

‘Our Past, Our Present, and, Most Importantly of All, Our Future’: The Role of Potters in Botswana

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Abstract

This study integrates various multi-disciplinary approaches on ceramics that provide coherent answers to the past, present and possibly the future of the subject. Special focus is on the four main stages of pottery production in south-eastern Botswana: raw material acquisition and processing, forming and shaping, decoration and surface treatment, and firing and finishing of pots. The purpose is to demonstrate the changing pottery traditions in Botswana over the last 50 years. This period is marked by conflicting land uses affecting pottery raw materials due to the expansion of villages, cities and industries following the post-Independence economic boom. Global warming has also taken its toll on potters as there is a shortage of resources –especially clay, temper, oxides, fuel and water. In recent years, potters who have adopted modern technology by spinning their pottery on the wheel and using modern kilns that require power, but these have been affected by power shortages. In addition, traditional potters face water shortages due to recent drought and fuel for making pots as a result of deforestation. Despite these challenges, potters in south-eastern Botswana still find potting to be a source of livelihood beyond subsistence farming, which also is drastically affected by global warming.

Introduction

Archaeologists have long underscored the importance of pottery production in order to study critical issues on dating, trade, status, technology and function. Archaeological ceramics, especially decoration motifs, are used in most parts of Africa to understand historical and cultural complexities (Rice 1987; Huffman 1980; Livingstone Smith 2000, 2001 and Gosselain 1999, 2000a, 2000b, 2011). The craft of pottery making is one of the oldest traditions in Africa. The oldest pot sherds in the continent were excavated in Niger (West Africa) and date from around 10,000BCE (Haour 2003). In Botswana, systematic archaeological research on archaeological ceramics started about six decades ago and has intensified over the years especially after the country’s Independence in 1966 (Schofield 1948; McDonald 1940; Lawton 1967; Grant 1968; Letlole and Ntsambiwa 1993; Labounty 1995; Thebe 1996; Denbow and Thebe 2006; Wilmsen et al 2009; and Thebe et al 2010).

Pottery making has been noted as one of the economic strategies to meet household needs in contemporary society (Gosselain 1992a, 1992b, 1994; Stark 2003; Wilmsen *et al* 2009; and Griffiths 2015). Many potters sustained their families through selling pots before their husbands became migrant workers in South African mines, and only recently has potting again become a source of income (Griffiths and Thebe 2010; Thebe and Griffiths 2010). Recent archaeological, anthropological and ethnographic studies have underscored the importance of studying the *chaîne opératoire* or the operation sequence of pottery production in order to understand socio-economic, stylistic, technological and cultural issues governing the craft of ceramic manufacture (Armstrong *et al* 2008; Wilmsen *et al* 2009; Fowler 2008; Gosselain 1992a, 1992b, 1994, 1999, 2000a, 2000b, 2011; Gosselain and Smith 1995). However, the craft of pottery production has undergone some changes especially in the last 50 years in clay sourcing, preparation, forming and shaping, decoration and surface treatment, firing techniques, function and status. These changes do not imply that the craft is ‘dying’ but rather that it is dynamic.

Ethnographic evidence shows that pottery used to be made in greater quantities throughout Botswana than it is the case today (McDonald 1940; Lawton 1967; Grant 1966; Letlole and Ntsambiwa 1993;

