable decoration. Its round belly otherwise makes it suitable for Samburu cooking. She noted that this kind of pots, with no ears, are used by moran only, and it is said to hold almost one entire goat. It is carried and stored in a rice bag.

Appendix II Household Structured Interview Forms

HOUSEHOLD SURVEYS – LOWLANDS, AUGUST 2009

HH ID: _____
 Household location: _____
 Interviewer (s): _____ Date: _____

Head of household name _____ Male/Female (circle) _____
 If Male, # of Wives _____ # other households in boma _____

Interviewee _____
 Age _____ Male/Female (circle) Relationship to head _____

OTHER HOUSEHOLD OCCUPANTS:

(note: do not count married sons and daughters living away from home)

A:

Children:	Other Dependents:	
# Age 0-5 _____	# Adults (#M F) _____	
# Age 6-10 _____	# Children (#M F) _____	
# Age 11-15 _____	Notes:	
# Age >15 _____		

LIVESTOCK HOLDINGS:

# of Lactating Cows _____	# of liters of milk per day _____
# of Other Cattle:	
Males _____	
Adult Females _____	
Heifers _____	
Total Calves _____	
# of Lactating Shoats _____	# of liters of milk per day _____
# of Other Shoats _____	
# of Lactating Camels _____	# of liters of milk per day _____
# of Other Camels:	
Males _____	
Adult Females _____	
Heifers _____	
Total Calves _____	
# of Donkeys _____	

MOBILITY:

How many years have you lived in this particular settlement? _____

Where did you live before you lived in this settlement? _____

How long did you stay in that settlement? _____

How many kilometers away is that? _____

Where did you live before that? _____

How long did you stay there? _____

How many kilometers away was it from your last settlement? _____

How many years have you been married? _____

How many times have you moved your settlement since you've been married? _____

Mobility in the Past (when houses were moved along with grazing animals):

Seasons	Normal/Good Year House location	How often moved?	Bad/Drought Year House location	How often moved?

Other mobility notes:

How long has it been since houses started becoming more permanent in this area?
Why?

What type of house is this?

INCOME

Livestock Sales: Average per month

Type	# Sold	Price per animal
Cattle		
Shoats		
Camels		
Donkeys		

Other income: (ex. Profits from a duka, relatives in Nairobi)

Source: _____

Average Amount per Week: _____ or

Average Amount per Month _____

Agriculture:

Crops	Grown since when?	Acreage	Amount Harvested	% sold/eaten	Price per unit

PLANT USE

Ask interviewee to remember types of plants that they used in the past:

Plant Name	Uses	Still Used ?	Preparation	Pot Used? & Size	Grind-stone Used?	Seasons Found / Grows where?	Seasons & Occasions Used / How often?
Food:							
Medicines:							
Herbs:							

OTHER FOODS: Current Usage

Type of Food	Reasons for Use	Preparation	Type of Pot / Sufuria Used	Seasons & Occasions Used	How Often?
Tea					
Boiled Meat / Bone Soup					
Fried Meat					
Roasted Meat					
Ghee					
Boiled / Dried Milk					
Fermented Milk					
Fresh Milk					
Ugali					
Beans/Maize					
Cabbage / Sukuma Wiki					
Beer / Wine					
Other:					
Other:					

CONTAINER INVENTORY					
Type of Container	Size	Total #	Type of Container	Size	Total #
SUFURIAS:			CALABASHES:		
CUPS:					
PLATES:					
OTHER KITCHEN:			OTHER CONTAINERS:		

POTS

Do you currently own a clay pot?

If yes, where did you get it from?

When?

Why?

Rim Diameter:

Rim Thickness:

Height:

Neck Height:

Neck Width:

Body Width:

In the Past –

Where did you and/or your mother buy pots from?

How far away is that? How did you get there? How long would it take?

Did you make special trips to get pots?

How often would you buy pots? How many would you buy at a time?

How many would you have in your house at a time?

Other notes about pots:

Appendix III Ethnobotanical Data

Ecological studies of plant use and management in Samburu have tended to focus on grassland vegetation, particularly as related to the grazing of livestock. Exhaustive descriptions of plants eaten by cattle, sheep, goats, camels, and donkeys can be found in numerous publications such as the Rangeland Management Handbook for Samburu District (Shaabani et al. 1992) and in miscellaneous reports compiled by NGOs and government offices. An extensive list of Samburu names for plants can likewise be found in Maundu and Tegnäs's *Useful Trees and Shrubs for Kenya* (2005). There is no way to overstate the importance of such studies that describe and analyze Samburu management of grazing lands, particularly as maintaining large herds in the region is becoming more difficult in the face of a growing population, an increasingly erratic climate, and evolving government and local policies towards land tenure and grazing rights (Lesorogol 2003, 2008). Relatively few studies, however, have focused on the importance of plants to Samburu in contexts other than livestock production. That being said, botanists have shown some recent interest in collecting and documenting plant species known and used in various ways by Samburu and other eastern African pastoralists (Brenzinger et al. 2005; Bussmann 2006; Bussmann et al. 2006; Nanyingi et al. 2008). This body of ethnobotanical data builds on Heine et al.'s (1988) extensive catalog of Samburu plant names, botanical identifications, and ethnographic uses gathered from fieldwork primarily in the lowlands. Their main interest lies in linguistics, and to that end they present a detailed discussion of the Samburu taxonomic system. I was more interested in collecting data on the cultural and economic importance of plants used as foods, medicines, and herbs. Table III-A is a compendium of previous ethnobotanical research, and lists previously-reported botanical identifications for all plants named during survey. This table should not be considered a compilation of "correct" and "scientific" identifications, then, but rather a point of reference that might provide insight. Survey data from each of the study locations are presented in Tables III-B through III-H.

Table III-A Samburu plants used for food, medicines, and as herbs: Botanical classifications⁴⁰

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
irri	irrin	✓			<i>Grewia</i>	<i>similis</i> K. Schum. <i>tembensis</i> Fresen.	MALVACEAE	4 1, 4
labaai	labaa		✓		<i>Bidens</i>	<i>pilosa</i> var. <i>minor</i> (Blume) Sherff	ASTERACEAE	4
					<i>Psiadia</i>	<i>arabica</i> Jaub. & Spach <i>punctulata</i> (DC.) Vatke	ASTERACEAE	3, 4 1, 4, 5
laing'udai	laing'uda	✓					ASCLEPIADACEAE	4
laishimi	laishimin				<i>Commiphora</i>	<i>africana</i> (A. Rich.) Engl.	BURSERACEAE	4 (<i>see pp. 17-19</i>)
laitipai	laitipa	✓			<i>Grewia</i>	<i>tenax</i> (Forssk.) Fiori	MALVACEAE	4
lakirding'ai	lakirding'a		✓	✓	<i>Croton</i>	<i>dichogamus</i> Pax	EUPHORBIACEAE	2, 3, 4
lamai	lama	✓	✓	✓	<i>Ximenia</i>	<i>caffra</i> Sond.	XIMENIACEAE	3, 4
lamalogi	lamalog		✓		<i>Maerua</i>	<i>angolensis</i> DC. <i>oblongifolia</i> (Forssk.) A. Rich.	CAPPARACEAE	4 4
lamuriai	lamuria	✓	✓	✓	<i>Carissa</i>	<i>bispinosa</i> (L.) Desf. ex Brenan <i>edulis</i> (Forssk.) Vahl	APOCYNACEAE	1 2 (<i>lamuriei</i>), 4 (<i>also lamuriei</i>), 5
lapiroi	lapiro	✓		✓				
larashi	larash	✓			<i>Mucuna</i>	<i>gigantea</i> (Willd.) DC.	FABACEAE	4 (<i>larrashi</i>)

⁴⁰ Thirty-eight voucher specimens were collected for the East African Herbarium at the National Museums of Kenya. Collection was done on an opportunistic basis in the Kirisia Hills of the Lorroki Plateau, in their foothills, and on the open plains nearby; given that very few plants were still alive and flowering during the drought we restricted collection of botanical samples to those plants that we did in fact find either flowering or bearing seeds. I recognize that this methodology did not facilitate the identification and discussion of rare or lesser-known species, as was accomplished by Bussmann (2006). Given the overall research objectives of this project as an ethnoarchaeological study focused on the procurement, processing, and consumption of common plant resources, however, this was not deemed a priority. Note that this table reflects research conducted in a wide variety of geographic/ecological settings, which may at least partially explain the multiple identifications reported for many plants. Bussman worked near Mt. Ng'iro, Heine et al. worked in the lowlands, etc.

