"I KNOW HOW TO MAKE POTS BY MYSELF": SPECIAL REFERENCE TO LOCAL KNOWLEDGE TRANSMISSION IN SOUTHWESTERN ETHIOPIA

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ABSTRACT The objective of this paper is to determine the characteristics of local knowledge transmission between mothers and daughters by analyzing the learning order of pottery making, the hand and finger movements involved, the different patterns of pottery making, and the interaction between mothers and daughters in a pottery workshop. According to observations of 12 mother-daughter groups for a period of nine months, between November 1998 and March 2002, knowledge transmission between mothers and daughters has three main characteristics. First, the daughters started making pots, the mothers do not teach their daughters with verbal communication; they observe their daughters' trials and errors when making pottery without giving any advice. Second, mothers relate the physical growth of their daughters to the number and size of pots they have made themselves. Thirdly, daughters learn pottery making techniques under various conditions and diversify and create their own pottery making procedures, which are different from their mothers. The characteristics of the learning processes of potters that are the result of the interaction of the potters with their natural environment and their social relationships keep creating new techniques in pottery making and new shapes of pots.

Key Words: Local knowledge transmission; Pottery making; Trials and errors; Ethiopia; Aari.

GIRLS EXPLAINED THAT THEY LEARNED TO MAKE POTS BY THEMSELVES

I started learning how to make pots during my research with a woman potter in Southwestern Ethiopia. My experiences have led me to focus, in particular, on the variations in pottery making resulting from potters' interactions with the natural environment through their hands, and their communication with the users of their products. When I started my research in the area in 1998, aluminum products and plastic wares were commonly available in local markets. However, although the local people could afford to buy these products, they preferred to use local crafts such as pots for cooking.

During the very first stage of my fieldwork, simply making the round shaped bottoms of the pots and producing workable pots after a few hours of firing brought endless surprises. Then, through my fieldwork, I came to understand that the potters' techniques had been constructed to adjust to their daily lives and the natural environment. However, what was difficult for me to understand was how a little girl could make her very first pot all by herself, without any help from her mother, and exactly why customers were eager to buy it as a usable craftwork at the marketplace.

I observed that potters who were mothers took clumps of clay, formed them in mid-flow, and gave them to their daughters; then the girls finished making the

pots. The mother of the first girl I have described did not help her daughter make the pot. This mother explained to her relatives and other potters that her daughter started making pots by herself, when her daughter completed making her pot, which is called *mishikan* in the Aari language. Some potters left their daughters who had just started making pots at a grandmother's house so that the mothers could get remarried with males in different villages. Some often said that the hands of their daughters knew how to make pots when they left their daughters.

However, what I observed of daughters' pot making was that they had hardly made pots, and instead had observed their mothers' pot making. In most observations, the daughters faced the clay in front of them, and they used their hands to form their pots. When I asked daughters whether they learned how to make pots from their mothers, most daughters answered that they learned how to make pots by themselves.(1)

This paper attempts first to describe the process of local knowledge transmission from the mothers to their daughters by focusing on the specific order of learning to make different kinds of pots to get to know the 'techniques of body,' and the interactions between mothers and their daughters in their workplaces. Next, the paper examines the characteristics of local knowledge transmission. It considers 'the process of pottery making' as the whole sequence, from clay digging to pot forming and open firing to selling pots to customers at the market places.

PREVIOUS STUDIES AND RESEARCH AREA

From Observation and Mimicry to Participation to Community Practices

It is possible for researchers to apprehend daughters' learning of the pot making as the process of daughters 'observing' their mothers making pots in their workplaces and the process of their 'mimicking' their mothers' way of making pots: Even daughters explained that they learned to make pots by themselves.(2) This approach could lead us to understand that pot making is a static process of local knowledge transmission, which is included among techniques of body that are passed from one generation to another.

Mauss (1976: 128) regarded human behavior as taking in the sequences of others' motion before that person's face, and pointed out the concept of authorities, which contains the formal, authoritative, and proven behaviors in societies that exist as social elements. His observations of individual human behaviors, which were socially created, transmitted, and preserved in societies, are highly esteemed (Tanabe, 2002: 543). However, the study on the constructional elements of the learning process in the specific style of production did not develop very well, not only in the field of anthropology but also in archaeology (Hebrich & Dielter, 2008: 223).

