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ASPECTS OF THE CERAMIC SYSTEM OF THE LUO OF KENYA

Archaeologists need to understand potters as well as pots. Despite an arsenal of logical hypotheses, analytical techniques, and statistical tools, unless the potter's perspective on the gritty facts of ceramic production is appreciated, the archaeologist has little chance of penetrating beyond his/her pot sherds to the people who made and used them in any realistic way. These facts are not simply technological: production always takes place within a social context, and both social and technical constraints condition production decisions and the resultant material patterns. The potential contribution of ethno-archaeological studies of ceramics is precisely the opportunity to learn something about the basis of these decisions by examining the interface between material culture and its makers and users at the moment of creation.

This paper is a brief descriptive account of several aspects of the ceramic system of the Luo people of Kenya. It should be emphasized that the concept of a "Luo pottery system" does not imply a homogeneous, bounded entity. Rather, it is a dynamic open system with a great deal of internal variation and polythetic overlapping in many aspects, ranging from pottery forms and decoration, to classificatory concepts, modes of marketing, relations among the potters, and the organization of work groups (Herbich in prep.). Most of this variation would not have been visible to a study which focussed on a single community or group of potters, and the projection of such a limited picture onto the whole system would be extremely misleading (a caveat with implications not restricted to the Luo case) (1).

Luo potters

The Luo are a Nilotic speaking people divided into a number of sub-groups described variously as sub-tribes or tribes (cf. Evans-Pritchard 1949, Southall 1952, Whisson 1964, Ogot 1967) occupying a collective territory of about 10,000 square km surrounding the Winam Gulf of Lake Victoria in western Kenya. The traditional political structure was based on a fluid system of

alliances among land-holding patrilineal descent groups, with no overall central authority (a version of a segmentary lineage system: Evans-Pritchard 1949, Southall 1952). The current administrative divisions, which are under the authority of government-appointed chiefs, are based upon the territories of traditional Luo subgroups at the time of colonial intervention (Fig. 1).

The Luo live in large homesteads (*delni*; sing. *dala* or *pacho*) dispersed over the landscape (Fig. 2); each homestead is usually occupied by a polygynous extended family, and each married woman has her own separate

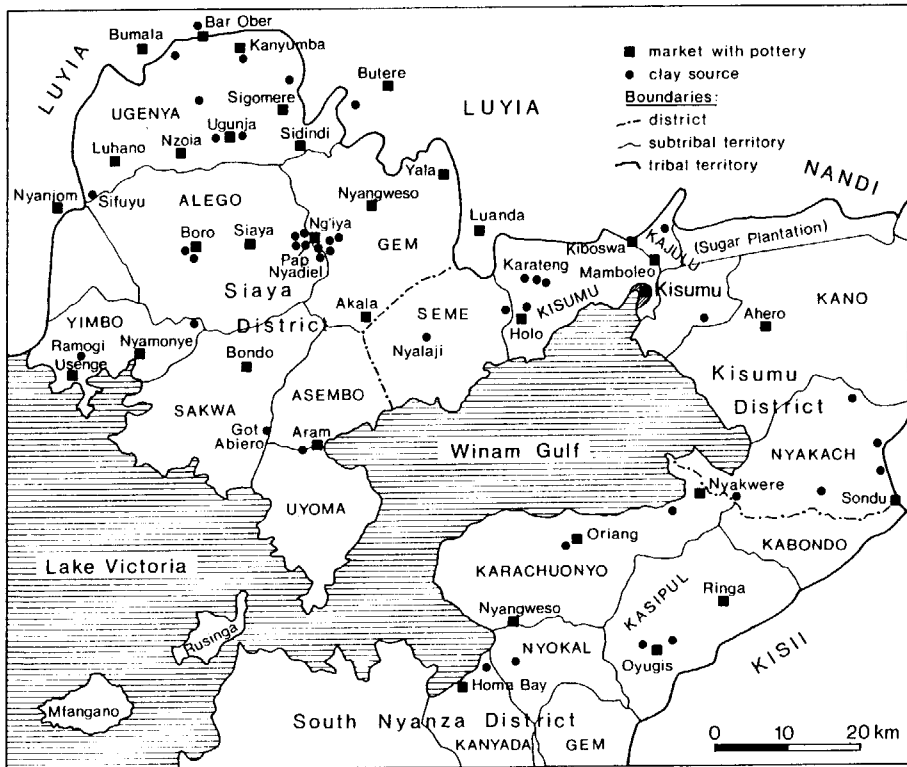


Abb. 1: Map of Luo territory (excluding southern portions of South Nyanza) showing boundaries of tribal and sub-tribal areas, major active clay sources and markets with significant pot sales. Kisumu is the only urban center in the area.

house and granary. The subsistence base is furnished through hoe agriculture performed predominantly by women in small fields scattered around the homesteads; sorghum, millet, maize, cassava, beans, and sweet potatoes are all important crops. Fish caught in the lake and traded throughout the area are another major food source. Cattle are significant as a medium of wealth (especially bridewealth) and to a lesser extent, along with sheep and goats, as a source of milk and meat. Pottery serves a wide range of functions including cooking, serving, brewing, storage, water cooling and transport, and ceremonial uses, and is a common (perhaps the most common) element of material culture in nearly every household.

Pottery is made by women, but only by a relatively small minority of women. In this sense, and in view of the corollary that Luo pottery is a "commodity by destination" (Appadurai 1986) produced specifically for exchange, potting is a specialized craft. However, potters are not full-time specialists able to live wholly or even in large part off the earnings from their trade. Like all other Luo women, potters must meet heavy agricultural and domestic responsibilities: each Luo wife is solely responsible for growing and cooking all the food for her family, maintaining her house, rearing her children, and jointly responsible with her co-wives for feeding the husbands and guests. Potting is an additional activity performed (as with occasional "target selling" of small amounts of grain, eggs, vegetables, etc. at the local market) in order to obtain a small cash income (see also Pala 1979). Although meagre, this money is the personal property of the potter (i.e. rather than belonging to her husband) and is used by her for such things as household supplies (e.g. soap, salt, matches), school fees and clothes for children, luxury foods for guests (e.g. tea and sugar), extra food in lean times, and various sudden emergency expenses. As one potter aptly put it, "Potting is our second garden".

