

# Variations in Pottery Making by Ari Potters in Southwestern Ethiopia: Analysis of the Finger Movement Patterns Used in Forming Pots

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In this paper, I describe pottery making by examining fine finger movements, with a focus on both shared finger movements common among potters and on unique pot-forming procedures developed by each maker. I regard Ari pottery making as a community-based technology (CBT) that creates commodities necessary for people's basic daily needs, and consider how pottery makers create new sizes and shapes of pots based on two-way relationships between users' demands and makers' trials and errors. I describe the pot-forming process by (1) analyzing the fine movement of potters' hands and fingers, (2) identifying each maker's pot-formation processes, and, (3) analyzing the process of creating new shapes by focusing on relationships between makers and users.

Observations and analysis revealed four main characteristics. First, I found that Ari pottery makers exhibit 20 patterns of common finger movements and follow four stages in making pots. Second, observations focused on finger movement patterns showed that each maker develops a different procedure to form pots. Variations in pottery making are related to the weight and thickness of each pot and the customer's evaluation of the durability of the pots. Third, each potter follows her own procedure in forming pots. Finally, potters may invent new finger movement patterns (FMPs) to create new sizes and shapes for pots to accommodate orders by preferred customers (*jaala*). Pottery making in the Ari area is one aspect of Ari society, and potters have developed their pottery making techniques on the basis of social relationships.

**Key words:** Ari, Ethiopia, finger movement patterns, pottery making, unit of process

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## 1. INTRODUCTION

### *1-1. Background*

The Ari people of southwestern Ethiopia often use earthenware cooking vessels, and approximately 60 different kinds of pots are used that are made by woman. They belong to the *mana* group, a group that is socially segregated from farmer groups. Although the husbands of potters may cultivate small plots of land, this work cannot sustain a household. Married potters sell their pots directly to users in local markets; their work and these sales are expected to provide a livelihood for their families.

Potters usually make popular, frequently used types of cooking pots. Uniquely shaped or sized pots are rare, but some potters occasionally create uniquely shaped pots based on orders from clients. In this paper, I focus on variations in pottery making among Ari potters, and I examine how potters change and create their techniques based on the influence of social relationships between makers and users.

*1-2. Previous studies*

Previous studies have examined technical changes through two main viewpoints. One view focuses on technological change as a means of clarifying technological evolution. Wendell (1976) examined 1175 items of material culture created by the members of 36 societies to analyze the technological evolution of “technounits” (Wendell 1976: 38)<sup>(1)</sup> and regarded technological change as innovation. The process of innovation has been defined as the intimate linkage or fusion of two or more elements that have not previously been joined in this fashion, to create a qualitatively distinct whole (Barnett 1953: 181). Wendell (1976: 201) noted that while he considered ways in which technological knowledge had been reorganized to produce innovations, his main concern was not with the cultural contexts behind innovations.

The other view focuses on the relationship between technological change and cultural context. This perspective tends to avoid the exaggerated picture of technological evolution that moves from simple tools to complex machines. Pfaffenberger (1992: 513), for example, suggested the sociotechnical system concept, which offers a universal conception of human technology. Elaborating on the saying “necessity is the mother of innovation,” Pfaffenberger (1992: 496) proposed that culture, not nature, defines necessity. Lemonnier (1993: 21) suggested the concept of “technological choices” as a way of examining change and continuity in material culture that results from autogenous invention, by a group, of a new element designed to act on matter, or from some external borrowing. Although these concepts suggest a way of understanding technological change and innovation in cultural contexts, it is difficult to describe the process of invention itself because the events that may transform a technical invention into an actual technique are so drawn out and complex that, in itself, the invention of something new may seem like a minor incident in the process of innovation (Lemonnier 1993: 21).

Even though the two views are contrastive, they tacitly assume that technology is equally shared among members of a given society and community. London (1991: 183) examined standardization and variation in pottery making on two levels, the communal and the individual, in Pradijon, the Philippines. According to her analysis of 16 potters, factors influencing standardization were market demands, involvement of nonprofessionals, individual style and preference, manufacturing technique, and age of the potter (London 1991: 200). However, simply describing how these differences have occurred and how social relationships between makers and users who belong to different social groups influence technological change and creativity is insufficient.

*1-3. The aim of this paper*

In this paper, I describe pottery making by examining fine finger movements, with a focus on both shared finger movements common among potters and on unique pot-forming procedures developed by each maker. Since Mauss (1968 [1950 (1936)]) demonstrated the idea of “techniques of the body,” studies on body techniques involving physical and material constraints and utilitarian efficiency, such as those involved in forming pots, washing clothes, and resting, have not developed as much as studies of body techniques used as communication tools (Hewes 1957, Kawada 1991, Lock 1993). Here, I examined pottery making by analyzing potters’ finger movements as a “technique of the body” among a group of them.