The concept of legitimate peripheral participation (LPP) was a big shift from the traditional concept of the learning process. The concept of LPP posits that techniques are taken from one generation to next generation. According to this

concept, observations and mimicking are not the main behavior involved in learning techniques (Lave & Wenger, 1991: 95). That is, the process of acquiring techniques is not practiced alone but through social relationships and communications with others. Such a practice is strongly related to establishing an individual's identity. This perspective regards the learning process as the process of participation within certain communities (Lave & Wenger, 1991). Lave & Wenger focused on communities that have practiced their knowledge transmission through systems of apprenticeship, such as a tailors group, and they called such groups communities of practice.(3) Lave & Wenger (1991) claim that freshmen apprentices already have a specific role that is more than observing the work, and that they already participate in their communities of practice through that role. Moreover, according to Wenger et al. (2002: 4), 'tacit knowledge,' which is difficult to verbalize could be transmitted through their participation in their communities of practice.(4)

Some contest the validity of focusing on only the process of participation in the communities of practices. Gosselain (2008: 176) pointed out, citing a work of Lave & Wenger (1991), that learning was best understood if envisioned as a continuous process by which individuals acquire knowledge and build their identity through participation in particular communities rather than as the particular moment during which two or more individuals interact. Gosselain (2008: 175) further suggested that we must recognize that cultural transmission is distinct from culture dynamics or cultural change, and that transmission is a continuous process among humans who contribute to the building of local cultural repertoires. Yet, transmission is only a part of the dynamics of such repertoires and probably not the most significant one.

This paper, which takes the view that is similar to that of Lave & Wenger (1991), which is that people gain knowledge through communication with community members, describes the learning processes of potters by paying special attention to the interactions(5) between potters and elements of the natural environment, such as clay. I understand that changes and innovations in pottery making techniques are strongly related to the techno life histories of potters, i.e., their life course and events have strong influences on their pottery making techniques (Kaneko, 2013). The girls whom I observed during my fieldwork were just beginning to learn pottery making techniques; yet, at the same time other potters could have considered them full-fledged potters. This paper considers the learning process of girls' pottery making, as not only the knowledge acquisition process for pottery production but also the process of socialization within the potters' community. It also pays attention to discourses about hands, which involve techniques of the body in pottery making, as cues for examining local knowledge transmission via socialization within the potters' community.

Intoh (2011: 107) pointed out that variations in pottery making in Oceania, which was created over a period of thousands of years, can be understood by considering not only ecological factors but also sociological elements that influence the differences between pots as sociocultural objects and as materialities that have qualities and agencies of being composed of pots. Although this paper focuses on the various factors that influence girls' learning processes over a short period of time, the characteristics of local knowledge transmission can provide clues to

understanding long-term changes in pottery making.

The reason why this paper focuses on the expression, "I know how to make pots by myself," is related to my pot making experiences in the field. Potters preferred nonverbal communication when showing me how to make pots in their workplace. I also learned that I was able to better develop my ability of making pots when I myself touched and formed the clay into specific figures than when I followed the ways other potters worked. I comprehend that the above expression of the young girls in my study area emerged from experiences similar to that of mine.

This perspective on understanding the knowing process of the girls' pottery making would be related to the possibilities that most abstract ideas and discussions are based on the analogy of concrete embodiment (Tokoro & Kawai, 2011). This paper regards nonverbal elements as empirical data to describe the knowing process of pottery making. These elements include: The pots, which include the knowing order of the girls' learning to make different kinds of pottery, their bodies, especially their finger movement patterns (Kaneko, 2011), and the special arrangement in their work places that would offer information to girls for learning pottery making. In so doing, the paper examines unique characteristics of Aari potters' knowing process of pottery making.

The research period was nine months, from November 1998 to March 2002. I observed 12 pairs of potters and their daughters in two villages, village 'S' and 'G,' in Southwestern Ethiopia. I observed them in five periods: Period I: November 1998–January 1999, Period II: December 1999–March 2000, Period III: November 2000–February 2001, Period IV: June–July 2001, Period V: January–March 2002. I also observed five girls who were under six years old and who had not yet made pots to compare with potters' techniques of body.

The General Background of Research Area on Pots and Craft Workers' Community, *Tila mana*

The Aari people live in a highland area at around 1500–2500 m. They cultivate root crops, i.e., ensete, taro, and yam, and cereals, such as maize, sorghum, and barley, as staple foods. Coffee and corarima are cash crops for them. Their livelihood is based on both subsistence farming and cash economy, depending on the situation (Shigeta, 1988).