This mode of ceramic production corresponds to what Peacock (1982) has defined as a "household industry" (2). Potting takes place in the homestead as part of the daily routine of domestic activities without any specialized workshop facilities; it is frequently performed in the shade under the verandah of the potter's house, the same place where these women prepare vegetables for cooking, cut or pound cassava, grind sorghum, and carry out other such tasks. While pottery

production continues throughout the year, there is a marked curtailment during certain seasons: for reasons of competition for time, production falls off during periods of peak agricultural activity (planting, weeding, harvesting and storage), and it is also considerably reduced during the rainy seasons when drying and firing pots become more difficult. Despite these limitations, however, the annual volume of production is impressive. Luo homes (and those of some neighboring tribes) are kept supplied with an abundant output of a large ceramic repertoire by a group of women constituting less than 1% of the population.

These women are not uniformly distributed throughout the region. Although some isolated potters practice the craft, the vast majority of potters tend to live in homesteads clustered in close proximity to one another (usually with several in each homestead) in the neighborhood of a clay source. We refer to a network of interacting potters in such a cluster as a "potter community" (Herbich 1987, Dietler & Herbich 1989) although this should not be taken to imply that potters live in bounded groups isolated from non-potters (see Fig. 2). Potting, like many other work activities, is a social labor through which women become engaged in an important network of shared action, knowledge, and personal relationships; and it is this network which constitutes the potter community. Women who are potters have many roles which are important in defining their total status, and the identity as a potter (*jachuech*) is by no means the most significant in the definition of their social identities (motherhood, lineage, and religious affiliation, for example, are all considerably more important). Yet the network of interaction among potters does have a major influence on the pottery they make (see Herbich 1987).

Each potter community tends to produce pots with characteristic combinations of decorative, formal, and technological features which we call "micro-styles". These are the result of local traditions of manufacture, which include distinctive concepts about ceramic design, technical operations, and materials. These local traditions are perpetuated by women who, in most cases, came originally from outside the area of the potter community. While this may seem counter-intuitive, (3) this transmission of local traditions to new members of a community and their conformity to local tastes result from a patrilocal system of post-marital residence among exogamous patrilineages, a concomitant

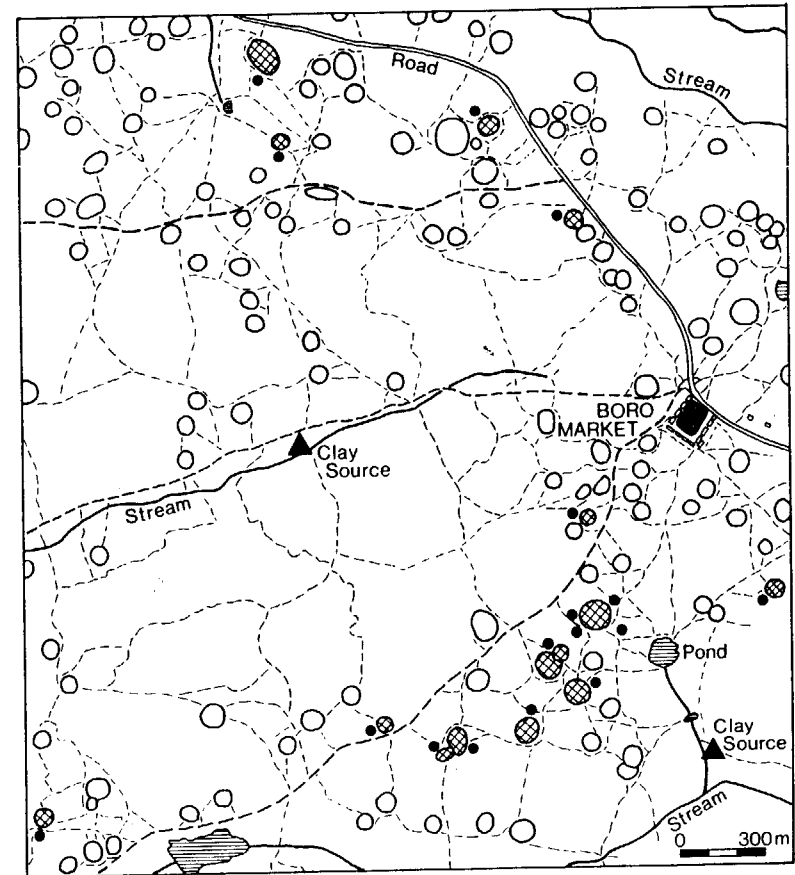


Abb. 2: Map of potter community serving Boro market, Alego.

mother-in-law/daughter-in-law learning pattern, and strong pressures for resocialization (see Herbich 1987). The micro-styles are not static, however. They are conditioned by processes of personal interaction among potters which determine the incorporation of innovations (decorative, formal, or technical) within the patterns of choice in the operational sequence of production shared by an interacting network of potters (Dietler and Herbich 1989).

Pottery Forms, Functions, and Terminology

Pot forms show a great deal of variation from community to community over the whole Luo territory, and this variation is manifest at two levels. The "global" repertoire of forms made and used by the Luo can be divided into 13 broad categories (see Fig. 3). However, this is an abstract classification, and it should not be taken to imply that vessels of a certain form category are (or are intended to be) identical in different areas. Rather, each potter community produces its own characteristic version of a given form which differs from the versions of that same form category (according to our classification) produced by other potter communities in terms of vessel proportions, rim and neck profiles, body curvature, etc.

Moreover, local versions of all 13 form-categories are not produced by any one potter community or used in any one region: the "global repertoire" is an artificially inclusive summary of a polythetic set. Every area actually uses a slightly different overlapping subset of about seven to eleven of these form categories (each of which is rendered in its locally distinctive version) to serve a roughly identical set of functions. For example, people in the area around Ng'iya use local

versions of vessels of forms a, b, d, f, g, h, i, j, k, l, m; while those in the nearby area around Akala use slightly different versions of forms b, d, f, g, i, j, l, m, and replace (in terms of function) Ng'iya's forms h and k with form c.