Shigeta (1996: 19) defined community-based technology (CBT) as technology that creates commodities necessary for people’s basic daily needs. I regard Ari pottery making as a CBT and consider how pottery makers create new sizes and shapes of pots on the basis of the two-way relationship between users’ demands and makers’ trials and errors.

I describe the pot-forming process by (1) analyzing the fine movement of potters’ hands and fingers, (2) identifying each maker’s pot-formation processes, and (3) analyzing the process of creating new shapes by focusing on relationships between makers and users.

There are at least 20 pottery makers’ villages among the Ari. I conducted field research for 18 months in two of these villages and learned pottery-making techniques. The main informants were 20 potters from Village S and 60 from Village G.

## 2. GENERAL BACKGROUND OF THE RESEARCH SITE

### 2-1. Research site and Ari pots

The nearest town to my research site was Jinka, which lies approximately 700 km southwest of the capital of Ethiopia, Addis Ababa (Fig. 1). The Ari people inhabit the highland zone, from 1000 to 3000 m in altitude. They engage in subsistence agriculture based on *enset* (a crop indigenous to Ethiopia, also known as “false banana”)<sup>(2)</sup>, taro, and yam, as well as cereal crops including maize, barley, and wheat.

In this area, the usual type of water jar has been gradually changing from a clay pot to a plastic container, but people often use clay pots for preparing food and brewing local beer. The Ari can purchase industrial products as well as local products, such as ceramic pots, ironware, and wooden products, at the local markets twice a week. There are few brokers who sell pots in the markets, but in most cases the Ari buy pots directly from potters.

The Ari classify at least 60 different kinds of pots. Based on shape, pots are classified into four categories: (1) *tila*, (2) *aksh*, (3) *disti*, and (4) *jebena* (Table 1). *Tila*-shaped pots were the most frequently encountered during my research. These pots have a rounded bottom, a rectangular upper part, and a handle for holding. Housewives refer to each *tila* according to the ingredients they cook in it. For instance, when they steam taro (*Gabija* in Ari) they cook it in their *Gabija til*. Kitchens typically have a number of *tila*-shaped pots such as an *agemi til* (pot for *ensete*), an *ekena til* (pot for cabbage), and a *pateri til* (pot for maize). The Ari use about 20 different kinds of *tila*-shaped pots. Housewives also identify each kind of *tila* by its size (Kaneko 2006). The pots are made from clay that is available locally.

### 2-2. Pottery makers





Potters belong to a socially segregated group called *mana*. *Mana* groups are also found among other ethnic groups neighboring the Ari, such as the Gofa, Basketo, Maale, Oyda, Gamo, and Walaita (Freeman & Pankhurst 2001). The Ari recognize two social groups, the *kantsa* and *mana*. Cultural taboo prohibits intermarriage between these groups. *Kantsa* people call pottery makers and their relatives *tila mana* to distinguish them from blacksmiths, called *faka mana*. Although potters and blacksmiths belong to the same *mana* group, it is also culturally prohibited for them to intermarry.

When *tila mana* girls are six years old, they begin learning pottery making from their mothers. The



Fig. 1. Research Area

**Table 1.** Pots commonly used by Ari people in their daily life.

Vernacular name	usage	Language	shape
<i>tila</i>	Steaming root crops, carrying water, brewing alcoholic drinks	Ari	
<i>aksh</i>	Roast coffee and cereals, baking injera*	Ari	
<i>disti</i>	cooking side dishes	Ari of Amharic origin	
<i>jebena</i>	Making coffee	Amharic	

\* *Injera* is a typical staple food in Ethiopia made from *teff* flour, a cereal of Ethiopian origin. It resembles a big crepe, about one meter in diameter.

*tila mana* potters do not share common workplaces for pottery making, as each potter has her own workplace near her house. Only daughters can make pots in a mother's workplace. By 15 years of age, daughters are expected to have learned to make all of the kinds of pottery used by their community. Once they have mastered all pot types, they are generally permitted to get married.

Among the pottery makers in the study villages, I identified 16 exogamous clans. The Ari kinship system follows a patrilineal descent system. In most cases, there is a dominant clan in a village. Ari girls marry out from their village to the village of their husbands.

### 3. VARIATIONS IN POTTERY MAKING

#### 3-1. Stages in making a *tila*

This section examines variations in *tila* making by focusing on hand and finger movement patterns. Pottery makers divide the process of forming a *tila* into four stages (Fig. 2). A pot is formed from the round bottom part to the upper part. In the first stage (I), pottery makers form a shallow bowl. In the second stage (II), they expand the bottom part into a sphere-like shape, which is more than double the size of the bowl in stage I. In the third stage (III), they add some clay to the surface and form the narrow-necked upper part. In the final stage (IV), they again add clay onto the surface of the upper part and add handles. After all stages have been completed, the pots are dried in the shade of a hut.