The Aari people enjoy various kinds of foods and ways of cooking. They avoid having the same type of food and ways of cooking in every meal. Their rich dietary habits are supported by the variety of crops they produce and the local cooking utensils (e.g., different types of pots) they utilize. The Aari people use at least 60 types of local pots. Two-thirds of these types serve as cookingutensils. These diverse types of local pots can be categorized into one of four different shapes (Fig. 1). Each type is used for different purposes, depending on the size of the different part of the pot. Take for example the *bun-til*; *bun* means coffee and *tila* has two meanings: The name of pots in general, and the specific feature of pots used for boiling coffee leaves to make tea (shape A in Fig. 1). *Bun-til* is 20 cm long in height. The *bun-til* has almost the same features as the *tila* used for cooking cabbage, but the mouth of the *bun-til* is 2 or 3 cm narrower than

the *tila* used for cooking. The Aari people care about how to use the different kinds of pots depending on: (1) the type of food they cook, (2) the way of cooking, (3) a person's social status and health condition, and (4) the context of a meal (e.g., if it is prepared for participants neighborhood work party, or for guests in the house). People are expected to own almost all kinds of pots for these specific contexts.

Woman potters who belong to the craft workers' group called *tila mana* make the pots. The population of Aari is estimated from 120,000 to 180,000, and among them were about 350 woman potters, in 2002. There were about 20 villages all over the Aari area in 2002. *Tila mana* is culturally, socially, and economically marginalized by farmers' groups, called *kantsa*. In most cases in Ethiopia, potters live near clay sources with their families and relatives. They live within a patrilocal residence system, and one clan member dominates most members within the village. Both *tila mana* among the Aari and the Aari people in general follow a patrilineal society in terms of the inheritance of land. The clan is the unit for getting married. When *tila mana* men try to find their wives, they go out from their village to find girls who belong to a different clan. If a man finds a girl who accepts his proposal, he takes her from her father's village to his village to start their married life.

Tila mana women are engaged in full-time pottery making throughout the year. *Tila mana* men usually help their wives' make pottery, in addition to cultivating their small fields to support their subsistent lives. Each potter makes between one to 15 pots in a day. Potters sell pots to users at local marketplaces. In addition to making a living for the household, earnings from pots selling sometimes cover medical expenses for household members.

	name	usage	language	shape
A	*tila*	For steaming root crops, boiling cabbage, brewing alcohol, etc.	Aari	
B	*disti*	For cooking stew, etc.	Amharic origin	
C	*jebena*	For boiling coffee	Amharic	
D	*aksha*	For baking injera and roasting coffee beans and cereals	Aari	

Fig. 1. Aari pots and its usage.

Playing, Learning or Performing Tasks: Children's Positions at Their Mothers' Workplaces

Children who are born as members of *tila mana* grow up in their mother's workplace, which is within their compound. It is common to see potters bringing their children to their workplaces and breastfeeding their babies while making pots. It is also common that potters give clay as playthings to their babies when their babies cannot stop crying. During 30 minutes of observation in one instance, I observed their children doing many things while potters concentrated on making pots. For example, babies who could sit by themselves hit a stone with a shard of a pot as play; children who could walk by themselves played with clay, and made various shapes with clay, similar to the shapes of the pots made by their mothers. Girls who had started talking took on the same posture as their mothers and used broken pots for making new pots.

Around the age of two or three, children start assisting their mothers in making pots. For instance, upon receiving instruction from their mothers, children carry partly formed pots to workplaces and cover them with taro leaves to prevent them from drying completely. In addition, children bring water for making pots and, crystal for polishing pots from a main house to their mothers. These activities are considered the same as the other household tasks that children perform under their mother's instruction.

I often made observations of how potters' children learn making pots. In one instance, I observed a potter modifying her daughter's pots, pots that the daughter made by watching her mother's example. This potter showed her daughter the movement of hands and fingers when forming the edge of a pot's, and used verbal instruction saying, "do it like this." Little girls often become full-fledged potters while participating in their mothers' pot making activities at their workplaces. However, other than this particular instance, I never observed mothers showing their daughters how to move their hands and fingers for making pots. Although girls sometimes make pots that are almost of the same shapes as those made by their mothers, mothers call pots made by their daughters as *reega*, which means 'made for fun.' They strictly differentiate their pots from the adults' pots, called *tila mishikan*, a term which specifically refers to the formation of pots in pottery making, rather than a general term for making or producing.