⁴¹ 1 = Voucher specimens collected for the East African Herbarium by the author, 2 = Bussmann 2006, 3 = Fratkin 1996, 4 = Heine et al. 1988, 5 = Nanyingi et al. 2008. Entries are alphabetized first by family name, then genus and species. Scientific names reported by previous authors have been checked in the TROPICOS database (www.tropicos.org) and updated to reflect the most current classifications. Special thanks to Dr. Rainer Bussman at the Missouri Botanical Garden for assistance with this table.

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
					<i>Calodendrum</i>	<i>capense</i> Thunb.	RUTACEAE	4 (<i>larrashi</i>)
larudenyai	larudenyai			✓	<i>Odontella</i>	<i>fischeri</i> (Engl.) Balle	LORANTHACEAE	4 (<i>larrudanyai</i>), 5 (<i>larrudenyai</i>)
					<i>Viscum</i>	<i>tuberculatum</i> A. Rich.	SANTALACEAE	5 (<i>larrudenyai</i>)
lasapukoi			✓	✓				
lasaramai	lasaramai		✓		<i>Pistacia</i>	<i>aethiopica</i> Kokwaro	ANACARDIACEAE	4
					<i>Harrisonia</i>	<i>abyssinica</i> Oliv.	RUTACEAE	3 (<i>lasaremai</i>), 4, 5
latakweny			✓					
latupusha		✓						
lberetiai	lberetia	✓						
lbukoi	lbukoi		✓	✓	<i>Terminalia</i>	<i>brownii</i> Fresen.	COMBRETACEAE	4, 5
					<i>Momordica</i>	<i>spinosa</i> Chiov	CUCURBITACEAE	3, 4
lchakuai	lchakua			✓	<i>Acacia</i>	<i>etbaica</i> Schweinf. subsp. <i>platycarpa</i> Brenan	FABACEAE	4 (<i>ljakwai</i> , <i>lchakwai</i>)
lcheni ng'iro	lcheni ng'iro		✓		<i>Commiphora</i>	<i>africana</i> (A. Rich.) Engl.	BURSERACEAE	3, 4 (<i>lchani ng'iro</i>)
lching'ei	lching'e	✓	✓	✓	<i>Euclea</i>	<i>divinorum</i> Hiern <i>schimperii</i> Dandy	EBENACEAE	1, 3, 4, 5 4
ldalampoi	ldalampoi		✓		<i>Entada</i>	<i>leptostachya</i> Harms	FABACEAE	3, 4
ldepe	ldepe		✓	✓	<i>Acacia</i>	<i>nubica</i> Benth.	FABACEAE	3, 4
ledat	ledat		✓		<i>Rhynchosia</i>	<i>?elegans</i> A. Rich.	FABACEAE	1
					<i>Trimeria</i>	<i>grandifolia</i> (Hochst.) Warb. ssp. <i>tropica</i> Sleumer	SALICACEAE	2, 4
					<i>Ximenia</i>	<i>caffra</i> Sond.	XIMENIACEAE	5
lekumojino	lekumojik	✓			<i>Asplenium</i>	<i>loxoscapoides</i> Baker	ASPLENIACEAE	4 (<i>lekimojik</i>)
lekurruki	lekurruki	✓			<i>Pittosporum</i>	<i>viridiflorum</i> Sims	PITTOSPORACEAE	4
					<i>Pavetta</i>	<i>gardeniifolia</i> Hochst. ex A. Rich.	RUBIACEAE	4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
					<i>Psychotria</i>	<i>kirkii</i> Hiern	RUBIACEAE	4
lambaie nabo	lambaie nabo			✓				
leparamunyo	leparamunyo		✓	✓	<i>Toddalia</i>	<i>asiatica</i> (L.) Lam.	RUTACEAE	3 (<i>lparamunyo</i>), 4 (<i>also laparmunyo</i>)
lerai	lera		✓	✓	<i>Acacia</i>	<i>hockii</i> De Wild. <i>seyal</i> Delile <i>xanthophloea</i> Benth.	FABACEAE	3, 4 4 4
leronkon	leronkon	✓			<i>Microchloa</i>	<i>kunthii</i> Desv.	POACEAE	4
leserimende	leserimendeni			✓				
lesuruash	lesuruash	✓	✓					
letakwai	letakwai		✓					
lgilai/ng'ilai	lgila/ng'ila	✓	✓		<i>Teclea</i>	<i>nobilis</i> Delile <i>simplicifolia</i> (Engl.) I. Verd.	RUTACEAE	2 (<i>lgelai</i>), 4 1, 2 (<i>lgelai</i>), 4, 5 (<i>lgelai</i>)
lgiriai	lgiria		✓		<i>Lawsonia</i>	<i>inermis</i> L.	LYTHRACEAE	4 (<i>also lngiriai</i>)
lgisi	lgisi	✓	✓					
lgomi	lgom	✓			<i>Canthium</i>	<i>lactescens</i> Hiern	RUBIACEAE	4
lkalkaloi	lkalkalo	✓			<i>Grewia</i>	<i>bicolor</i> Juss.	MALVACEAE	4
lkaukawa	lkaukawa		✓	✓	<i>Oxyanthus</i>	<i>speciosus</i> DC.	RUBIACEAE	4
lkiloriti	lkilor/lkilorit	✓	✓	✓	<i>Acacia</i>	<i>nilotica</i> (L.) Willd. ex Delile <i>nilotica</i> subsp. <i>subalata</i> (Vatke) Brenan	FABACEAE	3 4
lkinoi	lkino	✓			<i>Lannea</i>	<i>alata</i> (Engl.) Engl.	ANACARDIACEAE	3, 4
lkinyil	lkinyil		✓	✓	<i>Ehretia</i>	<i>buxifolia</i> Roxb.	BORAGINACEAE	5 (<i>lkinyil</i>)
					<i>Rhamnus</i>	<i>prinoides</i> L'Hér.	RHAMNACEAE	2, 3, 4
lkirenyi	lkirenyi		✓					
lkiriantus	lkiriantus		✓		<i>Plumbago</i>	<i>dawei</i> Rolfe <i>zeylanica</i> L.	PLUMBAGINACEAE	2 3, 4
lkisoyiai	lkisoyia	✓			<i>Ipomoea</i>	<i>wightii</i> (Wall.) Choisy	CONVULVULACEAE	4 (<i>lkisoyyai</i>)
					<i>Vigna</i>	<i>membranacea</i> A. Rich.	FABACEAE	4 (<i>lkisoyyai</i>)
lkitagesi	lkitagesi			✓	<i>Indigofera</i>	<i>spinosa</i> Forssk.	FABACEAE	4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
lkitalasua	lkitalasua		✓	✓	<i>Myrica</i>	<i>salicifolia</i> Hochst. ex A. Rich.	MYRICACEAE	3 (<i>lkitalaswa</i>), 4 (<i>lkitalaswa</i>)
lkitegerat			✓					
lkitinti	lkitinti	✓						
lkormosiyoi	lkormosiyio	✓			<i>Canthium</i>	<i>lactescens</i> Hiern	RUBIACEAE	4 (<i>lkormosyoi</i> , <i>lkoromosyei</i>)
					<i>Vangueria</i>	<i>linearisepala</i> K. Schum.	RUBIACEAE	4 (<i>lkormosyoi</i> , <i>lkoromosyei</i>)
						<i>apiculata</i> K. Schum.		4 (<i>lkormosyoi</i> , <i>lkoromosyei</i>)
lkujita ongu	lkujita ongu		✓		<i>Enteropogon</i>	<i>macrostachyus</i> (Hochst. ex A. Rich.)	POACEAE	5 (<i>lkujita-ongo</i>)
lkujuk	lkujuk		✓					
lkukulai	lkukula		✓	✓	<i>Rhamnus</i>	<i>staddo</i> A. Rich.	RHAMNACEAE	2, 3, 4, 5
lmakutikuti	lmakutikut		✓	✓	<i>Clerodendrum</i>	<i>myricoides</i> (Hochst.) R. Br. ex Vatke	LAMIACEAE	2 (<i>lmakutukuti</i>), 3 (<i>lmakutukuti</i>), 4 (<i>lmakutukuti</i>), 5
lmanmani	lmanman		✓		<i>Caucanthus</i>	<i>auriculatus</i> Nied.	MALPIGHIACEAE	4 (<i>also lmanumani</i>)
lmanturrumi	lmanturum			✓				4 (<i>lmanturumi</i>)
lmargweiti	lmargweit		✓	✓	<i>Croton</i>	<i>megalocarpus</i> Hutch.	EUPHORBIACEAE	2 (<i>lmargweet</i>) 3 (<i>lmargweet</i>) 4 (<i>lmargweet</i>) 5 (<i>lmargwet</i>)
lmaroo	lmaroon	✓			<i>Dovyalis</i>	<i>abyssinica</i> (A. Rich.) Warb.	SALICACEAE	4 (<i>lmoroo</i>)
lmaroo ng'iro			✓					
lmasei	lmase	✓			<i>Coptosperma</i>	<i>graveolens</i> (S. Moore) Degreef	RUBIACEAE	1
					<i>Tarenna</i>	<i>graveolens</i> (S. Moore) Bremek. var. <i>graveolens</i>	RUBIACEAE	2, 4
lmatundai	lmatunda	✓						
lmenang'i	lmenang'i		✓		<i>Ajuga</i>	<i>remota</i> Wall. ex Benth.	LAMIACEAE	5
lmisigiyoio	lmisigiyoio	✓	✓	✓	<i>Rhus</i>	<i>natalensis</i> Bernh.	ANACARDIACEAE	2 (<i>misigiyoio</i> , <i>lmishkiyei</i>),