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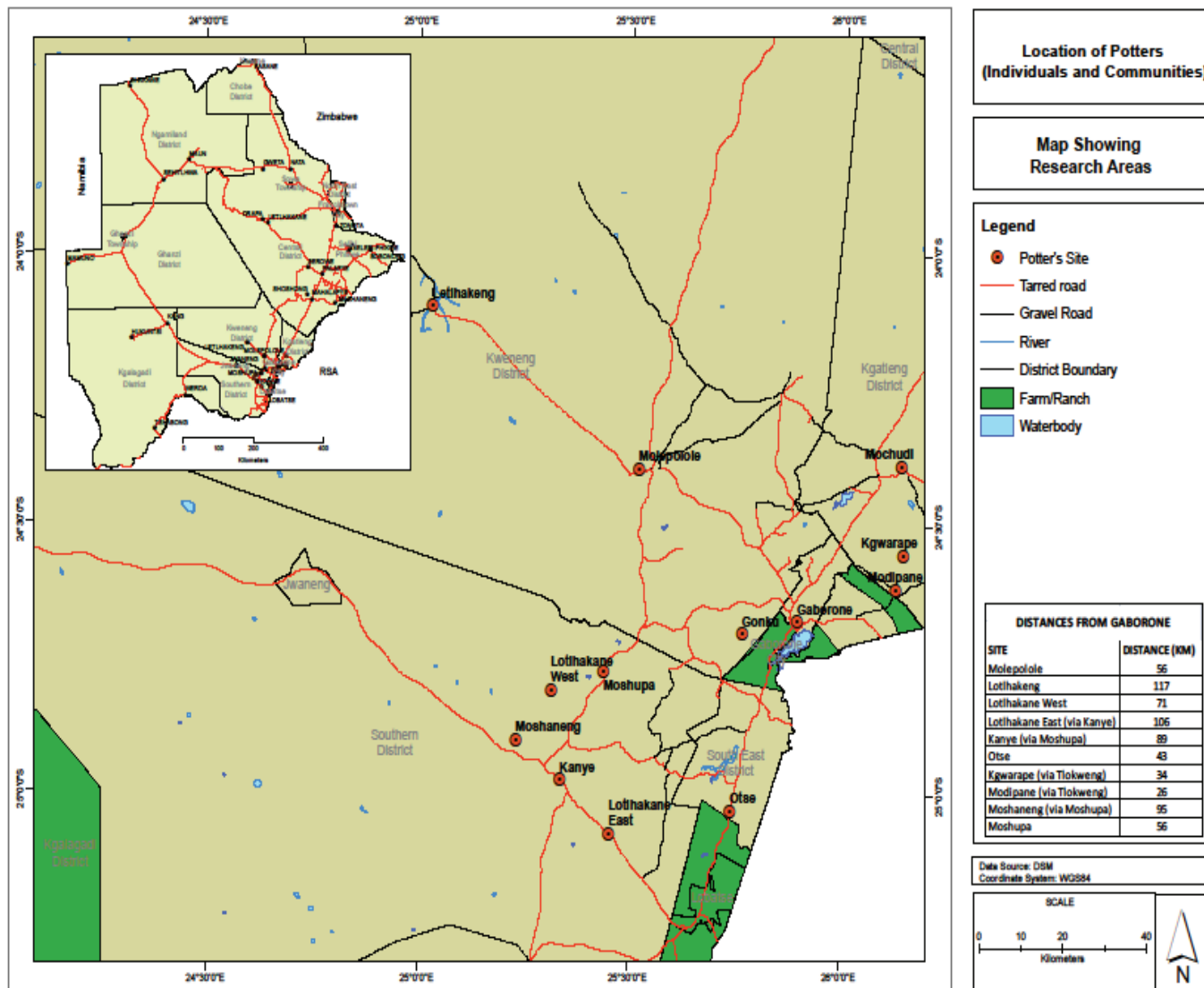
Denbow and Thebe 2006; Wilmsen *et al* 2009; and Thebe *et al* 2010). Many people who have the knowledge of making pots no longer use it. They prefer using plastic containers and metal vessels from shops and street markets. Further ethnographic sources underpin the dominance of women as potters (McDonald 1940; Lawton 1967; Grant 1968; Letlole and Ntsambiwa 1993; Thebe 1996; Kang 2003; Denbow and Thebe 2006; Moilwa 2007; Mokone 2009; and Thebe *et al* 2010). Traditionally, males in Botswana looked down on the craft of pottery production as 'dirty, 'domestic' domain of the 'underclass' females (Thebe *et al* 2010). Nonetheless, they often participated in intensive labour related activities of pottery production including the collection of clay, fuel materials and firing (Gosselain 1999; Schildkrout and Keim 1990).

This paper does not hope to outline all information on ceramic production in south-eastern Botswana. However, I hope to make a contribution in that direction by describing and interpreting key features of technological and social pottery production, raw material challenges, land issues, and the distribution of pottery for livelihoods. Key stages in the manufacturing process are perceived as important in understanding the cultural and historical context of the craft. Reference is made to post firing treatments often referred to in ethnographic sources but are rarely practiced by modern potters. Throughout this paper, we recognize that pottery production has been reduced in quantities but assert that it is not 'dead'. It is fluid and fits in with emerging patterns of modernity.

The aim of this study is to provide information on the operation sequence of pottery making in south-eastern Botswana for the last 50 years using ethnography and ethnoarchaeological observations. This aim is realized through: i) recording and illustrating changes in pottery making in the last 50 years; ii) investigating the dynamics behind the symbolism of the craft; iii) providing challenges facing modern potters today due to global warming; and iv) identifying land use conflicts potters face.