LEARNING PROCESS OF POTTERY MAKING AMONG GIRLS

The Very First Pot That Girls Make

It is said that the *bun-til*, which is 'coffee leaves pot,' is the first pot that beginners make. Girls, whom I observed in village S and village G, started making *bun-til* as their very first pot. Some potters explained to me that girls would not be able to make *tila* successfully if they were to start by making any other kind of pots than *bun-til*.[6] The finger movement patterns for *tila* making, and the way of

drying it are different from pots of other shapes (Fig. 1). As an example, making stages A and C (Fig. 1) requires four stages to form pots, including drying, while making stages B and D (Fig. 1) requires only three and two stages, respectively (Kaneko, 2011). In addition, the number of finger movement patterns for making A (Fig. 1) is 20, and three additional types of finger movements are needed to make B. Both C and D add an additional two kinds of finger movements. (Kaneko, 2011). In terms of finger movement patterns, Aari potters learn most of the technological elements for making various kinds of pottery during the very first stages of the learning process.

Each potter works individually, at her own working place. Although it was not taboo for potters to visit and observe other potters working, they do not have much spare time to do so. In this situation, potters and their daughters work in the same places until their daughters move to other villages upon marriage. When girls first start making pots, they sit less than 1 m away from the mother, in front of the mother to the left or to the right. Because of this positioning, the daughter could observe and understand the position and movement of her mother's hands and fingers, and would follow her mother's instruction.

Potters take a clump of clay, start shaping it into pot form in front of their daughters, and pass it to them. The girls then continue from where their mothers stopped and make potsby themselves. Girls can use specific hand and finger movement patterns similar to that of their mothers. Yet, mothers of these daughters explained to their relatives and to other potters that their daughters started making pots with the specific words, *tila mishikan* that means forming pots in pottery making only. When I asked potters why they do not modify their daughters' pots, they answered that their *aani* (hand in the Aari language) and daughters' *aani* are different. The expression *aani* is used in various contexts, many of which are related to pottery making and the livelihood of Aari people to understand differences in the results of the activities among them (Kaneko, 2011).

When girls first start making pots, it is highly likely that they engage in the similar kind of work when their mothers make smaller pots (e.g., *bun-til*). However, this similarity ends when mother potters make bigger pots, which is a different work from making smaller pots. One year into pot making profession, girls no more need to sit next to their potter mother. Sometimes they engage in pot making alone. One mother and daughter pair that I observed did not engage in the same procedure, and they never sat to work in the same workplace (Fig. 2). Although an elder

	1999/12/9	12/10	12/20	12/22	12/27
Mother				×	
Younger sister		∗	×		
Elder sister		∗			×

Different works Same work × No work ∗: Sitting in front of each other

Fig. 2. Potter's work place: The case of a mother and two daughters.

sister and a younger sister did the same work in one day, they were seated more than 2 m apart where they could not look at each other's hands and fingers.

Making Bigger Pots

According to interviews held with potters, once girls mastered making *bun-til*, they are supposed to proceed and learn how to make *ekena-til* a cooking pot for Ethiopian kale. Most potters emphasized that the process of learning pot making should proceed from smaller size to bigger ones. They explained about the different sizes of pots with a motion of their hands (e.g. potters stretched their hand while explaining the height of pots, and joined palms of both their hands to show the bottom size of different pots). In this section, I examine the learning process by analyzing cases of three girls, Ita, Asa, and Simi. I conducted these Observations in 2001 in village S.

My first case, Ita, had been making pots for four years. She had six elder siblings. She was the last child of her parents. Two of her three elder sisters had moved out from their father's village, upon marriage, to other villages. Ita was making pots with her mother and elder sister, Asa, the second case, in the same workplace. Asa case, had been making pots for more than seven years at the time of study. Simi, my third case, had been making pots for over seven years. She was her parents' first child. She had five younger siblings at the time of this study.

Ita, Asa, and Simi had learned making eight different kinds of pots during five periods: Period I: November 1998–January 1999, II: December 1999–March 2000, III: November 2000–February 2001, IV: June–July 2001, V: January–March 2002. Five out of eight kinds of pots are *tila* shaped (shape A in Fig. 1). The other three kinds represent *disti* shaped (shape B in Fig. 1), *jebena* shaped (shape C in Fig. 1), and *aksha* shaped (shape D in Fig. 1) each. Analysis of their *tila* making and learning process, in all five periods, revealed at least four characteristics (Table 1). First, there is a specific learning order of pot making. In the cases of the three girls, all started pot making with *bun-til* (A1), and proceeded to make *ekena-til* (A2). Second, the girls used the same finger movement patterns repeatedly to form larger *tila* and added the drying steps for making larger types of *tila*.