The complexity of the Luo pottery systems is well illustrated by the complicated articulation of vessel forms, functions, and local taxonomy which shows considerable geographic variation and precludes any easily comprehensible general description. There is no consistent classificatory terminology for pottery among all Luo people, but rather (as with the micro-styles) a mosaic of local sets of terms. Moreover, nor is there a consistent, systematic association between vessel forms and functions from area to area. In brief, not only are the local sets of terms polythetic, but there exists the further complication that even when the same term is used in two different areas it does not necessarily refer to the same form of pot or to pots used for the same function. One of the few terms applied universally to a similar concept is the general word for clay pot: agulu (pl. agulni).

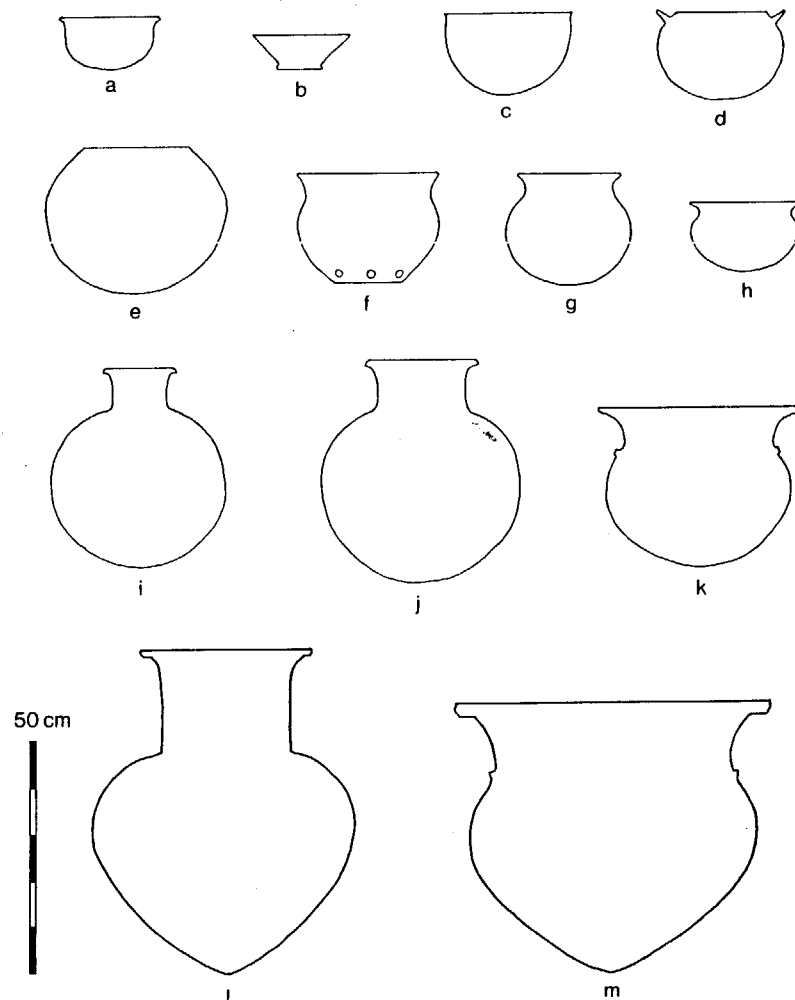


Abb. 3:

Schematic outline presentation of "global repertoire" of form categories for Luo pots. Each abstract category is here represented by a form which is a specific local rendition of that category from one area rather than a generalized composite form. Examples of each form category from other areas will vary in size, vessel proportions, rim and neck profiles, etc. Size variations, which are often functionally significant, also apply within form categories for the same potter community.

More specific local terms tend to be based on variable combinations of formal and functional criteria. For example, the term dakuon is used in Ng'iya to refer to a large version of pot form g (see Fig. 3), whereas in Oriang it refers to pot form e. Each area uses its own version of the dakuon to perform roughly the same functions (cooking sweet potatoes, maize, beans, or porridge). The name derives in both cases from an additional function for which (because metal pans are more resistant to the vigorous stirring required) the pots are now rarely used: cooking kuon, the staple starch food (a stiff porridge made from sorghum and/or maize meal, similar to polenta). On the other hand, the term mbiru is used in Ng'iya to designate a vessel of form k used for drinking beer, while in Aram it designates a vessel of form j used for water cooling and storage. Finally, a small vessel of form g is used in all areas to cook meat or green vegetables, but it is called ralung in Ng'iya (for both functions), and aguch ring'o or aguch alot in Oriang (when used for meat or vegetables respectively). These examples are typical, but far from exhaustive, of the kind of variation that occurs in the relationship among forms, functions, and pot terms.

A further complication arises from the problem of real and ideal functions. That is, every pot form has one or more stereotypic intended functions, and these are sometimes reflected in the name for a pot (e.g. dapi for a water pot; pi means water). However some common functions (such as grain storage) have no designated pot form, and must be served by pots intended originally for other functions. In fact, almost all pot forms are sometimes used for other functions than those included in the stereotypically associated range, and sometimes these "unofficial" functions may even predominate. For example, as noted above, there is no specific pot form made "for storage", yet this is a very common use for pots of many forms. In fact, many pots made and named "for brewing beer" or "for drinking beer" may actually be used much more often for storage than for their primary intended function.

As a rule, pots with the least frequently occurring primary stereotypic functions (e.g. beer-drinking pots) are those likely to be used more often for such "unofficial" functions. Moreover, those functions without a designated pot form (e.g. storage) are most likely to be served by the widest range of pot forms. Also, as

pots wear out with age or are damaged, they may be relegated exclusively to functions for which they were not originally intended.