Pottery makers have names for each of these steps: *Bakushi*, *Gidibul*, *Gochi*, and *Galtsi*, respectively (Fig. 2). These four terms are forms of action verbs in the Ari language. *Bakushi* for stage I means "make basic form." This expression is used only in reference to pot making. The name for stage II, *Gidibul*, is a compound word: *gidi* means "inside," and *bul* is the present tense of "expand." Stage III, *Gochi*, means to "pull the bottom part to form the upper part." The name for stage IV, *Galtsi*, means to "put clay on the surface of a pot." Three of these expressions, *Gidibul*, *Gochi*, and *Galtsi*, are not only technical terms among pottery makers but also expressions used to refer to daily activities. All pottery makers in village S followed these four stages.

#### 3-2. Common finger movement patterns and the unit of process

I observed 60 potters in nine other villages; each of these intensive observation sessions was conducted for over 1 hour, during which time I observed the fine movements of the potter's hands and fingers during each stage. These observations revealed combinations of "finger movement patterns" (FMPs) unique to each maker. I distinguished FMPs by (1) the fingers used and (2) the direction of

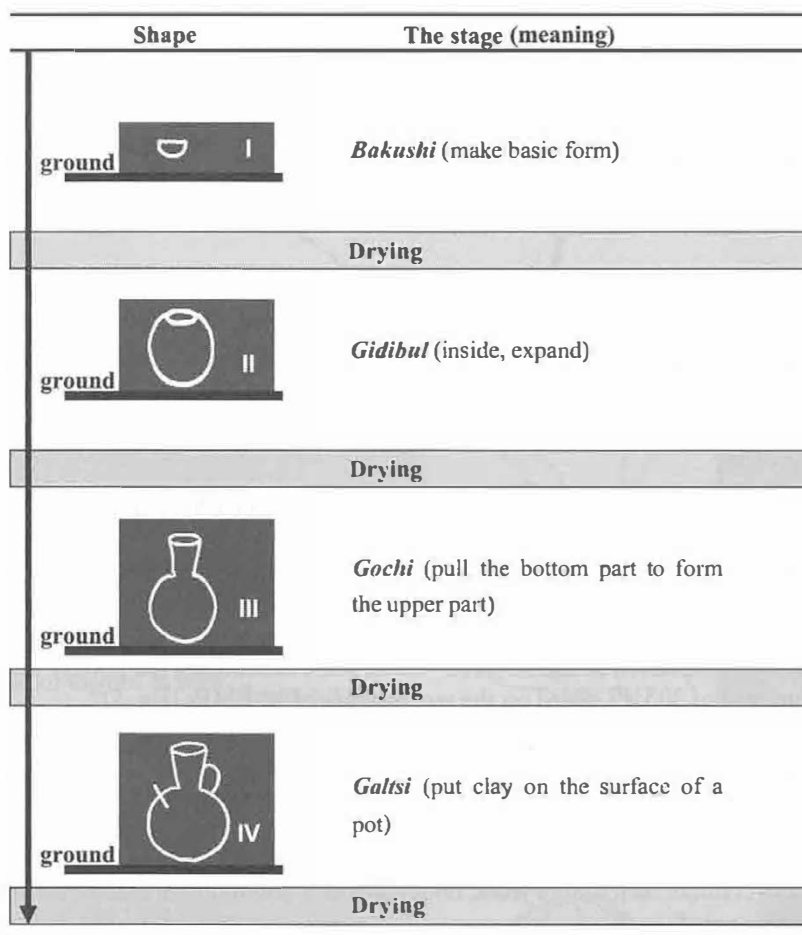


Fig. 2. Four stages of pottery making

the finger movements (Fig. 3). According to this classification, I classified 20 distinct FMPs that were used repeatedly to form a *tila* (Fig. 4). Although potters do not classify finger movement patterns (FMPs), they describe their daughters' pottery making as *mishikan* (which means "forming pots," a special term for pottery making), if their daughters use the common FMPs to make pots and follow the four stages of pot making. Potters differentiate pottery making that uses the common FMPs from simply playing with clay.

When I sorted the 20 FMPs of potter X into the four stages of making *tila*, I found that she used 18 FMPs repeatedly. Of these, she used 12 FMPs independently (Fig. 4). The other six FMPs were components of two sets of continuous movements: (1) she used two or three FMPs one after the other (FMPs 5.6, 5.9, 5.8.9, 6.14), and (2) she used two FMPs gradually to switch from one FMP to another (FMPs 5.6, 6.14, 6.16). All potters I observed used the same sets of continuous FMPs to form *tila*.