My interest in research on pottery in south-eastern Botswana started in 1996 as part of my undergraduate thesis on pottery making amongst the Bakwena (Thebe 1996). Since then, Edwin Wilmsen, Anne Griffiths, James Denbow, David Killick, Anne Rose and this author have directed additional work in Botswana focusing on social geography and geochemical analysis of potters and raw materials. To date, over 50 villages, fields and towns have been covered in south-eastern Botswana including Gaborone, Kgwarape, Molepolole, Letlhakeng, Lotlhakane East and West, Kanye and Otse. This is an area of approximately 76,332 km² (Map 1). In this study, 41 potters from five *merafhe* (ethnic groups) namely, Bakgatla, Bakwena, Bakgalagadi, Bangwaketse and Balete were interviewed and observed making pots. Data collection involved films, photographs geochemical analysis, biographic accounts, life histories and economic situations of potters. Geographic Information Systems (GIS) was used to mark the spatial distribution of potter's homesteads, pottery sources and techniques. A series of publications are in press elsewhere as part of a grand study on ethnoarchaeology, technological and social boundaries of pottery making in south-eastern Botswana.

Map 1: The location of potters in south-eastern Botswana, map by the author



Source: Compiled by Phenyio Thebe

Clay Sourcing and Preparation

Information on clay extraction indicates that some potters in south-eastern Botswana travel various distances sometimes up to 100km to look for clay sources. There is a general preference to collect clay within a radial distance of 15km from potter's homestead if good sources are available. This short distance allows potters to conveniently engage in other domestic and agricultural duties. Modes of transport include carrying clay on their heads in buckets and sacks as well as using wheel burrows, donkey carts, and vehicles. Transport remains a restriction for most potters due to high hiring costs. Collective modes of transport are preferred for optimal use of resources. This involves potters working in a group (community of practice) to collect raw materials for pottery making. Some potters in Molepolole barter pots for water, firewood and grain.

Clay sources include granite outcrops, termite hills, deep riverbeds, ponds, and fields. Most potters use generational sources, traditional sites that were used by their ancestors, relatives, and instructors. Prospecting for new sites still occurs, as in the case for Selina Gaofilwe Legare in Moshupa who recently identified a clay source near Ntlhantlhe village in the Southern District. She then consulted with the local

kgosi and the Village Development Committee (VDC) to get raw materials access in the area. However, an official mining permit has to be formally applied for at the Department of Mines. Since the identification of the Ntlhantlhe clay source, news has spread across many potters who are now slowly using the source. Attention is often given to good physical properties, plasticity, texture and some even claim colour and taste of clay through eating small pellets are key to selecting clay sources. Most of the clay sources are 'owed' by families, groups and cooperatives as potters have to pay a small fee (this differs from place to place). Social prohibitions mostly apply at clay sourcing stage. For example, menstruating women, people who had sexual contact in the previous day, recent widows and pregnant women are not allowed to collect clay.

In desperate times, potters resort to poor locally available clays to mix with high-quality ones as is the case in Letlhakeng. In south-eastern Botswana, a wide range of temper may be added to clay to improve its quality. Asbestos is the preferred temper despite being associated with health risks during manufacture and use. Regrettably, there is no education or warning given to potters for taking such risks.

There is occasional use of river sand, *grog* (broken pot sherd), animal manure and grit. Even good clay requires the addition of temper. Bone and grass temper noted in ethnography are not used by modern potters.

Clay processing usually involves simple to complex techniques like drying, pounding with mortar and pestle as well as sieving for the removal of impurities. After this, the clay is mixed by hand like working on bread dough to maintain a homogenous paste ideal for shaping pots. Sometimes clay paste is covered with plastic then left overnight or even a week to sour. This improves the plasticity of the clay by ensuring that the particles bond during manufacture. Temper is added to clay after it has reached the right paste plasticity, thus requiring further mixing. In recent years, shortage of water in Botswana has affected the production of pottery making. Where water is available, it is expensive. Potters in Lotlhakane West, for instance, regularly use recycled water, but this can produce a bad odor. Clean water, which is free from detergents, is considered to produce the best plasticity for pottery making. After preparation, the clay is now ready for forming and shaping into the required geometric form.