While there has been some encroachment of imported metal, enamel, and plastic containers and bowls into the use patterns for ceramic wares, the pot repertoire has been generally quite resistant to replacement and the craft of potting is thriving. This resiliency of the traditional clay pots is due to several factors, including their relative low cost and superior efficiency for certain functions. For example, women say that most foods taste better when cooked in clay pots and the porosity of water-storage pots makes them very effective cooling devices. Those pots most subject to competition from imported wares are water-transport vessels (which have been largely replaced by lighter and less breakable plastic containers and metal buckets) and some small eating bowls. Although the important function of cooking kuon (mentioned above) has now been largely transferred to unbreakable metal pans, the various forms of dakuon have continued in heavy use because they had several additional major functions (cooking nyoyo, a mixture of dried maize and beans, or sweet potatoes, etc.) for which the larger size and superior heat retention of clay pots are better suited to the slow cooking required than are metal pans.

In addition to the 13 "traditional" Luo form categories, there are also two forms made exclusively for the neighboring Kisii people by potters in South Nyanza District and sold largely at Oyugis market. These are made by the standard techniques described later and decorated in the same style as other Luo pots made by potters in those communities which produce them. There are also three potter communities (in Alego, Seme, and Karachuonyo) producing wares for which the forms are largely copied from imported European models (e.g. tea pots, cups, saucers, pitchers, plates). These wares are excluded from discussion here because they are relatively peripheral, in that they have very different distribution and use patterns from pots in the "traditional" repertoire, and because they employ different production techniques.

Production

Clay and Temper

The basic raw materials for potting, clay and temper, are obtained directly by digging them out of the ground (Fig. 4). All the potters in a given community generally share common sources of both clay and temper, and these are all designated by a name. Some of these sources have quite a widespread reputation even among non-potters. The sources are often, but not always, located on low-lying land in river or stream valleys. According to the traditional system of land tenure, clay sources, as with all land, are corporate lineage property and anyone has the right to freely collect clay. However, in certain areas where recent government-instituted land adjudication programs have been carried out, they have granted individual ownership of



Abb. 4: Potter digging clay from Udida source, Alego.

land to men and these newly designated owners have sometimes tried (not always successfully) to charge potters for clay extraction.

Clay and temper sources are usually located within about 2 km distance from the community using them. In only one case was clay transported very far, and this was also the only instance of a potter community consistently obtaining clay indirectly: clay from the highly regarded source of Nyalaji (which is used for potting without any additions by the potters exploiting that source directly) is carried on donkeys by one man and sold to some potters in their homesteads near Aram market, about 20 km to the west (see Fig. 1). These potters then mix Nyalaji clay with that from a local source which is considered to be inferior. The same man also occasionally supplies these potters with clay from the source of Got Abiero, about 7 km further to the west. Occasional isolated potters (i.e. those living interspersed between potter communities and working on their own outside the community networks) will also sometimes obtain clay indirectly by arranging with people who request pots to be made for them to supply clay, usually an amount greater than that necessary for the pots requested. In this case, pots are often exchanged for the labor of providing the clay. Ochre, for those communities which use it in decoration, often comes from more distant sources and is obtained indirectly from traders who bring it to the market, or from visiting relatives and friends.

In the "core" region of our study (an area of about 3,000 square km comprised essentially of Siaya District and bordering areas), there were 27 major active clay sources, each exploited by one or more potter communities (see Fig. 1, which also includes clay sources outside the core area). As is evident from the map, these clay sources are not evenly distributed. For example, there are nine in the area of Ng'iya market alone, several other markets are served by two, while many have only one. Moreover, the northern territory of Ugenya has a more dense concentration of sources, while the southern territories closer to the lake have far fewer and more scattered sources. It is not clear to what extent this distribution of currently exploited major clay sources accurately represents the natural distribution of good potting clays. However, such a correlation is rather doubtful, as the natural distribution of clay deposits in general does not correspond to this pattern: in addition to the local sources

exploited by occasional isolated potters, there are scattered local clays of various qualities used for surfacing house walls. Moreover, regional differences in population density exhibit a suggestive, if rather general, correlation with the concentration of major active clay sources. It is certainly evident that limited availability of suitable tempering material is not a primary determinant of the common type utilized in each community.

There is also a temporal component to be considered. Many of the sources have been in continuous use since at least the early decades of this century. However, exploitation of a few is of more recent origin and some older sources have been abandoned due to exhaustion of good clay or the occurrence of accidents, which are usually explained in terms of witchcraft or transgression of rules of behavior. For example, the source known as Ulongi, near Boro market, is reported to have collapsed and killed a woman after pursuit of a bed of good potting clay had resulted in a tunnel of several meters depth. Potters no longer attempt to exploit this deeper bed because "Ulongi kills". Additionally, it is said that "chola is on Ulongi", meaning that a state of spiritual danger associated with a death has made the clay useless (reflecting the inferior quality of the accessible clay which is occasionally gathered nearer the surface at the site). Another source, Got Abiero in Sakwa, is said by potters from a community near Aram to have been "weakened" (to the extent that it can no longer be used without mixing it with other clay) by a potter who broke a taboo against urinating during the trip to gather clay and by other potters gathering it while in a state of chola. However, this source is still used without mixing by potters from another community than that of the potters relating the tale and is said to yield strong pots.

For some sources, an "initiation" ritual must be performed by a new potter gathering clay for the first time. At the pit, she must fashion several miniature pots from the clay and then dance around them singing a verse which varies slightly according to the source (it is usually focussed around the phrase "now you have seen me"). It is believed that unless potters offer their respect to the clay in this way, it will not behave properly for them and they will never master the craft of potting.

Sources vary in the kinds and number of clays and temper they yield, and in the treatment necessary for their utilization. Some sources have only one type of either material, but others have multiple beds of clay and temper (for example Ramogi has 4 and Sifuyu has 5), and potters must learn the proper combinations and proportions for mixing. In some communities, all pot forms in the local repertoire are made from the same mixture of clay(s) and temper, while in others different combinations are thought to be better suited to different functions. For example, all potters in the community near the Tingare source make the complete range of pots (cooking, serving, brewing, etc.) from the same clay, while those using the Sifuyu source have their own favorite combinations of clays and temper and often use different mixtures for cooking and water-storage pots.