Although I delineated the FMPs of pottery making, potters express an FMP or a set of continuous FMPs as general action verbs (Fig. 4; FMPs 5.6, 5.9, 5.8.9, 6.14, 6.16). I collected these action verbs to describe the actions of potter X after spending 3 months learning pottery making from her. Some FMPs (2, 3, 4, 12, 13, 15) did not appear to be identified with an action verb or expression. In addition, potters used different terms for the same set of continuous FMPs. For example, FMP 5.6 is expressed as *bakshi* and *gochi*, depending on the shape of the *tila*. When potters teach their finger



Fig. 3. Finger movement pattern  
Finger used: pad of her thumb; direction of movements: vertical at an angle

movement patterns to their daughters, they merely demonstrate the FMPs and the sets of continuous movements, without verbalizing the action verbs.

Based on the FMPs of pottery making and the action verbs that the potters used to classify them, I propose that variations in pottery making can be analyzed using the “unit of process” (UP); a UP can be defined either as the period of time during which a potter continues to use one FMP or sets of continuous FMPs expressed as action verbs. Using these definitions, the pottery making process of potter X consisted of 30 UPs, based on the repeated use of 18 FMPs (Fig. 5)<sup>(3)</sup>.

### 3-3. Unique procedures of forming *tila*

Potters usually work alone, although daughters are allowed to make pots in the same place as their mothers to learn the pottery process. Daughters gradually learn certain finger movement patterns as they play in their mothers' work places. Although daughters learn pottery making from their mothers, when potters evaluate each other's work, both daughters and mothers sometimes emphasize the differences in their pots<sup>(4)</sup>.

I analyzed the pot-formation processes of potter Y and her five daughters. Observations showed that they had developed their own order of UPs<sup>(5)</sup>, even though they all followed the same four stages. Y's five daughters had developed their own UP orders, which differed from that of their mother<sup>(6)</sup>. The first, second, and third daughters had moved to other villages for marriage, and the fourth and fifth were still living with their parents.

The daughters followed the same UP order for stages I and II, but at stages III and IV none of them had the same UP order (Fig. 6). I examined the first half of stage IV, which is the pot-making stage that shows the most prominent differences in UP order (Fig. 6; note UP orders in the black frame). The procedures of this stage can be explained by the process of forming *tila* and action verbs: potters scratch the surface of the pot, put clay on both the inside and surface of the pot, attach the handle to the pot, and smooth the surface of the pot.















In Fig. 6, potter Y forms the handle and attaches it to the pot; she then scratches the surface of the upper part of the pot using a bean pod and puts clay on the surface of the upper part of the pot. Then she scratches the surface again to make it smooth. The order of potter Y's UP is IN<sub>2</sub>OPQHIM.

The first, second, and fourth of the five daughters scratch the surface and inside of the upper part of the pot with bean pods and then put clay on the surface of the upper part of the pot. Afterward, they form the handle, attach it to the pot, and then scratch the surface again to make it smooth. The UP order is HGHMHIN<sub>2</sub> (Fig. 6). The third daughter scratches the surface and inside of the upper part of the pot with a bean pod, forms the handle, and attaches it to the pot. She then puts clay on the surface of the upper part of pot and scratches the surface again to make it smooth, in the order HIN<sub>2</sub>GMH (Fig. 6). The fifth daughter scratches the surface and inside of the upper part of the pot with a bean pod and puts clay on the inside of the upper part of the pot. Following this, she puts clay

No.	Fingers used	Direction of movement	Picture	Photo
1	five fingers, pad of each finger	From outside to inside (hand: up and down)		
2	Both hands and fingers, pad of each finger	From outside to inside (hands: up and down)		
3	Pad of the thumbs on both hands	Back and forward		
4	Pad of thumbs in both hands • first, second, and third knuckles of four fingers	From outside to inside (hands: clockwise)		
5	Side of the first and second knuckle of the forefingers	Vertical at an angle		
6	Pad of the thumb, side of the first knuckle of the forefingers	Back and forward		
7	Pad of the thumb, pad of the other fingers	From outside to inside (hand: forward and back)		











continue

Fig. 4. Finger movement patterns

No.	Fingers used	Direction of movement	Picture	Photo
8	Pad of the forefinger and the middle finger	Vertical at an angle		
9	First knuckle of the thumb	Vertical at an angle		
10	Pad of five fingers	From outside to inside (hand: clockwise)		
11	Pad of all ten fingers	From outside to inside (hands: downward)		
12	Pad of the thumb	Up and down		
13	Side of the first and second knuckle of the forefinger and the middle finger	Clockwise		
14	Side of the first and second knuckle of the forefinger and the middle finger	Back and forward		

continue



No.	Fingers used	Direction of movement	Picture	Photo
15	Pad of the thumb, the forefinger, and the middle finger	Back and forward		
16	Pad of the thumb and the forefinger	Turning		
17	First knuckle of the forefinger (the back of one's hand)	Back and forward		
18	Palms of both hands	Back and forward		
19	Side of the first knuckle of the thumb and pad of the forefinger	Clockwise		
20	Pad of all fingers	Clockwise		