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
								4(<i>Imisigiyyoi</i>), 5 (<i>Imisigiyo</i>)
Imomoi	Imomo	✓		✓	<i>Kigelia</i>	<i>aethiopica</i> (Aubrév. ex Sillans) Decne.	BIGNONIACEAE	3, 4
					<i>Solanum</i>	<i>nigrum</i> L.	SOLANACEAE	1, 4
Imontoi	Imonto	✓			<i>Dolychos</i>	<i>oliveri</i> Schweinf.	PAPILIONACEAE	4 (<i>also mentei</i>)
Imorijoi	Imorijo	✓			<i>Acokanthera</i>	<i>friesiorum</i> Markgr. <i>longiflora</i> Stapf <i>oppositifolia</i> (Lam.) Codd <i>schimperi</i> (A. DC.) Schweinf.	APOCYNACEAE	4 (<i>Imorijjoi</i>) 3 1 4 (<i>Imorijjoi</i>), 5
Imugutan	Imugutan		✓		<i>Albizia</i>	<i>anthelmintica</i> Brongn.	FABACEAE	3, 4 (<i>also Imokotan</i>), 5 (<i>Imungutan</i>)
Imukushi		✓						
Ing'aboli	Ing'abolo	✓		✓	<i>Ficus</i>	<i>natalensis</i> Hochst. <i>sycomorus</i> L.	MORACEAE	4 4
Ing'alayioi	Ing'alayio	✓	✓	✓	<i>Cucumis</i>	L.	CUCURBITACEAE	4 (<i>Ing'alayoi</i>)
Ing'arboi	Ing'arbo	✓			<i>Dregea</i>	<i>schimperi</i> (Decne) Bullock	APONCYNACEAE	1
Ing'erdeedi	Ing'erdeed		✓		<i>Acacia</i>	<i>senegal</i> (L.) Wiild. var. <i>senegal</i>	FABACEAE	4 (<i>Ingerdedi</i> , <i>lkerdeedi</i>)
Ing'eriyo	Ing'eriyo	✓	✓		<i>Ceropegia</i>	? <i>racemosa</i> N.E.Br.	APOCYNACEAE	1
					<i>Ipomoea</i>	L.	CONVOLVULACEAE	4 (<i>Ingeri</i> , <i>Ingerioi</i>)
					<i>Lawsonia</i>	<i>inermis</i> L.	LYTHRACEAE	3 (<i>Ing'iriai</i>)
Ing'erriyo	Ing'erriyo	✓	✓		<i>Olea</i>	<i>europaea</i> L. ssp. <i>africana</i> (Mill.) P.S.Green	OLEACEAE	1, 2 (<i>Igerioi</i>), 4 (<i>Ing'erriyei</i>), 5 (<i>Igeriyoi</i>)
Inyiriman	Inyiriman	✓	✓	✓	<i>Maerua</i>	<i>endlichii</i> Gilg & Bened.	CAPPARACEAE	4 (<i>also Ingiriman</i>)
					<i>Hildebrandtia</i>	<i>sepalosa</i> Rendle	CONVOLVULACEAE	4 (<i>nyiriman</i>)
lobebeki	lobebek	✓					GRAMINEAE	4 (<i>also laibebeki</i>)
lobereti	loberet		✓		<i>Phyllanthus</i>	<i>sepialis</i> Müll. Arg.	PHYLLANTHACEAE	1, 4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
					<i>Pentas</i>	<i>lanceolata</i> (Forssk.) Deflers	RUBIACEAE	2
lodo ng'anayioi	lodo ng'anayio		✓	✓	<i>Mystroxydon</i>	<i>aethiopicum</i> (Thunb.) Loes.	CELASTRACEAE	4 (<i>lodo ng'anayioi</i>)
loiganyai	loiganya		✓		<i>Pseudopubia</i>	<i>hildebrandtii</i>	SCROPHULARIACEAE	4 (<i>loganyai</i>)
loilalei	loilale		✓		<i>Acacia</i>	<i>hockii</i> De Wild	FABACEAE	2 (<i>loilailei</i>)
					<i>Ziziphus</i>	<i>mucronata</i> Willd.	RHAMNACEAE	4
loiliai	loilia	✓		✓	<i>Sarcostemma</i>	<i>viminale</i> (L.) R. Br.	APOCYNACEAE	1
loisiachi	loisiach	✓			<i>Ipomoea</i>	<i>longituba</i> Hallier f.	CONVOLVULACEAE	4
loisuki	loisuk		✓		<i>Piper</i>	<i>capense</i> L. f.	PIPERACEAE	2 (<i>loisugi</i>)
					<i>Zanthoxylum</i>	<i>chalybeum</i> Engl.	RUTACEAE	3 (<i>loisugi</i>), 4 (<i>also loisugi</i>)
						<i>usambarense</i> (Engl.) Kokwaro		4 (<i>also loisugi</i>), 5
loitunenei	loitunenei			✓				
loiwuraur		✓						
lokai	loka	✓			<i>Hyphaene</i>	<i>compressa</i> H. Wendl.	ARECACEAE	??
lokorosioi	lokorosio	✓			<i>Caralluma</i>	<i>gracilipes</i> K. Schum. <i>speciosa</i> (N.E. Br.) N.E. Br.	APOCYNACEAE	4 (<i>lokorosyo</i>) 4 (<i>lokorosyo</i>)
					<i>Edithcolea</i>	<i>grandis</i> N.E. Br.	APOCYNACEAE	4 (<i>lokorosyo</i>)
lolpiyayoi	lolpiyayo		✓					
lomunyak			✓	✓				
longososi	longososi		✓		<i>Cladostigma</i>	<i>hildebrandtioides</i> Hallier f.	CONVOLVULACEAE	4 (<i>longososi-ornyiriman</i>)
lopito		✓						4
lorodo	lorodo	✓	✓	✓	<i>Cyphostemma</i>	<i>adenocaulis</i> (Steud. ex A. Rich.) Desc. ex Wild & R.B. Drumm. <i>bambuseti</i> (Gilg & M. Brandt) Desc. ex Wild. & R.B. Drumm. <i>kilimandscharicum</i> (Gilg)	VITACEAE	3, 4 2 (<i>lorodo</i>) 2 (<i>lorodo</i>)