Potters often express very definite opinions about the merits and characteristics of different clays, and this knowledge is sometimes exhibited by buyers of pots as well. For example, potters from the Kathomo Rakuom community (near Ng'iya) use clays from three different sources (Lela, Nyarodhi, and Ochuoga) alone or in various combinations, with ground sherds (oguya) and sometimes sand for temper. Of these, Ochuoga has the best reputation for producing strong, durable pots, and knowledgeable buyers sometimes ask for pots made largely or wholly of this clay. In contrast, Nyarodhi by itself is not considered good enough to make large cooking pots and is generally used in combination with other clays.

Temper is also a subject of deeply held convictions (although Luo potters do not classify clay and temper according to this functional distinction, they are aware of the difference: Dietler & Herbich 1989). Some clays (e.g. Nyalaji) naturally contain clastic particles of the proper type and quantity such that they can be used without any further additions. Most, however, require the admixture of non-plastic elements to prevent cracking during drying and firing, and to increase resistance to thermal shock during cooking. Despite the widespread availability of suitable material, in most communities this temper takes the form of a coarse sandy soil extracted from a common source. In one area (and exclusively in this area within the "core" region of the study), potters from all the communities exploiting the 9 clay sources around Ng'iya market produce temper artificially by crushing the sherds of



Abb. 5: Grinding sherds for temper; Pap Nyadiel, Alego.

broken pots (Fig. 5). This use of sherd temper (oguya) is, again, clearly due to local tradition rather than to a dearth of naturally occurring potential temper material. Such material is readily available and potters are aware that it is used in other areas. Yet they eschew it and are willing to exchange a new pot for two old broken ones to assure their supply of temper (one old pot supplies sufficient temper for about three new ones of the same size). Even in one of these communities where sherd temper is sometimes augmented with sand for certain types of pot, the sherd temper is never replaced by the more easily obtained material; oguya is felt to be absolutely essential.

Forming and Decorating Vessels

The Luo employ only a very limited range of ceramic manufacturing techniques and equipment within the wide variety utilized in Africa as a whole (see Drost 1967). Nevertheless, significant possibilities for variation in technical and design choices exist within this range, and the local patterning of these choices results in the distinctive micro-styles noted earlier.



Abb. 6: Smoothing join of added rope of clay; Pap Nyadiel, Alego. (earlier stage of pot in Fig. 7).



Abb. 7: Scraping with ombasa seed-pod to form vessel; Pap Nyadiel, Alego.

The few simple tools used in forming and decorating pots, and hence in creating the patterns of local variation in stylistic attributes which constitute the micro-styles, are relatively consistent throughout the Luo area. The universal base support and turntable is a large specially prepared semi-spherical sherd (balatha-go) from the bottom of a broken pot; potters usually have ready a number of these, of various sizes. The essential scraping and smoothing tool (Fig. 8) is the large, roughly elliptical seed-pod of the ombasa vine (Tylosema fassoglensis). In some communities, the edge of the ombasa is also used to execute incised decoration. Small, split reed shafts (odundu) are used in some areas to produce continuous (generally horizontal) bands of impressions (Fig. 9). Small sticks may be used for this same purpose in other areas, and for incising geometric motifs (for example near Aram a twig of the Euphorbia bush, the plant which forms the hedge-fence surrounding Luo homesteads, sometimes serves this function). Burnishing is executed with a smooth pebble (for the rough initial work) and with a small hard seed of the ajua shrub (Caesalpinia volkensii). Finally, depending on the community, one or more of three types of rouletting implement are used to roll over the wet paste and impart a continuous pattern (Fig. 10). The most common type, and the exclusive form in many areas, is what we have previously (Herbich 1987) called "braided" but now (following the classification of Soper 1985) call "knotted-strip" roulette. This involves using a cord (kuga) of about 5 to 7 cm in length made from a strip of split reed or nylon (the materials yield slightly different impressions with the same knotting or plaiting pattern, and these impressions also vary according to the width of the strip used). In a few areas, a cord of similar size made from a string rolled between the hands and allowed to twist back on itself (what we have previously called "rolled-and-twisted", and what Soper calls "twisted-string roulette") is used to produce a very different impression. In one area (Yimbo) a section of dried maize cob is used to produce another highly distinctive pattern. The impressions also vary somewhat depending on the degree of wear on the rouletting tool, the amount of hand pressure applied, the wetness of the surface, and the amount and angle of overlap of repetitive applications.

In some communities, two different types of roulette decoration may be applied to the same pot. For example, at Aram it is common to find twisted-string decoration



Abb. 8: Smoothing rim with ombasa seed-pod; Oriang, Karachuonyo. One of two forms made specially for the neighboring Kisii.



Abb. 9: Applying band of reed impressions; Pap Nyadiel, Alego. (later stage of pot in Fig. 7).



Abb.10: Applying knotted-strip roulette decoration; Pap Nyadiel, Alego. (same pot as in Fig. 7). Smooth areas will be decorated with ochre paint and burnished.

on the upper body and knotted-strip on the bottom, and in Yimbo potters often use twisted-string on the shoulder and corn cob roulette on the rest of the body. This observation is emphasized because African archaeologists have sometimes taken the geographical distribution of different types of roulette to be indicative of different cultural or linguistic groups (see Soper 1985). In particular, knotted-strip roulette has been associated with Nilotic peoples. This relationship appears dubious when examined in detail, especially in view of the fact that in Western Kenya it is the most common form for both the (Nilotic) Luo and the (Bantu) Luyia, while some Luo potter communities do not use it at all. Moreover, twisted-string roulette is found on many older Luo pots (including those from long abandoned settlements) in areas which currently use only the knotted-strip form.

The process of forming pots begins with an arduous mixing together of clay, temper and water to form a

working paste. This generally involves extensive kneading with hands or feet for periods of up to about 20 minutes. Undesirable impurities may also be selectively removed from the clay by hand during this process. A small, thick disc of potting-paste is then modelled in the hands and pressed into a balathago base previously dusted with temper or lined with banana leaves or plastic.