Making stage	Order of the FMPs in the pottery making process	Action verb(Ari)	Direct translation	The unit of process
 <b>I bakushi</b>	1	<i>tei</i>	taking	A
	2	■	■	B
	3	■	■	C
	4	■	■	D
	5,6	<i>bakushi</i>	making basic form	E <sub>1</sub>
<b>Drying</b>				
<b>II gidibul</b>	5,6	<i>gidibul</i>	expand the inside	E <sub>2</sub>
<b>Drying</b>				
 <b>III gochi</b>	7	<i>guu</i>	scratching	F
	10	<i>guu</i>	scratching	H
	5,8,9	<i>galtsi</i>	putting clay on	G
	10	<i>guu</i>	scratching	H
	11	●	●	I
	12	■	■	J
	13	■	■	K
	5,9	<i>gochi</i>	pulling the bottom part	L
	5,6	<i>gochi</i>	pulling the bottom part	E <sub>3</sub>
	10	<i>guu</i>	scratching	H
<b>Drying</b>				
 <b>IV galtsi</b>	10	<i>gu</i>	scratching	H
	5,8,9	<i>galtsi</i>	putting clay on	G
	10	<i>guu</i>	scratching	H
	5	<i>galtsi</i>	putting clay on	M
	10	<i>guu</i>	scratching	H
	11	●	●	I
	6,14	<i>odo/usu</i>	putting/smoothing	N <sub>2</sub>
	9	<i>galtsi</i>	putting clay on	O
	15	■	■	P
	6,16	<i>odo/usu</i>	putting/smoothing	O
	17	<i>daala</i>	drawing	R
20	<i>usu</i>	smoothing	S	
6,14	<i>usu</i>	smoothing	N <sub>1</sub>	
10	<i>guu</i>	scratching	H	
<b>Drying</b>				

Fig. 5. Pottery making process (potter X, 30 UPs, 18 FMPs)

■ one after the other

■ gradual switch from one FMP to another FMP

■ verbal expression not identifiable ● explains more than one sentence

\*FMP numbers correspond to the numbers in Fig. 4

\*\*If potters give different action verbs to UPs which are constituted from the same FMPs, they are shown as UPs with numbers like E<sub>1</sub>, E<sub>2</sub>, E<sub>3</sub>, N<sub>1</sub>, N<sub>2</sub>.

on the surfaces of both the upper and lower parts of the pot; she then forms the handle and attaches it to the pot. Finally, she scratches the surface of the whole pot again to make it smooth. The fifth daughter uses the order HMGHIN<sub>2</sub>H (Fig. 6).

Analysis of the *tila* making process of 13 potters in village S showed that the process consisted of 30–34 UPs, based on the repeated use of 18 FMPs. Although the potters of village S all use clay taken from the same place, none follow the same UP procedure to form *tila*. At least six procedural patterns are used.

Although these variations may seem like small, incidental details, they are, in fact, examples of how pottery makers follow their own order of UP. Potters maintain that their pots might crack if they do not follow their own UP order. The variations in stages III to IV, as shown by Y and her daughters,



Making stage	Y	First	Second	Third	Fourth	Fifth
 I <i>bakushi</i>	A	A	A	A	A	A
	B	B	B	B	B	B
	C	C	C	C	C	C
	D	D	D	D	D	D
	E <sub>1</sub>	E <sub>1</sub>	E <sub>1</sub>	E <sub>1</sub>	E <sub>1</sub>	E <sub>1</sub>
Drying						
II <i>gidibul</i>	E <sub>2</sub>	E <sub>2</sub>	E <sub>2</sub>	E <sub>2</sub>	E <sub>2</sub>	E <sub>2</sub>
Drying						
 III <i>gochi</i>	F	F	H	H	F	F
	G	G	G	G	G	H
	F	F	H	F	F	I
	H	H	F	G	H	J
	G	G	G	F	G	K
	H	H	F	I	H	L
	I	I	I	J	I	E <sub>3</sub>
	J	J	J	K	J	G
	K	K	K	L	K	F
	L	L	L	E <sub>3</sub>	L	
	E <sub>3</sub>	E <sub>3</sub>	E <sub>3</sub>	H	E <sub>3</sub>	
	H	H	H		H	
	Drying					
The order of UP in the paper	I	H	H	H	H	H
	N <sub>2</sub>	G	G	I	G	M
	O	H	H	N <sub>2</sub>	H	G
	P	M	M	G	M	H
	Q	H	H	M	H	I
	H	I	I	H	I	N <sub>2</sub>
	M	N <sub>2</sub>	N <sub>2</sub>	r'	N <sub>2</sub>	H
	H	r'	O	r	H	r'
	G	r	P	S	r'	r
	H	S	Q	O	r	S
	r'	O	r'	P	S	O
	r	P	r	Q	O	P
	S	Q	S	N <sub>1</sub>	P	Q
	N <sub>1</sub>	N <sub>1</sub>	N <sub>1</sub>	H	Q	N <sub>1</sub>
	H	H	H		N <sub>1</sub>	H
Drying						
IV <i>galtsi</i>					H	
Drying						
FMPs	19	19	19	19	19	19
UPs	33	33	33	31	34	30

