

**THE ARCHAEOLOGY  
OF REGIONAL TECHNOLOGIES**

Case Studies from the Palaeolithic  
to the Age of the Vikings

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## CHAPTER 12

### Exploring the dynamics of African pottery cultures

Olivier P. Gosselain

This chapter is about ‘pottery cultures’ – not just ‘pottery’, ‘pottery techniques’, or ‘potters’; but pottery cultures. It considers the complex aggregation of interrelated elements underlying potting practice, such as individuals – as both social and embodied persons – environment, physical forces, materials, tools, representations, skills, knowledge, social and economic relationships and so forth. It also concerns ‘dynamics’; the spatial and temporal evolution of the elements constituting pottery cultures, and their interrelations. Departing from previous approaches,<sup>1</sup> I focus on the transformation of potting practice in relationship with social processes rather than seeking static relationships with various kinds of social boundaries.

The reason for again bothering about the irritating concept ‘culture’<sup>2</sup> and its evolution is because of recent contributions to the analysis of cultural dynamics. Archaeology has notably brought forward a series of conceptions largely at odds with what historians, linguists, anthropologists or sociologists for example know about the complexity and evolution of human cultures. Inspired by evolutionary biology, such contributions usually provide a simplified and disincarnated model of reality that highlights the uniformity and universality of human behaviour.<sup>3</sup>

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<sup>1</sup> O. Gosselain, “Social and technical identity in a clay crystal ball”, in M. Stark ed., *The Archaeology of Social Boundaries* (Washington: 1998), Gosselain, “Materializing identities: An African perspective”, in *Journal of Archaeological Method and Theory* VII/3 (2000)

<sup>2</sup> see C. Brumann, “Writing for culture. Why a successful concept should not be discarded”, *Current Anthropology* XL (1999)

<sup>3</sup> e.g., S. Blackmore, *The Meme Machine* (Oxford: 1999), R. Boyd and J. Richerson, *Culture and the Evolutionary Process* (Chicago: 1985), A. Mesoudi, A. Whiten and K. L. Laland, “Toward an unified science of cultural evolution”, in *Behavioral and Brain Sciences* XXIX (2006), S. Shennan, “Population, culture history and the dynamics of culture change”, *Current Anthropology* XLI (2000), Shennan, *Genes, Memes and Human History. Darwinian Archaeology and Cultural Evolution* (London: 2002)

Among the many criticisms that may be addressed to these works,<sup>4</sup> three interest me here: the usual emphasis put on ‘transmission’ (both vertical and horizontal) in explanations of cultural dynamics; the superficial consideration of what would be actually transmitted – usually referred to as ‘information’, following Boyd and Richerson<sup>5</sup> – and the overall disdain for empirical data. Unlike Mesoudi et al.,<sup>6</sup> who are keen to reject criticisms by reminding us that “Darwin formulated his theory of evolution with little understanding of genes or Mendelian inheritance,” I believe that no serious and robust theory of cultural dynamics may be formulated without drawing on field observations and a detailed understanding of the processes at work. In other words, we, as social scientists, cannot satisfy ourselves with a ‘little understanding’ of the elements that constitute cultural contexts and of the forces that act upon their evolution. This is what I want to illustrate in this chapter, by focusing on the dynamics of pottery cultures in Africa.<sup>7</sup> Technical systems in general – and pottery making in particular – present all the characteristics we nowadays attribute to cultures: heterogeneous and ongoing aggregates mixing practices, representations, objects, and actors.<sup>8</sup> As such, technical systems constitute a legitimate avenue for approaching culture in general, but an avenue all the more interesting since it does not merely concern representational phenomena but an intricate mix of physical actions and representations.

First, I examine the ‘ingredients’ of pottery culture, following the various stages of the manufacturing process. This provides information about the many dimensions of potting practice, including actors, materials, tools, and representations, and give a first insight of the elements bearing on technical behavior. Then

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<sup>4</sup> see notably T. Ingold, “The trouble with ‘Evolutionary Biology’”, *Anthropology Today* XXIII/2 (2007)

<sup>5</sup> R. Boyd and J. Richerson, *Culture and the Evolutionary Process* (Chicago: 1985)

<sup>6</sup> A. Mesoudi, A. Whiten and K. L. Laland, “Toward an unified science of cultural evolution”, p. 332

<sup>7</sup> The content of this paper draws on personal observations made over the last two decades, as well as a considerable database of ethnographic data collected since the beginning of the 20th century. I thank Frédéric Joulian, Renaud Zeebroek, Daniel Vermonden and all members of the project “Multiscalar Analysis of Cultural Dynamics” developed at the University of Brussels thanks to the grant “Action de Recherche Concertée” provided by the Communauté française de Belgique. I also thank Randi Barndon for the fine editing job done on a former version of the text.