The third characteristic is that, once they mastered making a particular kind of pot (e.g., A1), the girls then would eventually make a number of A1 pots at a time. According to the three girls in our case studies, they engage in making a particular type of pot in mass when, as they literally expressed, "their hands become soft" (*aani rangami* in Aari language). I experienced this figurative expression of hard/soft on several occasions. On one occasion, a potter commented that I was making holes in the pots because my hands were 'hard.' Girls who were making pots alongside me also commented that I couldn't make a lot of pots as my hand were 'hard,' and suggested that I could make many pots and faster if my hands were soft. One girl expressed what a 'soft hand' looks like with a motion of her hands dangling.

The fourth characteristic is that girls decided to proceed to learn a different kind of pot making by themselves. For instance, Ita could make A1 and B shape

Table 1. The learning processes of three girls in village S (November 1999–March 2002)

Ita: She had been making pots for four years

	A1	A2	B	A3	C	A4	A5	D
I	●	●	●	×	×	×	×	×
II	●	●	●	○	×	×	×	×
III	●	●	●	●	×	×	×	×
IV	●	●	●	●	×	×	×	×
V	●	●	●	●	×	×	×	×

Asa: She had been making pots for more than seven years

	A1	A2	B	A3	C	A4	A5	D
I	●	●	●	●	×	×	×	×
II	●	●	●	●	●	○	×	×
III	●	●	●	●	●	●	◎	×
IV	●	●	●	●	●	●	◎	×
V	●	●	●	●	●	●	◎	●

Simi: She had been making pots for more than seven years

	A1	A2	B	A3	C	A4	A5	D
I	◎	◎	◎	◎	×	×	×	×
II	◎	◎	◎	◎	◎	×	×	×
III	●	◎	●	●	●	◎	◎	×
IV	●	●	●	●	●	◎	◎	×
V	●	◎	●	●	●	●	◎	●

● formed (observation data) ○ made (interview data)
◎ oftern made (interview data) × never *tila* shap

A1: *bun-til*, A2: *ekena-til*, B: *disti*, A3: *mosa-til*, C: *jebena*, A4: *gabija-til*, A5: *sika-til*, D: *buna-aksh*. Period I: 1998.11–1999.1, II: 1999.12–2000.3, III: 2000.11–2001.2, IV: 2001.6–7, V: 2002.1–3.

pots in Period I (Table 1), but she couldn't make *mosa-til* (A3) in that period. This was despite her mother's instruction that she should make *mosa-til*.(7) It took Ita about two years to get to make *mosa-til*. On the other hand, Asa and Simi were able to start making three different kinds of pots in the same period. During all five periods that I observed, the three girls decided to make the subsequent types of pots within the learning progression by themselves.(8)

How to Make Different Kind of Pots from *Tila*

The finding that girls proceed to learn pot making from smaller pots to bigger ones, works not only for *tila*-shaped pots but also for pots of other shapes (e.g., B, C, and D shapes in Fig. 1). For example, the largest circumference of shape B pot is a bit smaller than shape A2 pots. The height and largest circumference of a shape C pot, which Asa and Simi made in period II, was a bit smaller than an A3 (Table 1). In addition, all three girls made shapes B, C, and D pots after

Table 2-1. The learning process of six girls in village S, from June to July 2001

	A1	A2	B	A3	C	A4	A5	D
Kari (six months)	●	×	×	×	×	×	×	×
Masa (three years)	●	●	◎	×	×	×	×	×
Ita (four years)	●	●	●	●	×	×	×	×
Mari (more than four years)	●	●	●	◎	●	×	×	×
Asa (more than seven years)	●	●	●	●	●	●	◎	●
Simi (more than seven years)	●	◎	●	●	●	●	◎	●

● formed (observation data) ○ made (interview data)
◎ often made (interview data) × never *tila* shape

A1: *bun-til*, A2: *ekena-til*, B: *disti*, A3: *mosa-til*, C: *jebena*, A4: *gabija-til*, A5: *sika-til*, D: *buna-aksh*.

Table 2-2. The process of pottery making of six girls in villageG, from May to June 2001

	A1	A2	B	A3	C	A4	A5	D
Aba (six months)	●	●	●	○	●	×	×	×
Suna (one year)	●	●	●	●	×	×	×	●
Taka (one year)	●	●	×	×	×	×	×	×
Liya (two years)	●	●	●	○	●	×	×	×
Masa (more than six years)	●	●	●	●	●	×	×	●
Maga (more than eight years)	●	●	●	●	○	●	●	○

they learned to make *tila*-shaped pots. As was shown in the previous section, making shapes B, C, and D pots involves different technological characteristics, such as finger movement patterns and the number of drying stages, which are different from those used in making *tila*-shaped pots.