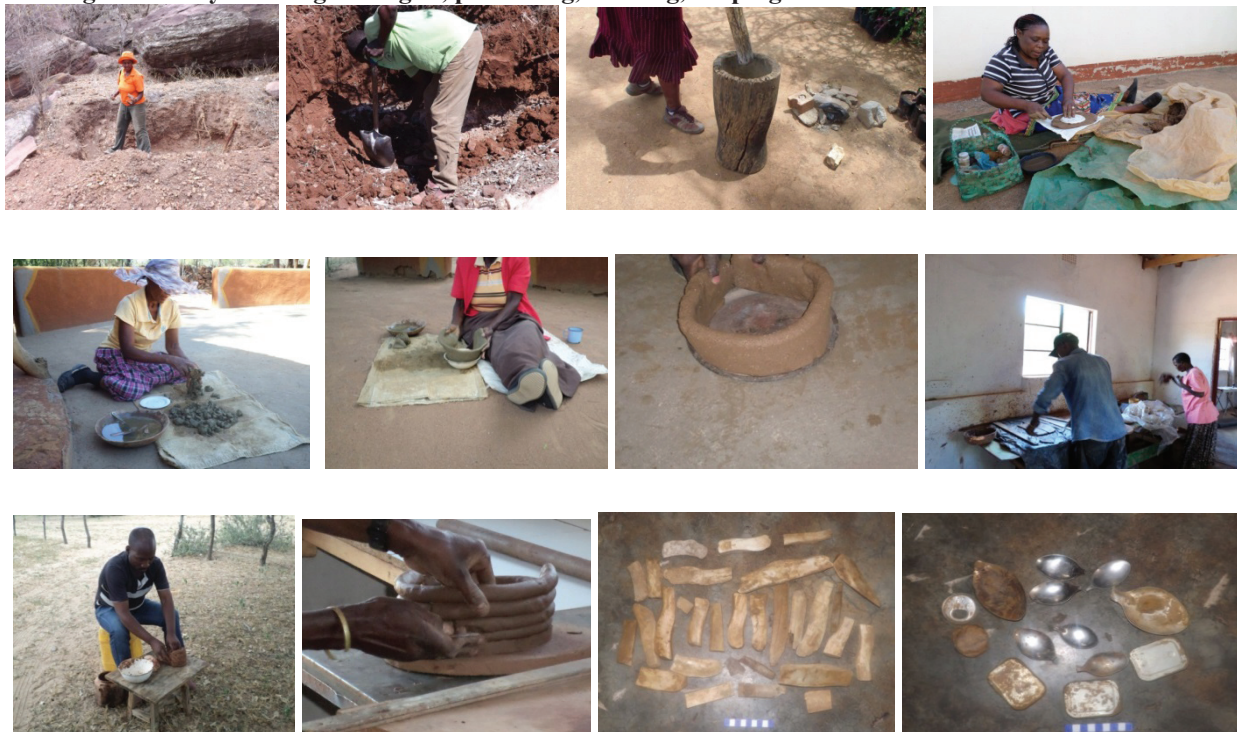
Forming and Shaping Techniques

Forming and shaping stage is the most important and difficult technique as the future pot acquires a geometric shape. This stage is stable and less susceptible to changes compared to other phases of the production sequence (Gosselain 1999, 2000 and 2011). A wide range of pottery forming and shaping techniques (roughing out) have been noted in south-eastern Botswana: a) drawing of a ring-shaped lump (concave support) and lining a bowl with clay; b) drawing of a ring-shaped lump (pot lid handle up support); c) cut slab building d) ball and pinch drawing technique; and e) classic coil method.

Drawing of a ring-shaped lump (concave support)

In drawing of a ring-shaped slab, the potter shapes a ring of about 20-30cm in diameter with one or several slabs of clay. The lump of clay is then placed on a concave support (mostly a bowl) and opened by thrusting with the thumb, fingers or fist in the centre. Concave support bases used include enamel basin (common), plastic bowl, polish container, imported ceramic bowl and plunk disk. The potter then vertically pinches and squeezes to raise and thin the walls of the vessel. Sometimes a spatula tool is used to draw clay upwards. Frequently, the lower part of the vessel is shaped by turning a leather green or dry pot upside-down and then emplacing a pancake of clay. Drawing of a ring-shaped lump is the most common method in south-eastern Botswana (Figure 1, middle row).

Figure 1: Clay sourcing strategies, processing, forming, shaping and tools



Source: Photographs shot by the author

Line bowl with clay is an alternative method of the above technique as it is similar to drawing of a ring-shaped lump, except that the potter lines the inside of enamel bowl with clay and makes the base right away. The potter then raises and coils clay until the desired wall shape is made. Slab base shaping technique is another variation of the above techniques. In slab base shaping technique, the potter begins by making a slab of clay the vessel base on a round potter's disc. A plastic disc of the desired diameter is then put on top of the clay disc. The base is then cut. A clay slab is then coiled on top of the disc.

Figure 2: Decoration techniques, burnishing tools and firing technique





Source: photograph taken by the author

Drawing of a ring-shaped lump (pot lid handle up support)

A variant of Technique 1 occurs when the base is made at the same time with the rest of the pot using a pot lid with its handle up as support. This technique is similar to Technique 1 except that the potter starts with the base. A big plunk is used as a spatula to assist thumbs and fingers in pulling the clay lump.

The pot is then left in the pot lid to dry. A wet cloth is tied to the upper part of the pot facing down so that the area remains moist when the rest of the pot dries. This assists in joining the lower and upper parts of the pot without creating cracks. When the pot is leather green, it is turned up to sit on the base so that the upper part of the vessel may be formed.