Thick ropes of paste are then formed by rolling between the hands and added to the initial disc by the technique known as the "coil method". These ropes may vary from about two to ten cm in diameter, depending partly on the potter's habits but mostly corresponding to the intended size of the pot. Of the three variants of the coil method distinguished by Rice (1987, 127), "spiral coiling" is never used, but both the "ring building" and "segmental" methods are. In the Luo case, a distinction between the latter two seems relatively meaningless, as they may both be used on the same pot depending simply on the circumference of each ring being added. The ropes always overlap slightly on the interior or exterior, and are well joined by both squeezing together between thumb and fingers and smoothing strokes of the thumb (Fig. 6). Shaping, thinning, and smoothing of the walls are accomplished by scraping with the convex edge of the ombasa pod against counteracting pressure of the palm of the hand on the opposite face of the vessel wall (Fig. 7). The neck is formed in the same way and the rim is finished by scraping with the ombasa and smoothing between the fingers and thumb of a wetted hand (in some areas a banana leaf is used) while the pot is rotated with the other hand. There is considerable variation among individual potters in the sequence of operations by which the pots are formed. For example, some potters begin shaping after the addition of a few ropes of paste and continue to shape after the addition of each additional level, while others add many levels before any shaping is done. Likewise, some potters completely shape the body before adding the neck, whereas others add the neck and rim before they begin to do anything more than preliminary shaping of the body. Small to medium-sized pots are formed all in one sitting, but larger pots may have to be left to dry somewhat before the upper portions are added, as the wet paste of the thinned lower walls cannot support the weight of the top section.

Decoration is executed once the vessel has been completely formed, and may be divided into wet-paste and dry-paste procedures. The sequence and kinds of decorative operations performed vary according to the area, potter, and pot form being decorated. However, rouletting, which involves rolling one of the three implements described earlier over the wet surface of the pot with the fingers (Fig. 10), is frequently the first (and sometimes the only) operation. Roulette impression is the most universal decorative trait of Luo pottery (but not, as noted earlier, exclusive to it) as it is applied to the body, and sometimes the neck, of almost all pots. Depending on the area and pot type, further decoration may also be applied to the wet surface. This may include geometric motifs (usually in horizontal bands) incised on the shoulder, neck, or mid-body with the ombasa pod or a stick, and/or bands of reed or stick impressions.

Following the completion of wet-paste decoration, the pots are left to dry overnight, still in the base-plate, in the house of the potter. The following day, they are tipped out and the bottom of the pot is finished. This involves scraping the bottom surface smooth (both inside and out), beating the exterior lightly with the flat face of an iron hoe blade, wetting it slightly with the hand, and then rolling a roulette over it. The pot is then left to dry upside down. Pots are never dried directly in the sun (except for the few hours just before firing when they may be warmed in the sunlight), as this is believed to produce cracks. Rather, they are kept indoors, in the potter's house or kitchen, for periods of up to several weeks (or even longer in the rainy season). Most potters agree that at least 3 or 4 weeks drying time is advisable, but in practice some potters take risks and fire after only a few days. In certain communities very short drying times have become standard practice (although the ideal of longer drying times continues to be held), and potters will begin immediately after market day making the larger pots in their repertoire to give them the longest drying time before the next market.

Once the pots have dried, certain types of pots in some areas may also be decorated with red-ochre (pala) paint. This involves grinding ochre, mixing it with water, and applying it with the fingers to the rim and to smooth horizontal bands (or occasionally other motifs) left in reserve on the body during the wet-

paste decorative operations. These paint-covered surfaces are then subjected to the most arduous of all the decorative operations: burnishing with an ajua seed to render them shiny. Rims and similar reserved bands are also frequently burnished on non-ochre-decorated pots in many areas. Both individual and community traditions of design choice are reflected in the decorative patterns resulting from the various permutations of these operations (Herbich 1987, Dietler & Herbich 1989).

Firing

Firing (wang'o) of pots is conducted in a shallow depression (sambro) usually located outside the fence of the potter's homestead. Occasionally the sambro may be located inside the fence at a spot hidden from the view of passersby, indicating that the potter has been having problems with broken pots in the firing and suspects witchcraft. Concern for protection against the effects of the "evil eye" outweighs the greater risk to the thatched roofs of the homestead. In almost all communities, potters fire on their own, or perhaps with one other person (often a mother-in-law or co-wife); but in the community of Pap Nyadiel larger groups of potters regularly fire together in order to save work in preparing the firing place and gathering fuel. However, these cooperative firing parties are constantly splitting up and reforming in other combinations due to the witchcraft suspicions raised by the inevitable problems that arise in this risky phase of the potting process. Most women in other areas are unaware that cooperative firing is practiced anywhere and, when told about it, say that, although it sounds like a good idea, they prefer the extra work to the tensions of having too many people involved in the firing.

The firing place is prepared by first scooping out all the ash left from the previous firing. Over time this process deepens the depression to a point at which it is thought to be no longer functional and it is abandoned, usually with the new sambro placed immediately next to the old. A scattered layer of rocks and chunks of fired earth is spread over the bottom. This is then covered with a layer of branches and the pots are placed on top of this in a single level (Fig. 11). All of the mouths face to the side in one direction. The number of pots varies from about 10 to 20 for one- or two-potter firings up to over 70 for the larger firing parties. This structure is then covered with more



Abb.11: Group of potters charging sambro (firing pit) for a joint firing; Pap Nyadiel, Alego.