The same research was conducted with 12 pairs of mothers and daughters, six pairs in village S (Table 2-1) and six in village G (Table 2-2). According to the data in Tables 2-1 and 2-2, even though six girls in village S followed the same order, with the number of pot types being proportional to the length of their learning period, for six girls in village G, this proportion was not equal to the length of their learning period. All six girls in village S made pots in their mothers' workplaces with their mothers. In contrast, Aba and Suna in village G, who had been making pots for about one year, lived with their grandmother, and made their pots in their grandmothers' workplaces.

None of the six girls in village S went to school; whereas, two girls, Taka and Masa in village G went to elementary school during the study period.[9] In 2010, Taka went on to junior high school; whereas Masa got married and gave birth to two children. As shown in Table 2-2, Suna, who had been making pots for one year, could make more kinds of pots than Taka did, possibly because Taka's formal education may have had some negative influence on her pot making skills. However, in 2010, Taka could also make the same kinds of pots that Suna could make.

Tables 2-1 and 2-2 show the order of learning how to make the different kinds of pots in village S and village G. Girls in both villages followed the same learning process (e.g., learning from smaller size to bigger size). However, some girls in village G started making shape D pots much earlier than did the girls in village S.(10)

Among the girls in village G, two started making shape D pots earlier, before they learn making shapes A4 and A5. In one of these cases, Masa, two circumstances may have encouraged her to make shape D pots earlier: (1) her mother made shape D pots almost every day, which might have provided Masa ample experiences of shape D pots making, (2) Masa's mother had ordered Masa to make shape D pots before making A4 and A5. Masa's elder sister, Maga, however, did not make shape D pots, but rather made shapes A4 and A5. Her experience suggests that although mothers and relatives have some influences over girls a certain type of shape at a certain stage, girls could decide to make the next type of pot by themselves.

The argument that young girls could decide by themselves as to when they would learn to make the next kind of pot also applies to married women potters. When I compared the types of pots made by girls with those made by married potters in village S, I found that two newly married potters (S8 and S9, Table 3) could not make some types of pots. In addition, I observed that some married potters concentrated on making pots of shapes A3, A4, and A5. These three kinds of pots are most popular, that is, they have high demand on the local markets.

Table 3. The learning process of 18 potters, march 2000

		A1	A2	B	A3	C	A4	A5	D1	A6	D2
unmarried	S2	●	×	×	×	×	×	×	×	×	×
	S3	●	●	●	○	×	×	×	×	×	×
	S4	○	○	○	○	×	×	×	×	×	×
	S5	●	●	●	●	●	○	×	×	×	×
	S6	●	○	○	●	○	×	×	×	×	×
married	S8	●	○	○	●	○	×	×	●	×	×
	S9	○	○	○	●	○	●	●	○	○	×
	S10	○	○	○	●	○	●	●	○	○	×
	S11	○	○	○	○	○	○	○	○	○	○
	S13	●	●	●	●	●	●	●	●	○	●
	S15	○	○	○	●	○	●	●	○	●	○
	S16	○	○	○	○	○	○	○	●	○	●
	S17	●	●	●	●	●	●	●	●	○	○
	S18	○	○	○	●	●	●	○	○	○	○
	S21	○	○	●	●	○	●	●	○	●	○
	S22	○	●	●	●	●	●	●	●	●	●
	S23	○	○	○	○	○	○	○	○	○	○
	S26	○	●	○	●	○	●	○	○	○	○

● formed (observation data) ○ made (interview data)
× never *tila* shape

A1: *bun-til*, A2: *ekena-til*, B: *disti*, A3: *mosa-til*, C: *jebena*, A4: *gabija-til*, A5: *sika-til*, D1: *buna-aksh*, A6: *Mataja*, D2: *bulsh-aksh*.

However, as potters get older or when relatives or with changes in their sociocultural contexts, they could concentrate on making some specific kinds of pots intensively (Kaneko, 2007). This suggests of dynamism in learning and practicing pot-making skills that potters could learn and change their pottery making techniques in all life stages as they encounter new sociocultural and economic contexts, and make decisions in response to demands of such contexts.

DISCUSSION AND CONCLUSION: LOCAL KNOWLEDGE TRANSMISSION OF AARI POTTERY MAKING

The Potter's Hands (*Aani*)

This essay examines the pottery-making learning process by focusing on the expressions girls demonstrate in their pottery creations and explains how they learn to make pots by themselves. Their learning process displays several characteristics.