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
						Desc. ex Wild. & R.B. Drumm. <i>orondo</i> (Gilg & M. Brandt) Desc.		1
loropiji	loropij	✓			<i>Ipomoea</i>	<i>oenotherae</i> Hallier f.	CONVOLVULACEAE	1
lororoi	lororo			✓	<i>Boscia</i>	<i>angustifolia</i> var. <i>angustifolia</i> A. Rich.	CAPPARACEAE	3 (<i>lororai</i>), 4
losesiai	losesia		✓	✓	<i>Osyris</i>	<i>abyssinica</i> Hochst. ex A. Rich.	SANTALACEAE	4 (<i>lolsesyai</i>)
lowai	lowa	✓			<i>Balanites</i>	<i>aegyptiacus</i> (L.) Delile	ZYGOPHYLLACEAE	3 (<i>lowwai</i>), 4 (<i>lowwai</i>)
loyiapasei	loyiapase	✓	✓	✓	<i>Aspilia</i>	<i>mossambicensis</i> (Oliv.) Wild	ASTERACEAE	4 (<i>loyyapasei</i> , <i>loyyampasoi</i>)
lpanti				✓				
lpapaati		✓						
lpilipili	lpilipili							
lpoponi			✓	✓	<i>Euphorbia</i>	<i>heterochroma</i> Pax	EUPHORBIACEAE	4 (<i>lpopong'i</i>)
lpulei		✓			<i>Balanites</i>	<i>orbicularis</i> Sprague	ZYGOPHYLLACEAE	4 (<i>lpulee</i>) [also reported to be same plant as <i>Ikiloriti</i> , <i>Acacia nilotica</i>]
lpupoi	lpupo	✓	✓	✓	<i>Grewia</i>	<i>villosa</i> Willd.	MALVACEAE	4
lpuusani	lpuusan	✓			<i>Grewia</i>	<i>similis</i> K. Schum. <i>?tembensis</i> Fresen. <i>tembensis</i> Fresen var. <i>kakothamnos</i> (K. Schum.) Burret <i>tenax</i> (Forssk.) Fiori	MALVACEAE	4 1 4
ltarakwai	ltarakwa		✓		<i>Juniperus</i>	<i>procera</i> Hochst. ex. Endl.	CUPRESSACEAE	2, 3, 4
ltepesi	ltepes		✓	✓	<i>Acacia</i>	<i>tortilis</i> (Forssk.) Hayne <i>tortilis</i> (Forssk.) Hayne subsp. <i>spirocarpa</i> (Hochst. ex A. Rich.) Brenan	FABACEAE	3 4
lteroi	ltero		✓		<i>Commiphora</i>	Jacq.	BURSERACEAE	4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
					<i>Lonchocarpus</i>	<i>ericalyx</i> Harms	FABACEAE	4
lteroni	lteroni							
ltilibu	ltilibu	✓			<i>Ficus</i>	<i>capensis</i> Thunb. <i>salicifolia</i> Vahl	MORACEAE	4 4
ltulelei	ltulele	✓	✓		<i>Solanum</i>	<i>aculeatissimum</i> Jacq. <i>benderianum</i> Engl. <i>campylacanthum</i> Hochst. <i>coagulans</i> (Forssk.) <i>incanum</i> L. <i>incanum</i> L. ssp. <i>adoense</i> (Hochst.) Bitter <i>incanum</i> L. ssp. <i>grandifrons</i> Bitter <i>indicum</i> L. <i>renschii</i> Vatke <i>schumannianum</i> Dammer <i>terminale</i> Forssk.	SOLANACEAE	2 (<i>ntulelei</i>) 2 (<i>ntulelei</i>) 1 4 (<i>ntulelei</i>) 2 (<i>ntulelei</i>), 3, 4, 5 2 (<i>ntulelei</i>) 2 (<i>ontulelei</i>) 4 2 (<i>ntulelei</i>) 2 (<i>ntulelei</i>) 2 (<i>ntulelei</i>)
lturkan	lturkan		✓		<i>Sericocomopsis</i>	<i>hildebrandtii</i> Schinz <i>pallida</i> Schinz	AMARANTHACEAE	2, 4 3, 4
manoo	manok	✓			<i>Acacia</i>	<i>senegal</i> (L.) Willd. var. <i>senegal</i> , ssp. <i>keniensis</i>	FABACEAE	4 (<i>from lderkesi tree</i>)
mpasheshi	mpashesh	✓			<i>Caralluma</i>	<i>gracilipes</i> K. Schum.	APOCYNACEAE	4 (<i>mpashash</i>)
					<i>Orbea</i>	<i>dummeri</i> (N.E. Br.) Bruyns	APOCYNACEAE	1
mpopong'i	mpopong'		✓		<i>Euphorbia</i>	<i>candelabrum</i> Tremaut ex Kotschy <i>heterochroma</i> Pax <i>triaculeata</i> Forssk.	EUPHORBIACEAE	5 4 4
nadonkerr	nadonkerr	✓			<i>Sarcostemma</i>	<i>viminale</i> (L.) R. Br.	APOCYNACEAE	1 4 (<i>nado nkerr</i>)
naisigo		✓			<i>Raphionacme</i>	Harv.	APOCYNACEAE	4
nakayamoi	nakayamo	✓	✓					
nangure		✓						