Cut slab building

In cut slab building (also called segmental modeling), a vessel is built with several slabs of clay that are rolled or patted flat to maintain a uniform thickness with an iron rod sandwiched between two sheets of plastic. Initially, a string is used to cut a lump of clay. The slabs are then cut to the desired size using a ruler and knife. The slabs are joined on the prepared concave mold using wet clay so that they can stick together. Common molds include a Polyvinyl Chloride (PVC) pipe and plastic containers.

A glass or plastic bottle is sometimes used as a mold to wrap clay slabs around it to make flower vases. The shaping of the pot is made on a flat support. The cut slab technique is one of the fastest and most efficient techniques. Big slabs are joined to complete the pot quickly. A roller controls a standard thickness ensuring uniform walls. Slabs and molds are important elements of this technique. In slab technique, potters are able to produce regular shapes and very large pots (Figure 1 middle row).

Ball and pinch drawing technique

Ball and pinch drawing technique involves cutting a solid ball of clay. This is pinched, opened by inserting fingers, thumb and/or both then raising and coiling a lump. The action is repeated until the entire lump shapes into the desired shape. Ball and pinch drawing technique is different from other methods in that a lump of clay is manipulated into a vessel without adding more clay.

Potters who prefer ball and pinching often use it as an alternative method for quickly making small vessels. Large vessels are built up through other techniques. Pinch and ring-shaped lump are similar techniques because they involve lump modelling. The techniques differ in that drawing is usually done with large vessels with emphasis on vertical movement. In pinching, the base is made at the beginning while withdrawing it is manufactured at a later stage when the pot is leather green (Figure 1, bottom row).

Classic coil method

In the classic coil method, the flat or coil base, is made right at the beginning of the manufacturing process. Coils, ropes, rolls or fillets of clay are initially built on top of a clay slab base to establish the vessel circumference and height. The wall height or diameter is increased by continued squeezing, pinching, squeezing and drawing. Successive coils are then pinched and joined to form a uniform wall using a rib

spatula. The idea is to properly bond coils to avoid cracks during drying and firing. The coiling method is suitable for building extremely large vessels (Figure 1, bottom row). Drawing of a rim-shaped lump is the most common in the area followed by cut slab. Depending on the typology adopted by the archaeologist, these techniques are subject to refinement with future work.

Decoration and Surface Treatment Techniques

Decoration styles in south-eastern Botswana are predominately plastic, made while the clay is still wet, consisting of four types: a) fine incising; b) grooving; c) impressing; d) applique. Various tool types are used including v-shaped (stylus), u-shaped (round) and combs. The use of tools is largely based on availability of raw materials and is determined by environmental factors. Potters largely see decoration as aesthetic and geared towards attracting customers.

Grooving lines in clay is done with various tools with round ends such as round sticks, wooden spatulas and fingers. Incising is similar to grooving except that sharp instruments are used including knives, metal scraps, acacia thorns, wires, pens and grass blades. Impressing is made using spoon backs, rings, fingers, combs and shells. Applique decoration is made using a mixture of tools mentioned.

A number of surface treatment techniques are used in south-eastern Botswana including red ochre, graphite, manganese, clay slips, calcrete, polish coat, smoking and enamel painting. Most decoration is executed before firing. Industrial paints and polish coats are applied after firing. Feathers, ear buds and brushes are used in painting. Red ochre decoration is used by most potters while other colours are confined to certain potters. For example, graphite is used in Kgwarape, black paint in Molepolole, calcrete in Letlhakeng and manganese in Kanye and Lotlhakane East. Potters may only burnish pots with pebble rocks in case of scarcity of surface coating materials.

Location of surface treatment material is mostly confined to a whole vessel or upper and/lower parts of a vessel. Plastic decoration tends to be located on the shoulder with a few cases on the waist, the neck and rarely over the whole body. Unlike shaping, decoration is fluid and highly susceptible to change and innovation. Potters decorating pots develop group, individual and technological signatures on decoration and surface treatment techniques. Modern innovation has also affected decoration techniques as some potters now use enamel paint, industrial oxides and polishes for surface treatment of pots. Although most potters prefer to decorate pots going to markets, there is still some preference for undecorated pots in south-eastern Botswana. Plain pots, considered 'pure' are largely produced to meet small 'ritual' market demands in south-eastern Botswana. The pots are usually small as they contain specific traditional medicine used by *dingaka* (traditional doctors).

Decoration was practiced amongst the Bantu of Southern Africa. Potters of some 'tribes' decorated many pots while others only a few or rarely. The type of decoration used by potters of a 'tribal group' followed the same general style (Lawton 1967). Most of the decorations noted in Ethnography have changed demonstrating that decoration is susceptible to innovation. South-eastern Botswana potters are open to decoration innovation by rearranging decoration motifs and sometimes developing new techniques. Pottery decoration goes beyond ethnolinguistic groups to include communities of practice. In addition, stylistic use of plant motifs amongst the Zulu has been attributed to the twentieth century, especially amongst the youth. Their work is distinguished by a greater intricacy than those of their teachers (Fowler 2011).