Girls quickly become used to touching clay with their hands because they begin helping their mothers' work from early childhood. This early encounter with clay provide the girls with opportunities to acquire information about pottery-making techniques, such as hand-and-finger movement patterns and the correct way to dry partially formed pots. However, the potters do not try to intervene in their daughters' early pottery making attempts. They patiently watch their daughters' trial-and-error period with a positive attitude. Adult potters' verbal expressions, such as "Your hands are different from mine" and "Your hands know how to make pots."

The girls themselves sense when to start making bigger pots. They do not start making bigger pots even if their mothers instruct them to do so. This shows that the decision as to when to learn how to make specific kinds of pots is based on the potter's own experiences. Discussions with potters suggested of the existence of some general steps that the girls should go through when learning how to make pots, and that girls should begin with a given type of pot and proceed to others. However, the observation of 12 girls in village S and village G showed that some girls deviate from this general presentation of the learning process, as they could proceed in a different order of pottery making.

Girls learn how to make pots in a boarder context in which they interact with a number of variables viz. the clay material, types and amount of firewood, weather variability; and observing daily lives and activities of their community. In the process of learning, girls acquire some patterns from their potter mothers. Yet, they also develop their unique styles in the context of broader environment, as mentioned earlier, and through trials and errors. That is why that girls' order of finger-movement patterns in pottery making differs from that of their mothers and other relatives (Kaneko 2007; 2010).

The potters explained this process of learning and developing skills, through one but powerful expression '*aani*' literally hand. It refers to the 'power of hands,'

and its difference from person to person, through which girls develop unique pot making skills. In this context, adult potters would encourage their daughters to develop unique skills saying, "your hands are different from mine," and that "your hands know how to make pots."

These ideas allow a little girl who is just beginning to make pots change her technique and create her own pottery based on her experiences and observation of the natural environment, and social situations. I would like to emphasize that the learning system of Aari pottery making is characterized by a strong tendency to accept various kinds of pottery-making techniques.

Learning System on Pottery Making among Aari People

This essay attempts to describe the process of local knowledge development and its transfer from mothers to daughters. It focuses on analysis of the specific order in which different types of pots are made, the body techniques, and the interactions between mothers and daughters in their workplaces. The analysis revealed that although pots produced by each potter appear to be of the same size and shape, each potter's individual techniques is different based on their hand-and-finger movement patterns. These variations are created, and transferred as well, through the Aari pottery-making learning system.

Local markets in Aari are held twice a week; there are at least 10 local market sites, with various products being exchanged somewhere in Aari almost every day (Kaneko, 2006). Items exchanged at local marketplaces include agricultural products, livestock, and crafts. When exchanges take place on local market, only a brief communication occurs even when negotiating prices. For example, in one instance which lasted about 10 minutes, the only words a potter exchanged with a customer concerned the price of a pot and amounted to only a few phrases: "How much is it?" the customer asked. "It is XX Ethiopian birr" the seller replied.

The relationships between craft makers and their customers established through the mediumship of crafts, provided the customers with knowledge of the skills and techniques of the craft makers and quality of their products. This prior knowledge, therefore, enables the buyers to evaluate the quality of the product through the concept of '*aani*,' which is typically heard in the process of exchange. Expressions such as "[her] hands are good" and "[her] hands are bad" are used to evaluate the product and the potter's technique, 'good hands' are associated with good quality of the product that it lasts long. Potters also use this positive expression when the particular techniques are available only from a particular potter. On the other hand, some customers sometimes exclaim, "[her] hands are bad" if the pots would be easily broken immediately after they are purchased. However, evaluations are constantly changing because a potter's techniques continue to change through trial and error.

There are no words to express either 'superior' or 'poor' in the Aari language; therefore, potters and users do not rank potters' techniques by using comparative expressions. Users evaluate potters' techniques at various points by using their pots for a long time. There is no best way for potters to make a good, long-lasting pot, and users expect pottery-making techniques to be diversified among potters.

This idea may be related to the concept of *aani*, which extends to individual techniques and cannot be easily compared.

In general, *tila mana* girls marry boys and most give birth, and they need to make a living off the income from pottery making. Potters gradually become older, and it becomes harder for them to make pots as they did when they were young. According to their social roles in their community and their biological age, changes in the techniques used in pottery making are a necessity for them to make a living (Kaneko, 2013). In this respect, this paper considers pottery making as a process of socialization in a community. Learning pottery making is experienced not only as a youth. Potters in all generations need to learn new and different pottery making techniques as their individual conditions change, literally through their own hands.