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
nchung'e	nchung'en	✓			<i>Oxygonum</i>	<i>sinuatum</i> (Hochst. & Steud. ex Meisn.) Dammer	POLYGONACEAE	4
nkaisisho	nkaisishoi							
nderikoi/ nderikoni	nderiko	✓						
ndorukoi	ndoruko	✓	✓					
njasi	njasin	✓						4
njeni nayok	njeni nayok			✓	<i>Apodytes</i>	<i>dimidiata</i> E. Mey. ex Arn.	EMMOTACEAE	4 (<i>nchani na yok</i>)
nkaisiraruai	nkaisirarua	✓			<i>Coccinia</i>	<i>?grandis</i> (L.) Voigt	CUCURBITACEAE	4 (<i>nkaiseraruai</i>)
					<i>Cucumis</i>	L.	CUCURBITACEAE	4 (<i>nkaiseraruai</i>)
nkaiyapiyapi	nkaiyapiyap			✓	<i>Croton</i>	<i>dichogamus</i> Pax	EUPHORBIACEAE	4 (<i>nkayyapiyapi</i>)
nkilenyai (or nkilenyaai)	nkilenyai			✓	<i>Syzygium</i>	<i>cordatum</i> Hochst.	MYRTACEAE	2 (<i>nkilenyei</i>), 3 (<i>nkilenyei</i>), 4 (<i>also nkilenyei, ngilenyei</i>)
					<i>Rhoicissus</i>	<i>tridentate</i> (L. f.) Wild & R.B. Drumm.	VITACEAE	4 (<i>also nkilenyei, ngilenyei</i>)
nkoimei/ loimei	nkoimee/ loimee	✓			<i>Asparagus</i>	<i>falcatus</i> L.	ASPARAGACEAE	1
nkopito	nkopit	✓						
nokore	nokoria	✓			<i>Obetia</i>	<i>pinnatifida</i> Baker	URTICACEAE	4
ntererei	nterere	✓			<i>Amaranthus</i>	<i>graecizans</i> L. ssp. <i>graecizans hybridus</i> L.	AMARANTHACEAE	4 1
rangau	rangaun			✓	<i>Acacia</i>	<i>drepanolobium</i> Harms ex Sjostedt <i>gerrardii</i> Benth.	FABACEAE	5 4 (<i>rankau</i>)
raragi	rarag	✓			<i>Peponium</i>	<i>vogelii</i> (Hook f.) Engl.	CUCURBITACEAE	3
raraiti	rarait		✓	✓	<i>Kalanchoe</i>	<i>densiflora</i> Rolfe	CRASSULACEAE	3, 4
					<i>Cissus</i>	<i>rotundifolia</i> (Forssk.) Vahl	VITACEAE	4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
reteti	retet			✓	<i>Turraea</i>	<i>abyssinica</i> Hochst. ex A. Rich. <i>holstii</i> Gürke	MELIACEAE	2
					<i>Ficus</i>	<i>glumosa</i> Delile <i>scassellatii</i> Pamp. ssp. <i>scassellatii</i> <i>wakefieldii</i> Hutch.	MORACEAE	4 2 3, 4
saali	saal			✓	<i>Anisotes</i>	<i>parvifolius</i> Oliv.	ACANTHACEAE	4 (see pp. 206-207)
					<i>Plectranthus</i>	<i>igniarius</i> (Schweinf.) Agnew	LAMIACEAE	4 (see pp. 206-207)
sagarami	sagaram	✓			<i>Acacia</i>	<i>tortilis</i> (Forssk.) Hayne	FABACEAE	[pods from <i>lupes</i>]
sagumai	saguma			✓	<i>Maytenus</i>	<i>heterophylla</i> (Eckl. & Zeyh.) N. Robson <i>putterlickioides</i> (Loes.) Exell & Mendonça	CELASTRACEAE	1, 4 4
					<i>Veronica</i>	<i>anagallis-aquatica</i> L.	PLANTAGINACEAE	2
					<i>Kedrostis</i>	<i>gijef</i> C. Jeffrey	CUCURBITACEAE	3, 4
sananguri	sanangur	✓		✓	<i>Scutia</i>	<i>myrtina</i> (Burm.f.) Kurz	RHAMNACEAE	1, 4 (<i>sanankurrui</i> , <i>sanankurrii</i>)
santau/ santaiti	santait	✓			<i>Berchemia</i>	<i>discolor</i> (Klotzsch) Hemsl.	RHAMNACEAE	4
sarai	sara	✓	✓		<i>Balanites</i>	<i>gillettii</i> Cufod. <i>orbicularis</i> Sprague <i>rotundifolia</i> (Tiegh.) Blatt.	ZYGOPHYLLACEAE	4 4 4, 5 (<i>sorai</i> , <i>ebai</i>)
						sp.		3
saru kiteng	saru kiteng		✓					
seepei	seepe	✓		✓	<i>Ficus</i>	<i>?natalensis</i> Hochst.	MORACEAE	1
segeet	segeet				<i>Dicliptera</i>	<i>verticillata</i> (Forssk.) C. Chr.	ACANTHACEAE	4
					<i>Hypoestes</i>	<i>hildebrandtii</i> Lindau	ACANTHACEAE	4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
					<i>Peristrophe</i>	<i>bicalyculata</i> (Retz.) Nees	ACANTHACEAE	4
					<i>Cleome</i>	<i>gynandra</i> L.	CLEOMACEAE	1
seketeti	seketet		✓	✓	<i>Myrsine</i>	<i>africana</i> L.	PRIMULACEAE	2, 3, 4, 5
seketeti le ng'orio	seketet le ng'orio			✓	<i>Lantana</i>	<i>viburnoides</i> (Forssk.) Vahl	VERBENACEAE	1
						<i>camara</i> L.		4
						<i>trifolia</i> L.		4
seki	sek		✓		<i>Cordia</i>	<i>ovalis</i> R. Br.	BORAGINACEAE	4
sekotei	sekotei	✓	✓	✓	<i>Salvadora</i>	<i>persica</i> L. var. <i>persica</i>	SALVADORACEAE	2 (<i>sokotei</i>), 3 (<i>sokotei</i>), 4 (<i>also sokotei</i>), 5
semeita	semeita		✓					
senetoi	seneto		✓		<i>Cassia</i>	<i>didymobotrya</i> Fresen. <i>longiracemosa</i> Vatke <i>obtusifolia</i> L. <i>singueana</i> Delile	FABACEAE	4 3 (<i>senatoi</i>), 4 4 4
					<i>Senna</i>	<i>singueana</i> (Delile) Lock	FABACEAE	5
serishoi	serisho		✓		<i>Boscia</i>	<i>coriacea</i> Pax	CAPPARACEAE	4 (<i>also serijoi</i>)
sesiai	sesia		✓	✓	<i>Acacia</i>	<i>elator</i> Brenan subsp. <i>turkanae</i> Brenan	FABACEAE	4
silalei	silale	✓	✓		<i>Boswellia</i>	<i>hildebrandtii</i> Engl.	BURSERACEAE	3, 4
sinantei	sinante		✓	✓	<i>Cassia</i>	<i>longiracemosa</i> Vatke.	FABACEAE	4 (<i>also sinandei</i>)
sirai	sira		✓	✓	<i>Euphorbia</i>	<i>candelabrum</i> Tremaut ex Kotschy	EUPHORBIACEAE	3 (<i>serai</i>), 4 (<i>also serai</i>)
siteti	sitet	✓			<i>Grewia</i>	<i>bicolor</i> Juss. <i>mollis</i> Juss.	MALVACEAE	3, 4 4
sokoni	sokoni		✓		<i>Warburgia</i>	<i>ugandensis</i> Sprague ssp. <i>ugandensis</i>	CANELLACEAE	3, 4
sonkoroi	sonkoro			✓	<i>Brucea</i>	<i>antidysenterica</i> Mill.	SIMAROUBACEAE	4 (<i>also sankoroi</i>)
suchai	sucha			✓	<i>Barleria</i>	<i>acanthoides</i> Vahl <i>argentea</i> Balf. F. <i>cephalophora</i> Lindau <i>eranthemoides</i> R. Br. Ex C.B. Clarke <i>proxima</i> Lindau	ACANTHACEAE	4 4 4 4 4

Name (sing.)	Name (pl.)	Food	Med	Herb	Genus	Species, Sub-species	Family	Citations ⁴¹
						<i>spinisepala</i> E.A. Bruce		3, 4
sukuroi	sukuro				<i>Aloe</i>	<i>secundiflora</i> Engl.	XANTHORRHOACEAE	5
sukurtuti	sukurtuti		✓		<i>Secamone</i>	<i>punctulata</i> Decne.	APOCYNACEAE	2 (<i>sukurututi</i>)
					<i>Cissus</i>	<i>quadrangularis</i> L.	VITACEAE	3, 4, 5
sunoni	sunoni			✓	<i>Bothriocline</i>	<i>longipes</i> (Oliv. & Hiern) N.E. Br.	ASTERACEAE	2
					<i>Leucas</i>	<i>tomentosa</i> Gürke	LAMIACEAE	4
					<i>Satureja</i>	L.	LAMIACEAE	2
					<i>Lippia</i>	<i>carviadora</i> Meikle	VERBENACEAE	4
						<i>javanica</i> (Burm.f.) Spreng		1, 5
						<i>somalensis</i> Vatke		4
						<i>ukambensis</i> Vatke		3, 4