Fig. 6. Pottery making process of a mother (Potter Y) and her five daughters (00' Nov-01' Jun) attaching the handle to the pots, r: FMP No. 18, r': FMP No. 19

suggest that potters could make pots without cracks even if they did not follow their own particular order of UP. These differences are related to the weight and thickness of each pot, although they are not reflected in the shapes of the pots. For example, the pots that the fifth daughter makes are usually lighter than those made by the fourth daughter because the fifth daughter skips the "G" UP (Fig. 6), which consists of putting clay on both the outside surface and the inside of the pot.

There are also differences in the *tila* making process used by the 13 potters in village S and compared to that of Y and her daughters, as a result of differences in the clay used in villages G and Ga where Y and her daughters live. These differences are also reflected in customers' evaluations of the durability of the pots. It follows, then, that variations in pottery making may be influenced by cultural contexts and social relationships.

#### 4. VARIATIONS IN POTTERY MAKING AND SOCIAL RELATIONSHIPS

In this chapter, I show that variations in pottery making are due not only to the ability of the makers themselves, but also to the social relationships between makers and users. Users are eager to buy durable pots, and frequently look at the pots in the pottery market even if they cannot afford to buy them. Users communicate with makers by evaluating pots, and makers change their techniques and pots when clients put in orders for new shapes and sizes. The case studies that follow illustrate the method by which pots are evaluated, makers' techniques, and the process by which potters create and change their work.

When buying a new pot, the Ari give first priority to the pot's durability. If outsiders or tourists were to try to choose a durable pot from the hundreds available in local Ari markets, they would likely have a difficult time. The Ari, however, choose durable pots by evaluating the techniques of the pottery makers as well as the characteristics of the clay. Users look for a potter who makes long-lasting pots and describe such makers as *aani wannee*. The term *aani* refers to a human hand in Ari language, although it has many different meanings and is used in various situations. To help explain this word, I describe a case that guided my understanding of *aani* as an expression for evaluating pottery makers.

##### [Case 1]

A woman lives with her husband and two daughters in village G. She has more than 20 pots, and she remembers the history of each pot, including the place and time she bought each one, the situation in which she purchased the pots, and the names of the potters. When I interviewed her about her pots, she explained that some potters cannot make durable pots for her, even though other users may recommend those potters. When she meets a potter who makes a long-lasting pot for her, she evaluates that potter as *aani wannee*.

*Wannee* is also a word with many different meanings that is used in various situations. I assumed the positive connotations of *wannee* in reference to evaluating pottery, and translate *aani wannee* as "having a good *aani*."

It is difficult for many users to find the best potter because they use different ways to evaluate pots and potters, based on their own experiences, such as in case 1. There are several popular potters whom some users have evaluated as *aani wannee*. Unlike the other potters, these potters sell their pots immediately, and they are considered famous among potters. Nevertheless, the other potters do not try to imitate the ways of the potters who have been evaluated as *aani wannee* because they believe that the best pottery making process depends on the potters' *aani*<sup>(7)</sup>.

When both pot makers and users have established a relationship with respect to pottery exchange, they call each other *jaala*<sup>(8)</sup>. For example, even if a potter has not yet made any of the pots her *jaala* has ordered, they can exchange money for the pots when the potter brings them the next time they meet. Some *jaala* users collect and bring wood for cooking to the *jaala* makers every day, to encourage the *jaala* maker to make her pots first. Potters also pay special attention to their *jaala* and give presents of money to their *jaala* for weddings and funerals, as well as pots as gifts. Given these features of the creation and maintenance of *jaala* relationships, it is clear that pottery makers are strongly influenced by their *jaala* relationships.

Whether potters make a uniquely shaped pot is influenced by orders from *jaala* as well as by their knowledge of new techniques. Case study 2 shows that an order for a *durizen* by a *jaala* encouraged a pottery maker to start making *durizen* by trial and error. A *durizen* is a decorative object for huts that is placed on the apex of thatched roofs. This uniquely shaped earthenware is becoming popular among the Ari. In recent years, since missionaries have come to convert the Ari people to Christianity, the Ari have gradually come to accept *durizen* as roof decoration<sup>(9)</sup>. When I interviewed 18 pottery makers, I found that six of them could make *durizen*.

##### [Case 2]

Potter Z took an order for a *durizen* from her *jaala*. Her *jaala* liked her *aksh*, which is a pan used to bake *injera* [a typical staple food in Ethiopia made from *teff* flour, a cereal of Ethiopian origin]. Even though the potter's mother did not make *durizen*, Z started to make such pots by trial and

error. After finally creating her own way of making *durizen*, she took the trouble to call me and allowed me to photograph her *durizen*.