Of course, during those periods, their mothers provide several choices without verbal communication; the observation of pottery making in the workplaces of potters who are their peers and seniors would encourage learning pottery making. Mothers never ever leave their girls alone in their workplace, and girls receive support from their mothers without their knowledge when making pottery. However, potters basically understand how to create their own methods by using their hands to adjust the materials through trial and error. Because almost none of the potters' mothers had this kind of personal experience, they did not intervene in their daughters' pottery making. At the same time, daughters would be empowered to create their own technique for pottery making by working with their mothers in the workshop. The learning system among Aari pottery makers includes a tendency for individual learning systems in communities that encourage people to create their own procedure for pottery making.

According to an analysis of the process of pottery making among 12 pairs of girl potters and their mothers, there is some tendency for learning by using continuous technological elements, such as the procedure of finger movements. The learning progression is related to establishing their social role in the community. However, one important aspect is that this learning progression was not enforced according to narratives on the differences among individual hands in pottery making and variations in the learning progression. This is reflected in the social, economic, and political differences among potters.

In addition, one important issue is that the girls never tried to mimic the procedures of their mother, sisters, or peers for pottery making when faced with serious situations, such as breaking pots (Kaneko, 2012). This would also be an aspect of the process of communicating with natural environments, such as clay. At the same time, those methods of communicating with the environment influence the Aari learning system. This characteristic among the Aari people creates their pottery making system, and potters are inspired to create new kinds of pots in the Aari learning system.

NOTES

(1) The Aari language has no word that corresponds to the English 'teach.' The Aari people use Amharic to express the word. Amharic was originally spoken by the Amhara people from northern Ethiopia, who invaded the Aari in the late 19th century. In the 1970s, the Aari were introduced to the modern school system. Schools are called *esinti eya*, which literally translates as 'knowing house/knowledge house,' in the Aari language. Although potters knew the meaning of the Amharic word for 'teach,' they did not use it.

(2) For example, Wallaert pointed out that observation and mimicry were important elements in the learning process for Dii woman potters in northern Cameroon. In the process, girls first observed their mothers making pottery and then attempted to mimic them. They were forbidden from making conversation during the latter activity (Wallaert, 2008: 189–190).

(3) They did not define the community of practice (Lave & Wenger, 1991). Subsequently, Wenger et al. (2002) theorized that a community of practice was a group of people whose members were informally connected by common specialized skills and by commitment to a project. This theory led to further studies on knowledge transmission and social relationships among community members and practical organizational theory (Fukushima, 2001; Wenger et al., 2002).

(4) Tacit knowledge defines things that cannot be expressed through language, numbers, and formulae (Wenger et al., 2002).

(5) Extensive discussion was not conducted on the aspects of technological change and innovation that depended on individual experiences of communication with the natural environment, because of the influence of sociocultural aspects such as community participation (Toren, 1990: 114; 1993: 473). A similar description of the learning process, one involving communication with the natural environment, pertains to the Hair people of northern America. After Hara taught Hair children to make paper cranes, she noticed that they did not ask for her help but continued to practice making them on their own through trial and error. Then after the children had made many paper cranes, they asked Hara "show us different kinds of paper works" instead of asking, "teach us different kinds of paper works." Hara interpreted this situation that Hair children tried to repeat the communication between Hara and paper (Hara, 1979: 196).

(6) According to interviews, one potter started making different kinds of pot from *bun-til*.

(7) When the author asked Ita to make a pot without breaking it, she answered that her pots were sometimes broken (*giimi*). In the Aari language, *giimi* is the term typically used to express when something is broken down. In addition, other words express the physical states of pots. For example, *bank* means 'to crack while forming,' *itsuri* means 'to crack while firing,' *tsuugi* means 'to develop a hole while forming,' and *ifu* means 'to fall apart while forming.' However, as Table 1 shows, Ita made some A3-shaped pots without them either being broken or cracked in period III.

(8) As table 1 shows, when Simi was learning to make D-shaped pots, the first step in the process entailed that her mother demonstrate how to make them.

(9) The author assumes that knowledge transmission in Aari pottery making largely differs from that in school education. Hara researched the influence of modernization on Hair communities (Sue, 1965: 45–50), and she pointed out that Hair children could not communicate with their teachers during learning, and the White teachers found it difficult to impart instruction to the children (Hara, 1979: 199).

(10) Differences between village S and village G emerged with regard to the quality of clay, which was observed to influence the learning process. Although I did not perform experiments on the clay, I observed two points during the fieldwork: (1) village S's clay

contained more water than that of village G. (2) In village G, potters mixed a great deal of sand (nearly 30–50% of the total composition) into the clay. On the other hand, in village S, potters ground a quantity of old pots (nearly 20–30% of the total composition) and mixed them into the clay.

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