Table III-B Lorroki Plateau food plants, in descending order of salience

Food Plant	Salience (Smith's S) ⁴²	Parts Eaten	Pot Used?	Food Plant	Salience (Smith's S)	Parts Eaten	Pot Used?
lamuriai	0.748	fruits, seeds	✓				
lordo	0.356	seeds	✓	lmaroo	0.023	fruits	✓
lchingei	0.216	fruits, leaves	✓	irri	0.022	fruits	✓
lpuusani	0.204	fruits	✓	laitipai	0.022	fruits, seeds	✓
lmorijoi	0.172	fruits		nderikoi/nderikoni	0.022	fruits	
sananguri	0.142	fruits, seeds		nkoimei/loimei	0.020	roots	
lgeriyioi	0.121	?	?	nadonkerr	0.018	stems	
lmisigiyoioi	0.093	fruits, seeds		lkisoyiai	0.017	roots	
lpupoi	0.083	seeds	✓	lobebeki	0.017	roots	
lkinoi	0.056	seeds	✓	lokai	0.017	fruits, seeds	✓
sagarami	0.056	pod	✓	lgilai/ngilai	0.016	fruits	
manoo	0.051	gum		lngalayioi	0.013	fruits	
loropiji	0.048	roots		lowai	0.013	fruits	
lmasei	0.047	fruits		siteti	0.012	seeds	✓
ndorukoi	0.046	fruits, seeds	✓	lmatundai	0.011	stems	
lamai	0.043	fruits		lokormosioi	0.009	branch es	
laingudai	0.034	tubers		lkitinti	0.008	fruits	
lngaboli	0.033	fruits, seeds		loisiachi	0.008	?	?
mpasheshi	0.032	whole plant		seepei	0.007	seed covers	
njasi	0.029	roots		lkalkaloi	0.006	fruits	✓
ntererei	0.028	leaves	✓	nokore	0.004	bark	
lgomi	0.027	seeds		lmomoi	0.003	fruits, leaves	✓

⁴² Smith's $S = ((\sum (L - R_i + 1)) / L) / N$ where S is the average rank of an item across all lists, weighted by the lengths of the lists in which the item occurs; L = length of (number of items in) a list; R_i = rank of item in the list (first = 1); and N = number of lists in the sample (adapted from Smith and Borgatti 1998). As a point of reference, *lamuriai* had a salience value of 0.748 on the Lorroki Plateau. It was mentioned by twenty-seven out of thirty households, usually first or second on their lists. *Lmorijoi* had a salience value of 0.172, and its sweet purple fruits were only mentioned by nine households and only once first on a list.

Table III-C Lowlands food plants, in descending order of salience

Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?	Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?
lpuusani	0.709	Fruits	✓				
lokai	0.599	fruits, seeds	✓	lamuriai	0.020	fruits, seeds	✓
lkinoi	0.397	Seeds	✓	silalei	0.019	gum	
sekotei	0.393	fruits		lkisoyiai	0.017	roots	
lpupoi	0.355	seeds	✓	nkaisiraruai	0.017	seeds	
lordo	0.307	seeds	✓	nderikoi/nderikoni	0.013	fruits	
manoo	0.152	gum		lnyiriman	0.011	roots	✓
ndorukoi	0.102	fruits, seeds	✓	lpulei	0.010	fruits, pods	✓
njasi	0.096	roots		nangure	0.010	gum	
siteti	0.072	seeds	✓	lkormosiyioi	0.008	fruits, seeds	✓
sagarami	0.060	Pods	✓	laingudai	0.007	tubers	
lkiloriti	0.043	bark	✓	lesuruash	0.007	?	?
santau/santaiti	0.036	fruits		lekurruki	0.005	fruits	
sarai	0.033	seeds	✓	leronkon	0.004	small shoots	

Table III-D Highlands food plants, in descending order of salience

Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?	Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?
lamuriai	0.602	fruits, seeds	✓	lkitinti	0.035	fruits	
loro	0.449	seeds	✓	lchingei	0.033	fruits, leaves	✓
lmsigiyioi	0.214	fruits, seeds		lokai	0.029	fruits, seeds	✓
lpuusani	0.158	fruits	✓	nderikoi/nderikoni	0.029	fruits	
lmaroo	0.141	fruits	✓	loisiachi	0.022	?	?
sananguri	0.134	fruits, seeds		lngalayioi	0.021	fruits	
raragi	0.120	fruits, seeds	✓	lgomi	0.021	seeds	
lgeriyioi	0.104	?	?	lmorijoi	0.017	fruits	
njasi	0.086	roots		loiwuraur	0.017	roots	
lpulei	0.084	fruits, pods	✓	larashi	0.014	seeds	✓
sekotei	0.081	fruits		naisigo	0.014	tubers	
lapiroi	0.074	seeds		loropiji	0.013	roots	
lobebeki	0.072	roots		sagarami	0.011	pods	✓
lpupoi	0.065	seeds	✓	lokormosioi	0.010	branches	
manoo	0.063	gum		ltepesi	0.010	?	?
ndorukoi	0.061	fruits, seeds	✓	lgerriyoi	0.008	fruits	✓
laingudai	0.057	tubers		ltilibu	0.008	fruits	
lkinoi	0.053	seeds	✓	lkisoyiai	0.005	roots	
laitipai	0.052	fruits, seeds	✓	lmontoi	0.005	roots	
nkoimei/loimei	0.051	roots		siteti	0.005	seeds	✓

Table III-E Loliin food plants, in descending order of salience

Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?	Food Plant	Salience (Smith's S)	Parts Eaten	Prepared in Pot?
lamuriai	0.491	fruits, seeds	✓				
lgilai/ngilai	0.344	fruits		lokai	0.037	fruits, seeds	✓
sananguri	0.312	fruits, seeds		sekotei	0.035	fruits	
ndorukoi	0.264	fruits, seeds	✓	lmukushi	0.031	seeds	
lmaroo	0.185	fruits	✓	lordo	0.030	seeds	✓
lchingei	0.141	fruits, leaves	✓	laingudai	0.028	tubers	
lngerriyoi	0.140	fruits	✓	lngarbo	0.027	fruits	
lpupoi	0.117	seeds	✓	lkinoi	0.025	seeds	✓
lmorijoi	0.115	fruits		lngaboli	0.025	fruits, seeds	
lamai	0.100	fruits		nkopito	0.025	bark	
loropiji	0.099	roots		nakayamoi	0.023	roots/tubers	✓
raragi	0.098	fruits, seeds	✓	nchunge/nkaisisho	0.023	leaves	✓
loiliai	0.073	?	?	lgisi	0.022	fruits, seeds	
mpasheshi	0.071	whole plant		lgomi	0.022	seeds	
nadonkerr	0.062	stems		manoo	0.020	gum	
sagarami	0.057	Pods	✓	loyiapasei	0.019	seeds	
lberetiai	0.057	roots/tubers		santau/santaiti	0.017	fruits	
lkormosiyioi	0.056	fruits, seeds	✓	lpapaati	0.012	fruits, seeds	✓
lpuusani	0.054	fruits	✓	lkisoyiai	0.011	roots	
siteti	0.054	seeds	✓	latupusha	0.010	roots/tubers	✓
lngeriyioi	0.048	whole plant		ltulelei	0.007	seeds	
njasi	0.045	roots		seepei	0.006	seed cover	
lmisigiyyoi	0.037	fruits, seeds		lekumojino	0.005	roots/tubers	