In contrast to the *tila* pottery production stages, the upper parts and lower parts of *durizen* are formed separately and then combined into one object. Fewer FMPs are required for making *durizen* than for making *tila*. Furthermore, new FMPs are part of the *durizen* formation process. For example, when makers draw a line between the bottom and upper parts of a *tila*, they use the back of their forefinger. When they make a line at the bottom of *durizen*, they use the pad of their forefinger. It seems easier for potters to use the pad rather than the back of the forefinger to make a line at the bottom of the *durizen* because otherwise the other fingers touch the side and change the shape of the bottom of the *durizen*. When I tried to use the pad of my forefinger to make a line at the bottom of the *durizen*, I did not know how to push the pad of my forefinger into the clay and required several attempts to get used to doing this.

Ari pottery makers have also developed a new posture and a new way of drying *durizen*. When they make a *tila*, potters squat down cross-legged on the ground. Placing the *tila* in front of them, they turn the *tila* itself. However, when they make *durizen*, they stand up and move around the object. When they dry the *tila* at each stage, they put the *tila* in the shade of their hut. However, when they dry *durizen* during the first stage, they cover the joint part of the two separate objects with enset leaves.

Three points should be noted regarding the creation of newly sized and shaped pots by Ari pottery makers. First, they create new shapes of pots, such as *durizen*, by devising new FMPs. Second, an order from a *jaala* can trigger pottery makers to create new sizes and shapes of pots. Finally, not all pottery makers have equal knowledge of new forming techniques. This shows that individual differences with respect to technique are based on individual experiences and orders from *jaala*.

## 5. CONCLUSION

My field observations of Ari pottery makers examined techniques of the body, such as FMPs, the UP, and the process of creating new sizes and shapes for pots by focusing on relationships between pottery makers and users. Observations and analysis revealed four main characteristics.

First, I found that Ari pottery makers exhibit 20 patterns of common finger movements, and they follow four stages in making pots. Although I have defined FMPs, potters also assess common finger movement patterns in forming *tila*. When daughters start forming *tila* using common finger movement patterns and following the four stages of pot making, mothers acknowledge their daughters as potters by using the term *mshikan*, which signifies pottery making in Ari.

Because each maker develops a different UP order to form pots, each order constitutes the technological unit of forming a functional pot that does not crack. Comparison of the pot-making processes of potter Y and her five daughters revealed that each UP is an independent unit for completing pots, and potters may exchange or omit a unit, especially in the transition from stages III to IV.

Third, each potter follows her own order of UP to make pots. Although the five daughters of Y all learned from their mother, their UP procedures in making pots not only differed from that of their mother but also from each other. Finally, potters may invent new FMPs to create new sizes and shapes for pots to accommodate orders by *jaala* users. Pottery making in the Ari area is a personal equation involving each individual potter; differences, such as those involved in the order of performing certain processes, may be based on the *jaala* relationship between makers and users.

Ari potters can follow different UP orders to make pots of the same shape and size. Although pottery-making techniques, such as finger movement patterns and the four stages of pot making, descend from mothers to daughters, the unique UP procedure in making pots is open to some change. Variations in pottery making are related to the weight and thickness of each pot and the customer's evaluation of the durability of the pots. This shows that how potters make pots is influenced not only by technological factors but also by social factors, such as the *jaala* relationship. This relationship

can be a trigger that encourages potters to create objects of a number of different sizes and shapes through trial and error. Pottery making in the Ari area is one aspect of their society, and potters have developed their techniques on the basis of their social relationships. In conclusion, the characteristics of Ari pottery making are influenced by social relationships, such as those between makers and users, and by the evaluation of pots by both users and other potters.