Drying

Drying is mostly conducted indoors followed by direct exposure to sunlight, although some potters may take pots directly outside after making them. The general trend is to introduce pots to direct sunlight when they are leather hard to avoid cracks.

The duration of drying is determined by weather conditions and markets demands. Potters who

want to sell pots quickly burnish them frequently with a smooth round stone to ensure speedy drying of pot walls. Burnishing also fuses clay particles together and reduces permeability during use. Pots should be completely dry before they are fired.

Firing

Firing is a critical stage of pottery making because it produces the birth of a new pot. Here, clay is converted permanently to ceramics. It is important to ensure that the right technical and social procedures are followed to produce high-quality pots. The use of fuel for firing pots in south-eastern Botswana varies with available local materials including cow dung, grass, leaves, and branches. Two firing structures are common: a) open bonfire; and b) pit firing (Figure 2, bottom row). The firing of pots is usually conducted in the early morning and afternoon taking into consideration the prevailing weather conditions. Deforestation due to clearance of forest for cultivation fields and urban expansion has affected the availability of fuel resources. Most potters use cow dung as fuel because it has methane gas content that maintains lasting high temperatures ideal for converting clay to ceramics. Other fuel types used include dry grass, cow dung and various forms of hardwood.

The choice of fuel is determined by cultural beliefs of potters and training among others. Potters also choose to fire material that is 'strong', burns quickly and is less heavy than fuel used for cooking. Firing, just like clay and temper collection, is often collectively undertaken to maximize use of resources. Potters are now considering the use of the potter's wheel and modern electric kilns to allow the mass production of pots. The irony here is that Botswana is also facing electricity crisis. As well, most customers still demand handmade and traditionally-fired pots.

Post-firing

Lawton (1968) notes various post-firing types amongst *merafhe* in south-eastern Botswana including smearing of liquids and substances to pots such as porridge and various trees residues. Plants at various stages of maturity were selected for smearing. The idea behind this is to consolidate clay particles to ensure that they are waterproof and not porous during use. Smearing is no longer practiced amongst contemporary potters in south-eastern Botswana because most pots are not functional but are produced for aesthetic and the tourism market.

Market

The majority of pots are made for the local market as wedding presents or for use in ritual ceremonies by traditional healers. Pots are also used for house decoration, flower pots and sometimes storage purposes, among others. A number of families maintain livelihoods through pottery making. These have been able to construct decent houses sometimes with running water and electricity (Griffiths 2015). However, most potters still combine pottery making with farming activities to supplement their household income. There are few specialist potters.

Ritual Exclusions

Traditionally, the process of pottery making was 'loaded' with symbolic rights and prohibitions that are complex and dynamic. For example, menstruating, pregnant women, and widows were excluded from pottery making. Sexual contact a day prior to collecting, making and firing pots was also forbidden (Thebe 1996; Gosselain 2010 and Fredrikson 2011).

However, most potters, especially youths, are increasingly abandoning traditional belief systems due to religious and economic factors. With the majority of potters now being entrepreneurs and Christians, social prohibitions have minimal use in south-eastern Botswana. This is in contrast to the Tswapong

hills where communities still uphold most traditions including ritual exclusion (Molatlhegi 2011).

Symbolism

The symbolism of basket making is well documented in Botswana. The challenge is to locate potters who still employ, or at least interview those who remember, the symbolism of pottery making in south-eastern Botswana. Only Mmamontshonyana Ditshekiso of Molepolole, Selina Gaofilwe of Moshupa, Keabetswe Thokozani of Gaborone and Lorato Motlolane of Lotlhakane East provided names of decorative motifs and their symbolic meaning. Some of the decorative motifs such as those in Kgwarape are inspired by the biodiversity of the area. There is a general trend to associate arcade decorations with water pots (Figure 2, middle row). Arcades are shaped like butterfly wings. Amongst the Bakwena butterflies are associated with rain (Thebe 1996).

Potters in Mochudi and Kanye recognized the association between certain motifs with those found in pottery and houses (Figure 2, middle row). Arcade motifs common amongst the Tswana, are probably an iconic representation of the group. Although my inquiry produced symbolic elements of pots, since some potters claimed to know symbols in pots, these are complex to determine. Similar observations have been made amongst the Zulu where identification of symbols is complex to produce (Reusch 1996; Armstrong *et al* 2008; and Fowler 2011). When prompted, Zulu potters recognize the association of certain motifs with those on pottery and clothing such as triangle motifs (Jolles 2012).