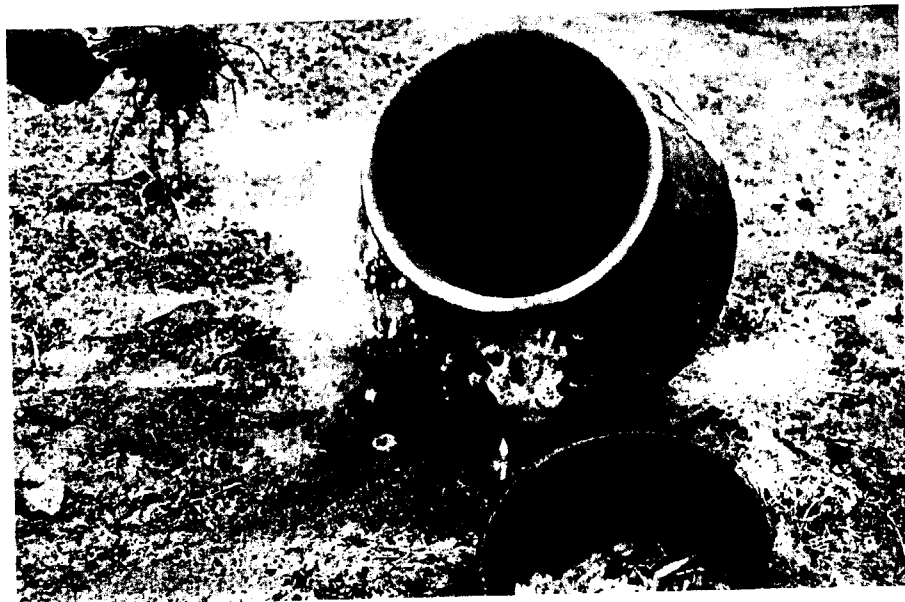


Abb.12: Applying bark infusion after firing; Boro, Alego.

branches and a thick blanket of loose bundles of long grass. Potters prefer to use the thatching grass from the roofs of old kitchens, with its black coating of soot, and abandoned houses are frequently dismantled to this end. However, ordinary grass cut a few days ahead is more commonly used, and potters also have preferences about the species. Other materials may also be used to supplement or substitute for the grass. Dried sisal stalks may be added, for example, or dried stalks of sorghum and maize may be used after the harvest, or papyrus reeds may be used by those close to the lake or the Yala swamp. We have also heard of dried dung being used in one area, but have not witnessed this personally.

When the stack is complete, it is lit from below and catches fire rapidly. It burns for roughly 50 minutes to an hour, during which time it is carefully tended (gaps in the blanket of grass are quickly covered over by shifting the material with long sticks). When the pots begin to show through the ash they are removed, still extremely hot, with a long wooden pole. Those with ochre decoration (where this mode of decoration is practiced) are simply allowed to cool. In most areas (but not, for example, in Yimbo), the remaining pots are splashed with a bark infusion (orwech) which sizzles on the pots and, depending on the type of bark used locally, turns the pots a shiny or matte black, matte brown, or mottled brownish color (Fig. 12). Potters say this operation strengthens the pots. For cooking pots, buyers will perform the final operation of sealing the pores by first cooking banana skins, sweet potatoes, or a thick starchy porridge in them.

There is also a technology of camouflaging or correcting defects. Chips or breaks on the rim make little difference, as buyers are normally interested primarily in the general soundness of the pot (much more than in decoration) and will ignore such imperfections. However, cracks in the body or poorly fired sections are serious problems. Just before putting pots in the sambro, cracks which have appeared in drying may be filled with wet clay, the surrounding surface moistened, and the whole patch gone over with a roulette to hide the repair. To camouflage small post-firing cracks on the interior, potters will sometimes rub banana skins over them, leaving a dark residue which makes them difficult to see. Poorly fired sections of a pot are evident from a dark cloud on both the interior and

exterior (a cloud on only one surface is not significant). These are normally visible only on ochre decorated pots, as the post-firing treatment with bark infusion hides most color variations on other pots. However, both these types of defect are detectable by tapping the surface of the pot with a stick, coin, or fingers; and most buyers do this as a matter of course (the preferred implement of percussion varying according to the market), sending up a great combined noise. A well-fired pot sends out a high, clear ring, while a poorly fired section will sound dull, and a crack will give out a vibrating buzz. If a pot is considered too badly fired to have any hope of selling it, it may be re-fired at the next firing rather than trying one's luck at the market (which brings the risk of having to carry the pot back home again after having paid the market tax for bringing it in).

Production Characteristics

Production output varies a great deal according to both the season and the potter. In addition to the decline in potting activity during peak agricultural periods mentioned earlier, the rainy seasons also limit production. This is because pots take longer to dry, because sudden rain can turn a firing into a disaster of broken pots, and because the sambro floor must be thoroughly dry before attempting a firing or rising steam will crack the pots. Many potters work fairly regularly, a few hours almost every day during the dry season, and carry a load of pots to market every week or two. Others are much less productive: some work fairly regularly throughout the year but make only a few pots and some are "target producers", engaging only occasionally in potting when a specific need for money arises.

Not counting clay extraction and mixing, a good potter can produce a small fish pot in about half an hour, with an additional 10 minutes the next day to finish the bottom. A medium-sized water-storage pot may take her an hour and a half to two hours to make, 15-20 minutes to finish the bottom, and another hour or more to apply ochre and burnish. This means that in peak seasons (when there are few demands for time other than normal household activities) a good potter may be able to make about 2 large pots or 6 small pots in a day, although potters in most areas rarely produce more than about 20 pots (mixed sizes) in a week. Both storage problems and the difficulties involved in carrying the

pots to market in headloads limit incentives to produce much more than this. Less skilled potters usually work more slowly; however, there are also some potters who work quite fast but do not take the same care in executing and finishing the pots as the best potters do. The pots made by the better potters, as a rule, show more consistency in proportions from one pot to the next and both the form and decoration of individual pots tend to be more even and symmetrical. Moreover, greater care is taken in finishing the pots, as exemplified by such features as more careful burnishing, more even wall thickness, and smoother interior surfaces.

In most areas, each potter makes all the pot forms in the local repertoire. However, in some cases communities specialize in the manufacture of certain forms, and production of the local repertoire is divided among two or more different potter communities. For example, Ng'iya market is served by several different potter communities, with one making only ochre-decorated eating bowls, one making only ochre-decorated water pots and beer-drinking pots, and another making only monochrome cooking and brewing pots. At the inter-tribal market of Luanda, specialization is divided according to size, with Luo potters selling only small cooking pots and Luyia potters selling only large cooking, brewing and water storage pots.