## NOTES

- (1) The “technounit” is an integrated, physically distinct, and unique structural configuration that contributes to the form of a finished artifact (Wendell 1976: 38). For example, to detach a large leaf from a tree and use it as a container is to create one technounit. A bone awl fitted on a wood haft is an example of two technounits (Wendell 1976: 44). A typical spear consists of three technounits: a point, shaft, and point-shaft binder. Wendell regarded the technounit as a universal basis for material culture.
- (2) Enset (*Ensete ventricosum*) belongs to the family Musaceae in the order Scitamineae. It looks like a large, thick, single-stemmed banana plant. More than 20 percent of Ethiopia’s population consumes enset (more than 10 million people, although the precise number of enset users is unknown); most enset use is concentrated in the highlands of southern Ethiopia (Brandt et al. 1997).
- (3) Three FMPs (17, 18, 19) out of 20 were used to form two different kinds of decoration on a *tila*. The total numbers of FMPs to form a *tila* could be 18 or 19 depending on the decoration that potters choose.
- (4) When potters evaluate their pots, they use the word *aani*, such as in the Ari expression *aani gara*. In direct translation, *aani* means “hands,” and *gara* means “different.” Thus, *aani gara* means “hands are different.” The expression *aani gara* is a positive affirmation of a potter’s unique procedure of forming and firing pots. *Aani* can be regarded as pottery making. Daughters and mothers use this expression to demonstrate their unique pottery making processes and the differences in the characteristics of their pots. According to my survey, this expression indicates the uniqueness of a potter’s work. I also identified six other examples of *aani* expressions.
- (5) Some makers, who usually follow the same pot making stages, may occasionally alter the stages when they are in a hurry to make pots for the next market.
- (6) The UP orders of Y’s five daughters may differ from that of their mother when they start making a *tila*. According to my observations of six other potters and their six daughters, about half of them followed the same UP order as their mothers. There is thus little difference between potters and their daughters in the way and order of pottery making (Kaneko 2005b).
- (7) *Aani* would be translated as “technique” in English. I regard the term *aani* as one of the important characteristics of CBT, as it is based on the two-way relationship between users’ demands and makers’ trials and errors. I need to analyze *aani* further to draw firmer conclusions concerning CBT.
- (8) There are several case studies of *jaala* relationships between potters and users (see Kaneko 2005a). These social relationships are common among the Ari, not only between potters and users but also between farmers in highland and lowland areas, blacksmiths and clients, and others. Gebre (1995) mentioned that *jaala* relationships occur among different ethnic groups in southwestern Ethiopia in the exchange of products and information.
- (9) Before the arrival of Christian missionaries, the Ari people believed that they faced death if they put an object on the apex of a thatched roof.

## REFERENCES

- Barnett, H. G.  
1953 *Innovation*, New York: McGraw-Hill.
- Brandt, S. A., Spring, A., Hiebsch, C., McCabe, T., Enadale T., Mulugeta D., Gezachew W., Gebre Y., Shigeta, M. and Shiferaw T.  
1997 *The “Tree Against Hunger” Enset-Based Agricultural Systems in Ethiopia*. Washington, D.C: American Association for the Advancement of Science with Awassa Agricultural Research Center, Kyoto University Center for African Area Studies and University of Florida.

\*Web-site: <http://www.aas.org/international/africa/enset/index.shtml>

- Freeman, D. and Pankhurst, A. (eds.)  
 2001. *Living on the Edge: Marginalized Minorities of Craft Workers and Hunters in Southern Ethiopia*. Addis Ababa: Addis Ababa University.
- Gebre, Y.  
 1995 *Ari of Southwestern Ethiopia*. Addis Ababa: Addis Ababa University.
- Hewes, G. W.  
 1957 The anthropology of posture. *Scientific American*. Vol. 196. No. 2: 122–129.
- Kaneko, M.  
 2005a *Contextualizing the Process of Pottery Making: Learning, Praxis, and Creativity of Community-based Technology by woman Craft Workers in the Ari, Southwestern Ethiopia*. Ph.D. dissertation. Graduate School of Asian and African Area Studies. Kyoto University. (in Japanese)  
 2005b Learning process of pottery making in Ari people, Southwestern Ethiopia. *Environment, Livelihood and Local Praxis in Asia and Africa*, eds. Shigeta, M. & Yntiso, G. *African Study Monographs*. Supplementary Issues No. 29: 73–81.  
 2006 Creating new styles for clients: usage and classification of pots among the Ari, Southwestern Ethiopia. *Proceedings of the Kyoto Symposium: Crossing Disciplinary Boundaries and Re-visioning Area Studies*: 237–243.
- Kawada, J.  
 1991 Notes on “the techniques of the body” among West African people. *Journal of The Anthropological Society of Nippon*: 377–391.
- Lemonnier, P.  
 1993 Introduction. In Lemonnier, P. (ed.), *Technological Choices*. London and New York: Routledge, pp. 1–35.
- Lock, M.  
 1993 Cultivating the body: anthropology and epistemologies of bodily practice and knowledge. *Annual Review of Anthropology* Vol. 22: 133–155.
- London, G. A.  
 1991 Standardization and variation in the works of craft specialists. In Longrace, W. A. (ed.). *Ceramic Ethnoarchaeology*. Arizona: University of Arizona Press. pp. 182–204.
- Mauss, M.  
 1968 [1950 (1936)] *Sociologie et Anthropologie*. Paris: Presses universitaires de France.
- Pfaffenberger, B.  
 1992 Social anthropology of technology. *Annual Review of Anthropology* Vol. 21: 491–516.
- Shigeta, M.  
 1996 Wisdom of Ari: community-based technology in South Omo. *Nilo-Ethiopian Studies Newsletter* No. 3/4: 18–20.
- Wendell, H. O.  
 1976 *An Anthropological Analysis of Food-Getting Technology*. New York, London, Sydney, and Toronto: John Wiley and Sons, Inc.