Table III-F Medicinal plants by region, in descending order of salience

Lorroki Plateau		Lowlands		Highlands		Loliin	
Medicine	Salience	Medicine	Salience	Medicine	Salience	Medicine	Salience
<i>lkukulai</i>	0.600	<i>lmakutikuti</i>	0.660	<i>lkukulai</i>	0.624	<i>lakirding'ai</i>	0.433
<i>lakirding'ai</i>	0.564	<i>lnyiriman</i>	0.580	<i>lkinyil</i>	0.419	<i>leparmunyo</i>	0.385
<i>leparmunyo</i>	0.293	<i>lasaramai</i>	0.401	<i>lakirding'ai</i>	0.410	<i>lkinyil</i>	0.291
<i>lmakutikuti</i>	0.259	<i>lgiriai</i>	0.241	<i>lamuriai</i>	0.332	<i>lmakutikuti</i>	0.291
<i>lamuriai</i>	0.212	<i>lching'ei</i>	0.222	<i>lmakutikuti</i>	0.317	<i>lkukulai</i>	0.243
<i>lching'ei</i>	0.146	<i>ldepe</i>	0.162	<i>long'ososi</i>	0.151	<i>lgiriai</i>	0.073
<i>lnyiriman</i>	0.102	<i>lng'alayioi</i>	0.114	<i>lolpiyayoi</i>	0.127	<i>lnyiriman</i>	0.062
<i>lodo</i>							
<i>ng'anayioi</i>	0.079	<i>lkiriantus</i>	0.101	<i>lching'ei</i>	0.096	<i>ldepe</i>	0.046
<i>seketeti</i>	0.067	<i>lkinyil</i>	0.095	<i>lgiriai</i>	0.071	<i>lamuriai</i>	0.042
<i>lkiloriti</i>	0.065	<i>ltepesi</i>	0.078	<i>lkitalasua</i>	0.046	<i>lgisi</i>	0.037
<i>lgiriai</i>	0.056	<i>lmargweiti</i>	0.077	<i>leparmunyo</i>	0.042	<i>lmugutan</i>	0.037
<i>longososi</i>	0.050	<i>seketeti</i>	0.070	<i>lpoponi</i>	0.038	<i>long'ososi</i>	0.037
<i>lkinyil</i>	0.044	<i>lkiloriti</i>	0.054	<i>lmisigiyioi</i>	0.037	<i>lturkan</i>	0.037
<i>lmisigiyioi</i>	0.039	<i>lpoponi</i>	0.044	<i>lkiloriti</i>	0.033	<i>sekotei</i>	0.037
<i>ndorukoi</i>	0.033	<i>sesiai</i>	0.039	<i>lkirenyi</i>	0.033	<i>ledat</i>	0.032
<i>silalei</i>	0.033	<i>sekotei</i>	0.039	<i>sekotei</i>	0.029	<i>lching'ei</i>	0.029
<i>lpanti</i>	0.028	<i>lmisigiyioi</i>	0.035	<i>sanang'uri</i>	0.027	<i>lpoponi</i>	0.028
<i>lgilai/ng'ilai</i>	0.022	<i>lcheni ng'iro</i>	0.034	<i>sinantei</i>	0.026	<i>sunoni</i>	0.028
<i>seki</i>	0.019	<i>silalei</i>	0.033	<i>ledat</i>	0.025	<i>sanang'uri</i>	0.025
<i>ldepe</i>	0.017	<i>lkukulai</i>	0.031	<i>raraiti</i>	0.024	<i>latakweny</i>	0.021
<i>lng'eriyioi</i>	0.015	<i>sukurtuti</i>	0.027	<i>ldepe</i>	0.024	<i>lkitegerat</i>	0.019
<i>labaai</i>	0.015	<i>sokoni</i>	0.026	<i>silalei</i>	0.019	<i>lmisigiyioi</i>	0.019
<i>loilalei</i>	0.013	<i>lmugutan</i>	0.024	<i>mpopong'i</i>	0.017	<i>lodo ng'anayioi</i>	0.019
<i>lamalogi</i>	0.011	<i>lturkan</i>	0.022	<i>ltarakwai</i>	0.014	<i>lmargweiti</i>	0.017
<i>letakwai</i>	0.011	<i>loisuki</i>	0.020	<i>lmargweiti</i>	0.013	<i>sarai</i>	0.016
<i>mpopong'i</i>	0.011	<i>saru kiteng</i>	0.017	<i>lmenang'i</i>	0.013	<i>lkitalasua</i>	0.014
<i>lasaramai</i>	0.008	<i>serishoi</i>	0.014	<i>manemany</i>	0.013	<i>loyiapasei</i>	0.014
<i>lteroi</i>	0.008	<i>ldalampoi</i>	0.011	<i>loiganyai</i>	0.011	<i>lasaramai</i>	0.012
<i>lturkan</i>	0.008	<i>lpupoi</i>	0.011	<i>lng'alayioi</i>	0.010	<i>lkaukawa</i>	0.012
<i>sirai</i>	0.008	<i>raraiti</i>	0.011	<i>lkiriantus</i>	0.010	<i>lkiloriti</i>	0.012
<i>lng'erdeedi</i>	0.007	<i>lamuriai</i>	0.010	<i>lasapukoi</i>	0.007	<i>loisuki</i>	0.012
<i>lamai</i>	0.006	<i>mpopong'i</i>	0.007	<i>seketeti</i>	0.007	<i>loilalei</i>	0.009
<i>lbukoi</i>	0.006	<i>sakurdumi</i>	0.004	<i>sunoni</i>	0.007	<i>lkujuk</i>	0.006
<i>lerai</i>	0.006	<i>lesuruash</i>	0.004	<i>losesiai</i>	0.005	<i>lomunyak</i>	0.005
<i>lmaroo ng'iro</i>	0.006			<i>semeita</i>	0.005	<i>lodo</i>	0.005
<i>lng'erriyoi</i>	0.006			<i>sukurtuti</i>	0.004	<i>seki</i>	0.004
<i>sarai</i>	0.006						

Table III-G Medicinal plants: Preparation and uses

Name	Parts Used	Preparation	When Used
labaai	leaves	grind, soak in water	stomach problems
lakirding'ai	roots	sometimes peel, boil	colds, cough
lamai	roots	peel, boil	stomach problems
lamalogi	bark	boil, add milk	joint problems
lamuriai	roots	grind, boil	rheumatism, joints, good for new mothers and also given to livestock after giving birth to expel the placenta
lasapukoi	bark	take off outer layer, boil with milk	stomach problems
lasaramai	roots, bark?	soak and drink, or boil (can dry, grind first)	malaria, colds
latakweny	?	?	?
lbukoi	roots, bark	boil	stomachache, hypertension
lcheni ng'iro	bark	soak in water, drink	stomach, good for babies
lchingei	roots	boil the outer layer of roots	stomach problems, constipation
ldalampoi	roots	boil	multipurpose
ldepe	bark	soak in water, or boil with soup	multipurpose, colds, induces vomiting
ledat	roots	boil like tea, add sugar	colds, malaria
leparmunyo	roots	boil, can add milk, or for babies soak in water	malaria, colds
lerai	bark	boil, add milk	stomach problems in children
lesuruash	leaves	boil	malaria, to induce vomiting
letakwai	?	prepared by specialist from the Letakwai family	constipation
lgilai/ng'ilai	leaves	boil	
lgiriai	roots	dry, grind, boil	stomach problems, to remove placenta
lgisi	bark	boil	?
lkaukawa	bark	soak with milk, or boil (can add milk)	for children, also treats teeth problems
lkiloriti	bark	pound, boil with soup	eye problems, chest problems, stomachache
lkinyil	roots	pound roots, boil with soup	malaria, fever
lkirenyi	branches, bark	remove outer bark, boil, add milk	induces vomiting for malaria, colds
lkiriantus	branches, roots	boil	stomach problems, whole body problems
lkitalasua	roots	boil with soup	general health
lkitegerat	roots	peel, boil	upper respiratory problems
lkujita ong'u	grass	boil	vaccine for livestock
lkujuk	bark	boil with soup	?
lkukulai	roots	dry, grind, boil with soup	colds, upper respiratory problems, malaria, fever
lmakutikuti	roots	put roots in slices cut into fatty meat, boil, drink broth	UTIs, STIs, airborne diseases, respiratory problems, malaria, fertility
lmanmani	roots	boil	rheumatism
lmargweiti	leaves	boil	multipurpose, malaria, cough
lmaroo ng'iro	stem	boil	cramps when pregnant, muscle soreness
lmenangi	leaves	soak in water	stomach, malaria, stops diarrhea
lmisigiyoio	roots	boil	cold, flu in children
lmugutan	roots	boil	worms, malaria, induces vomiting
lng'alayioi	roots	dry, grind, boil	multipurpose, good for eyes