As in the past, the majority of potters in south-eastern Botswana are women. However, recent ethnoarchaeological studies in south-eastern Botswana have demonstrated an emerging trend of male potters, now comprising 16% of this study's sample. Male participation and dominance in pottery making is motivated by profit and control of the craft. They often participate in innovative aspects of pottery production including sculptures, placards, and accessories to generate quick income. Most male potters are not engaged full time as they complement the craft with other specialist duties such as construction, carpentry, and farming chores. All male potters in south-eastern Botswana are also talented brick makers. Occasionally they may participate in arable farming and herding. Female potters are often associated with mass production of pots.

Ethnography of Pottery Making in south-eastern Botswana

Here we draw from information on the *chaîne opératoire* of pottery making in south-eastern Botswana from ethnographic sources over 50 years ago to elucidate pottery changes over the last five decades. Potters in south-eastern Botswana were using red clays high in iron content and sometimes created a reduced environment to turn them black (Seale 1949). The method used by the potter depended on the technique which she was taught and modified to a certain extent through personal approach. The following shaping techniques were used by Bantu potters in south-eastern Botswana: a) moulding from the lump; b) coiling and rings; and c) building with lumps (Lawton 1967). As reflected in this paper, modern contemporary potters in south-eastern Botswana have diversified these techniques over time probably due to innovation, social interaction, technology and effective transport (Tables 1 and 2).

Table 1: Summary of Ethnographic Notes Based on Lawton's Observations

Morafhe	Location	Clay Source	Tools	Smoothers	Decoration	Decoration tool	Burnishing	Sealing	Pot forms
Mokwena	Molepolole	Dithejwane	Enamel basin support for buidling	Smooth piece of wood	Graphic Designs not common Red Ochre only—majority	Grass stem	Smooth stone	Melon seeds, milk, kaffircorn	Pots with necks
Mokgalagadi	Matlhatshwanae	Dithejwane	Enamel basin support for buidling	Smooth piece of wood	Incised design red ochre	Thorn	Smooth Stone	Kafficorn bran	Pots with necks (everted)
Mokgatla	Kgwarape	Mochudi	Enamel basin support for buidling & iron pot lid	Ox rib smooth piece of wood	Graphic Designs	Knife blade	Smooth stone	Liquid porridge kaffircorn bran substance from roots of mogonono	Bowls without necks (open mouthed) bowls with necks (everted)
Molete	Ramotswa	No information	no information	No information	Red ochre	No information	Smooth stone	No information	Pots with necks (everted)
Mongwaketse	Moswaana cattle post	Kanye area	lid of enamel pot	Smooth piece of wood	Incised design impressions red ochre triangular designs and band of ovals	Knife blade stick	Smooth stone	Liquid porridge	Pots with necks (everted)

Table 2: Summary of Ethnographic Notes based Thebe 2016 Observations

Morafhe	Location	Clay Source	Shaping Support	Smoothers	Decoration	Decoration tool	Burnishing	Sealing
Mokwena	Molepolole	Molepolole	Enamel basin	Rib and smooth stone	Triangles and arcades	Thorn, Grass	Smooth stone	Not practised
		Dithejwane						
Mokgalagadi	Letlhakeng	Molepolole	Enamel Basin	Rib and smooth stone	Plain	Wire, grass, thorn, ruler	Smooth stone	Not practised
		Letlhakeng						
Mokgatla	Kgwarape	Mochudi	Pot lid	Plunk and smooth stone	Arcades	Plunk, Rib	Smooth stone	Not practised
Molete	Otse	Lotlhakane East	Bottle, enamel basin	smooth stone	Applique	Spoon, knife, pen	Smooth stone	Not practised
Mongwaketse	Kanye	Lotlhakane East	Enamel basin	Plunk and smooth stone	Arcades	Wooden peg, plunk, rib	Smooth stone	Not practised
Mongwaketse	Lotlhakane East	Lotlhakane East	Enamel basin	Plunk and smooth stone	Arcades	Knife and plunk	Smooth stone	Not practised
Mokgalagadi	Lotlhakane West	Lotlhakane West	Enamel basin	Ruler and smooth stone	Plain	Grass and Stick	smooth stone and spoon	Not practised
Mokgatla	Moshupa	Moshupa	Enamel basin	Smooth stone and rib	Arcades	Rib	smooth stone	Not practised
Molete	Gaborone	Mochudi	Flat surface	Smooth stone and rib	Plain	Grass and wire	smooth stone	Not practised
Motswapong	Gabane	Gabane	Flat surface	Smooth stone	Arcades	Spoon	smooth stone	Not practised

However, changes in pottery making have been gradual. The decoration of pots was practiced amongst the Bantu potters of Southern Africa. Potters of some 'tribes' decorated many pots while others only a few to rare. Generally, pots used for drinking, serving food, storing foodstuff or liquids and for washing were decorated. Large beer-brewing pots and cooking vessels were left plain. The type of decoration used by potters of a 'tribal group' followed the same general style, but this was not always the case. Potters used traditional designs, or modern ones learnt at school or copied from Western motifs, which were popular among customers.