Distribution

Most Luo pottery is distributed through a network of periodic markets (usually weekly or twice-weekly) which developed in the early part of this century out of sporadic famine markets of the precolonial period (Dietler 1986, Hay 1972). Small daily markets are also common, but pottery is normally available for sale only at certain of the larger periodic markets (Fig. 1; 13). The quantity of pottery regularly offered for sale varies considerably among the different markets, and each market has significant seasonal fluctuations (see Herbich & Dietler in press).

Both primary and secondary distribution of pots occurs through the markets (Herbich 1986). By primary distribution is meant the direct sale by potters of their own wares. This is the practice which occurs at most markets, and potters usually live within about 5 km of the market at which they sell. At some markets, the spatial diffusion of pots is extended by secondary distribution



Abb.13: Pot section of Ng'iya market, Gem/Alego, during the rainy season, showing reduced volume of pottery.

through traders (*johala*) who buy quantities of pottery from various potters and resell them at a higher price either in other markets where direct sale by potters does not occur, or from homestead to homestead in regions without a local potter community. At some markets (e.g. Aram, Luanda, Kiboswa, Sondu, Oyugis) a large percentage of the potters' sales are to traders and, in all but the first example, many of these pots are carried into the territories of the neighboring Luyia, Kipsigis, and Kisii peoples, and some are eventually carried well beyond into Maasai territory, the Baringo basin, and other areas.

For most markets, excluding those at which buying by pot-traders is a factor, pots do not travel very far; the distribution pattern from such markets is largely contained within about a 15 km radius (Herbich 1986, Herbich & Dietler in press). This is because for both purchasers and potters the nearly exclusive means of transport (within the "core" region of the study) is on foot, with pots carried as a headload. The common method of preparing headloads is to stack, base to mouth, as many pots as can be carried, with banana leaves or small twigs between the pots to absorb shock,

and secure the bundle with rope. Potters at a few markets in South Nyanza (e.g. Oyugis) have developed a different transport apparatus, which consists of a circular wooden frame covered with netting onto which pots are stacked in the shape of an inverted cone. For a few markets in South Nyanza and Kisumu Districts, motor transport is used, particularly by traders.

Before the establishment of regular markets, pots used to be obtained directly from the homes of potters; a cloud of smoke rising from the firing of the pots was the signal for prospective buyers to come and barter. This means of purchasing pots still occurs occasionally in all regions (sometimes after having placed a prior specific order), and is actually fairly common in some areas (e.g. Got Abiero, Sifuyu). However, many potters prefer to sell at the market, even to people who live very near to them, because they feel less constrained by the obligations of hospitality which govern interaction in the homestead. Hard bargaining is expected behavior at the market, but in the home there is considerable ambiguity about the simultaneous roles of visitor and purchaser which makes such dealings uncomfortable. Moreover, claims for recompense for unsatisfactory pots are less easily evaded when the purchase was made directly from the home of the potter.

An interesting feature of the ceramic distribution pattern is that it results in a regional spatial configuration of micro-styles such that most of them cut across major ethnic and ethnic sub-group boundaries and the borders of the style zones fall in areas which are of no cultural or social significance to people using the pots. This clearly obviates any suggestion that the micro-styles have symbolic significance in terms of ethnic identity for users (Herbich 1988). A caveat for archaeological interpretation of ceramic style as indicative of group identity is obvious in this pattern; even given a very small geographical extent of the style zones, in the absence of a clear indication of the mechanism articulating the contexts of manufacture and use, there is no basis for any assumption about the identity of users. Moreover, the stability of a particular ceramic style over time, even within a very small region, does not necessarily indicate anything about the stability of the population of users (Herbich 1988).

Conclusion

Although brief and schematic, this description of the Luo ceramic system demonstrates something of the complexity that a "household industry" may be expected to exhibit. Even with a very limited range of tools and basic techniques, numerous possibilities exist for intra-cultural variability in the technology and organization of production, concepts of decoration and classification, and distribution and use patterns. Awareness of this complex variability, and of the social and technical conditions from which it arises, is essential to a more sophisticated general understanding of the operation of ceramic systems and their place in social life. Many factors, such as the degree of specialization of the craft, the process and network through which it is learned and perpetuated, the mechanisms articulating the contexts of manufacture and use, and even the settlement pattern, have a profound role in shaping the material patterns which eventually become the data of archaeology. While our ability to interpret these data is still inadequate, the increasing corpus of studies of the kind reported in this volume are helping to bring the perspective of ancient potters into clearer focus and thereby improve our understanding of past ceramic, and ultimately social, systems.

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Notes

- (1) The research was conducted from April 1980 to December 1982, with brief preliminary studies in 1978 and 1979. It was focussed on a "core" region consisting of about one third of the entire Luo territory (essentially Siaya District and surrounding areas). Other regions were covered by considerably less intensive comparative surveys, and information for those areas should be regarded accordingly. Parts of the discussion in this paper are also covered in Herbich and Dietler (in press), which has been with the editors since 1985.
- (2) Although the term "household industry" was originally proposed by van der Leeuw (1976; see also 1984) we use it in the sense developed by Peacock, which allows for wider potential distribution mechanisms and better approximates the Luo case.
- (3) The evidence of this patrilocal post-marital learning pattern and its resultant micro-styles has important implications for several well-known archaeological attempts (Longacre 1970, Hill 1970, Deetz 1965) to infer residence patterns and social organization from ceramic styles (see Herbich 1987). Eggert's (1978, 59) insightful analysis stands alone, to my knowledge, in recognizing the possibility of this mechanism on a logical basis before it was demonstrated empirically. Subsequent investigation of ethnographic literature has revealed that post-marital resocialization is a more widespread phenomenon in societies with patrilocal residence than has been recognized and may be an important factor in the transmission of culture and in the production and perpetuation of stylistic patterning (Herbich 1989).

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