lng'erdeedi	bark	boil	stops diarrhea in children
lng'eriyo	whole plant	eaten raw	?
lng'erriyo	bark	boil	tapeworms, also good for breastfeeding mothers
lnyiriman	roots	dry, grind, boil	induces diarrhea
lobereti	roots	boil	upper respiratory
lodo	bark	boil and drink	stops diarrhea in children and babies
ng'anayio			
loiganyai	roots	boil with water, milk, and fat	rheumatism, joint problems
loilalei	bark	boil	stops diarrhea in children
loisuki	seeds	just chew, or can grind and boil	throat problems
lolpiyayoi	roots	boil	malaria, colds
lomunyak	leaves	boil, add milk or tea	abdominal pain in women
longososi	branches, bark	grind bark, boil	stomach problems, women's health, also induces diarrhea
lordo	roots	soak in water, add milk	stomach problems in children, general health
losesiai	bark	boil	stops diarrhea in children
loyiapasei	root	peel, boil, add milk and fat	general health
lpanti	bark	boil with milk	colds, stops diarrhea in babies
lpoponi	?	?	?
lpupoi	?	?	?
ltarakwai	bark	boil, add milk	chest problems, pneumonia
ltepesi	roots	soak	malaria
lteroi	roots	boil, add milk	bone problems, joint problems
ltulelei	roots, fruits	chew roots, sometimes boil; use raw juice from fruits	roots for throat problems, fruits to treat wounds
lturkan	roots	soak, shake	stomach problems, malaria, induces vomiting
mpopong'i	branches	burn, pound, boil with soup; for livestock boil with water	colds, respiratory problems, stomach problems, chest problems, fertility; also given to livestock
nakayamoi	root/tuber	boil	stomach problems, stops diarrhea
ndorukoi	?	?	?
raraiti	roots	boil, add maize flour	malaria
sakurdumi	branches	soak, grind, add water, boil	stomach problems
sananguri	bark, roots	boil in soup	general health
sarai	?	?	?
saru kiteng	roots, leaves	pound, soak, add milk, boil	malaria, induces vomiting
seketeti	seeds	grind, boil	worms, upper respiratory problems, injuries, also give to pregnant women
seki	roots, branches	boil, or peel and soak branches	for women who have given birth
sekotei	roots	boil	women's health
semeita	tuber	grind, soak, shake	reduces bile
senetoi	leaves	boil	malaria, induces vomiting
serishoi	root	burn, remove bark, boil	chest problems, induces vomiting
sesiai	bark	dry, grind, boil or can soak	stomach problems
silalei	?	?	?
sinantei	roots	boil with milk or mix with tea for babies	prevents diseases like colds, good for babies
sirai	roots	boil, sieve, drink	upper respiratory, other diseases
sokoni	bark	dry, grind, sometimes boil, sometimes just drink	upper respiratory

sukurtuti	leaves, roots	boil, add milk and sometimes fat, or add tea or maize flour, drink	upper respiratory
sunoni	leaves	boil (can add milk) and breathe in the steam	measles, coughing, fever in children

There was no straightforward way to ask about “herbs,” which represent a category of plants that form a fairly straightforward emic category in Samburu. For the surveys, we explained this category in the following terms: “Which plant do you take with soup, which plants do you prepare not for diseases, just to help the body?” The complete list of plants named by Samburu women as herbs can be found in Table III-H. This list would no doubt be longer if I had been surveying men. Many women in the lowlands were in fact somewhat reluctant to discuss plants they may have considered part and parcel of the male domain: Herbs are nearly always barks or roots, boiled with the soups consumed by *Imurran* during meat feasting.

Table III-H Herbal plants by region, in descending order of salience

Lorroroki Plateau		Lowlands		Highlands		Loliin	
Herb	Salience	Herb	Salience	Herb	Salience	Herb	Salience
<i>lkiloriti</i>	0.225	<i>lkiloriti</i>	0.094	<i>losesiai</i>	0.291	<i>lmisigiyyoi</i>	0.194
<i>lkukulai</i>	0.168	<i>ldepe</i>	0.071	<i>lmisigiyyoi</i>	0.265	<i>lkinyil</i>	0.173
<i>lmakutikuti</i>	0.136	<i>sesiai</i>	0.044	<i>sanang'uri</i>	0.200	<i>njeni nayok</i>	0.146
<i>lakirding'ai</i>	0.133	<i>ltepesi</i>	0.042	<i>lkukulai</i>	0.144	<i>lodo ng'anayioi</i>	0.141
<i>lamuriai</i>	0.100	<i>lkinyil</i>	0.040	<i>lmakutikuti</i>	0.130	<i>loyiapasei</i>	0.139
<i>lkinyil</i>	0.083	<i>losesiai</i>	0.038	<i>loitunenei</i>	0.119	<i>losesiai</i>	0.093
<i>seketeti</i>	0.072	<i>larudenyai</i>	0.033	<i>lkitalasua</i>	0.092	<i>lamuriai</i>	0.070
<i>lmisigiyyoi</i>	0.056	<i>lkitalasua</i>	0.033	<i>lakirding'ai</i>	0.075	<i>lakirding'ai</i>	0.062
<i>sanang'uri</i>	0.056	<i>sekotei</i>	0.033	<i>lkiloriti</i>	0.067	<i>lamai</i>	0.052
<i>larudenyai</i>	0.042	<i>sanang'uri</i>	0.022	<i>lkinyil</i>	0.058	<i>sunoni</i>	0.052
<i>leparmunyo</i>	0.036	<i>lmakutikuti</i>	0.020	<i>lamuriai</i>	0.048	<i>lororoi</i>	0.049
<i>lnyiriman</i>	0.033	<i>lpupoi</i>	0.017	<i>longososi</i>	0.043	<i>lkiloriti</i>	0.048
<i>long'ososi</i>	0.033	<i>lching'ei nkaiyapiyapi</i>	0.011	<i>ldepe</i>	0.033	<i>lkukulai</i>	0.046
<i>lamai</i>	0.022	<i>lkitagesi</i>	0.006	<i>lng'alayioi</i>	0.033	<i>lchakuai</i>	0.037
<i>loyiapasei</i>	0.022			<i>saali</i>	0.033	<i>lng'aboli</i>	0.037
<i>lpanti</i>	0.022			<i>sunoni</i>	0.033	<i>lodo</i>	0.037
<i>lerai</i>	0.017			<i>sonkoroi</i>	0.029	<i>saali</i>	0.037
<i>loiliai</i>	0.017			<i>lapiroi</i>	0.027	<i>sananguri</i>	0.035
<i>sirai</i>	0.017			<i>lmargweiti</i>	0.022	<i>nkilenyai</i>	0.031
<i>lbukoi</i>	0.007			<i>leserimende</i>	0.019	<i>lpoponi</i>	0.029
				<i>seketeti</i>	0.017	<i>lmargweiti</i>	0.025
				<i>raraiti</i>	0.011	<i>lmomoi</i>	0.025
				<i>sagumai</i>	0.011	<i>ltepesi</i>	0.025
				<i>lasapukoi</i>	0.008	<i>reteti</i>	0.025
				<i>lmanturrumi</i>	0.007	<i>seketeti</i>	
				<i>rang'au</i>	0.007	<i>leng'orio</i>	0.021
						<i>sonkoroi</i>	0.019
						<i>larudenyai</i>	0.016
						<i>lching'ei</i>	0.012
						<i>leparmunyo</i>	0.012
						<i>lkaukawa</i>	0.012
						<i>lmakutikuti</i>	0.012
						<i>seepei</i>	0.012
						<i>sinantei</i>	0.012
						<i>lpanti</i>	0.009
						<i>lembae</i>	
						<i>nabo</i>	0.008
						<i>suchai</i>	0.004

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