Many traditional designs were replaced by those that showed European influence (Lawton 1967). Colour techniques included graphite and red ochre of various forms. Occasionally, enamel paints were used as decoration. Smoking is sparingly practiced in Letlhakeng and Kanye. This scenario still exists amongst the Bangwaketse and Bakgalagadi. All potters burnished their wares. Burnishing was usually done with a river pebble, a smooth pipe or a flat bean. Cow dung was sometimes applied to pots that were red-hot to turn them black. Traditionally, animal fat was rubbed on the blackened pot to give it a lasting shine, and sometimes black boot polish was used. No slipping was noted amongst the Bantu potters of southern Africa. A slip is defined by Lawton 1967 as a secondary coat of clay (generally, a finer material

than the body) used to improve the colour and texture of the vessel and to render it less porous (Lawton 1967). A slip is applied before firing to harden with the clay otherwise it flakes off.

Although historically the Bakwena often grabbed property from Bakgalagadi including livestock and had a master-servant relationship of *bolata* [servitude], this study on social and technological study of pottery making does not paint a gloomy picture between the two *merafhe*. A number of Bakwena potters bought pots from the Bakgalagadi artisans in the Kgalagadi Desert. The Bakgalagadi were taught pottery making by the Bakwena (Lawton 1967). Both groups made and continue to shape pots in similar ways. They also continue to share clay sources such as Dithejwane and near Scottish Hospital in Molepolole. The same can be said of the Bakgatla of Kwarape. The Bakgatla shaped their pots in a similar style to the Bakwena and the Bakgalagadi by using incised arcades decoration. A number of paints were used to paint vessels including lime green, gold, and yellow. Sometimes these colours were painted with red ochre in the same vessel as noted at the Kgosi's place in Molepolole (Lawton 1967).

On the eve of Botswana 10th year of Independence, Sir Seretse Khama reminded Botswana of the importance of the past in guiding them on the present and the future. In his speech, he made reference to 'Our Past, Our Present, and, Most Importantly of All, Our Future' (Khama 1976). Four decades later, on the eve of Botswana's 50 years of Independence (jubilee celebrations), Ian Khama, Seretse Khama's own son echoed similar statements (Khama 2016). Across the landscape of Botswana, Botswana have reason to pride and celebrate 50 years of Independence ornamenting *dikgotla* with various traditional items including pots, rocks and some even used conversational national flag colours of black, white and blue. The country has made significant strides in diversifying its economy beyond arable and pastoral farming, mining and ecotourism. Now there is a drive towards cultural heritage tourism. Traditional pottery making is one of the community-based natural resources that provide a gateway into the country's economy. The craft has potential to unify the nation as witnessed by close technological and social exchange of pottery making resources and skills since Independence between the Bakwena and the Bakgalagadi. However, in order to preserve the craft, several challenges faced by artisans should be addressed including land use conflicts, water and fuel shortage.

Botswana's national 'Vision 2016' identifies culture and heritage as one of the 'pillars' that makes Botswana a proud and united nation (Republic of Botswana 1997). The skill remains an inspiration for most Botswana. The 100 Monuments Initiative Programme, initiated by President Ian Khama, identifies cultural tourism sites and products that can be used to derive maximum return on investment for tourism and research purposes (Khama 2016).

Notably, Botswana's cultural heritage lies in managing heritage resources sustainable for future generations learn from, enjoy and celebrate unblemished. This should be done bearing in mind that pottery making is not static but fluid. Traditional pottery making technology is clearly a diverse and complicated craft that the past, present and future generations of Botswana have taken pride in and will continue to do so in defining themselves as a united nation with multiple identities.

Conclusion

Generally speaking, the introduction of plastic and enamel containers has replaced the use of ceramic products in south-eastern Botswana. This, however, does not imply that the craft of pottery making is dying, on the contrary, it is fluid and dynamic. Although this enquiry produced some symbolic elements of decoration, the collective memory behind the symbolism of pots in south-eastern Botswana has been lost through time.

Ongoing work in other series of publications that are part of this study focus on technological and social boundaries of pottery making in south-eastern Botswana with emphasis on clay sourcing, shaping and finishing, decoration and firing. These production stages are analysed with the *morafhe*, school and

geography, and learning schools parameters to determine social and technological boundaries. Future work will focus on biographic accounts of potters, tools characteristics, materials, and gestures involved at every stage of the *chaîne opératoire* of the finished products and technical vocabulary.

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