<sup>8</sup> M-A. Dobres, *Technology and Social Agency* (Oxford: 2000), B. Latour, *Aramis, or the Love of Technology* (Cambridge: 1996), H. Lechtman, “Style in technology: some early thoughts”, in H. Lechtman and R.S. Merrill eds., *Material Culture: Style, Organization, and the Dynamics of Technology* (St. Paul: 1977), P. Lemonnier, *Elements for an Anthropology of Technology* (Ann Arbor: 1992), M-C. Mahias, *Le barattage du monde. Essai d’anthropologie des techniques en Inde*, Editions de la Maison des Sciences de l’Homme (Paris: 2002), M. Naji, “Gender and materiality in-the-making: the manufacture of Sirwan femininities through weaving in Southern Morocco”, *Journal of Material Culture* XIV/1 (2009), J.-P. Warnier, “A praxeological approach to subjectification in a material world”, *Journal of Material Culture* VI/1 (2001)

I will consider how people enter and practice the craft, developing skills on both the social and technical levels. This gives a better position to understand the many forces that act upon the evolution of pottery traditions.

### **‘Pottery cultures’ – ingredients and meaning**

The artisan’s first imperative is to obtain clay, a plastic material, infinitely variable in texture and composition and capable of being durably transformed by firing. Such material is not hard to find because clay is particularly abundant sediment everywhere and because artisans adapt, in practice, to a wide range of materials for making their ceramic products.<sup>9</sup>

This does not mean that clay is extracted *anywhere* or *anyhow*. Extraction zones are often located in particular environments: river banks, backwaters, alluvial plains, or hillsides (Cf. Plate 12.1). The probability of finding clay materials in such places is undoubtedly greater, but this is not the only explanation. Indeed, frequenting certain site categories distorts perception of the pedological environment and artisans end up believing that certain zones are more likely to contain clay than others are. Artisans also know that clay is situated at differing depths from one place to another, so much so that they can sound the ground for days. Thus, it is by labouring the ground in order to prepare a field, digging a well, or practising numerous other activities that the artisan ‘discovers’ new clay sources.

Besides certain symbolic preoccupations, the decision to exploit a deposit implies technical, practical and political conditions.<sup>10</sup> First, the identified clay must possess the required physical properties. Plasticity, texture, colour, and even scent must correspond to the artisan’s personal requirements. Each artisan has a clear-cut and totally subjective opinion on this subject, to the point where it is frequent to see one artisan disdain materials that others use successfully.

When clay is judged adequate, the second requirement is that it is close to other activity zones so that transport does not require too great an investment. In a context where pottery-making often constitutes a sideline activity, artisans try as much as possible to subordinate this work to their main tasks, close to house

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<sup>9</sup> O. Gosselain, *Poteries du Cameroun méridional. Styles, techniques et rapports à l’identité*, CNRS Editions (Paris: 2002), pp. 67–72, A. Livingstone Smith, “Processing clay for pottery in Northern Cameroon: social and technical requirements”, *Archaeometry* XLII/1 (2000), Livingstone Smith, *Chaînes opératoires de la poterie. Références ethnographiques, analyse et reconstitution* (Brussels: 2001)

<sup>10</sup> see examples in K. Nicklin, “The Location of Pottery Manufacture”, *Man* XIV/3 (1979)

or fields. But geographical proximity is not all. As demonstrated by Lyons and Freeman,<sup>11</sup> clay sources may also be selected according to social and political alliances within the community.

Finally, clay extraction sites are ‘loaded’ with symbolic rites and prohibitions. For example, certain categories of people are systematically excluded during the extraction process. Some artisans also perform incantations and offer libations during the opening of a deposit or at the beginning of a season. They must avoid doing certain things the day before extraction or at the site itself; avoid eating certain foods, handling certain objects, or being in particular conditions (pregnant, menstruating, ill, angry, etc.). In practice, a multitude of prescriptions exist to preserve clay quality and availability.<sup>12</sup> It must be stressed that the artisan’s symbolic conceptions are not translated solely by a code of conduct: if need be, these conceptions can influence extraction site selection and the duration of exploitation. Thus, while extraction site locations are theoretically abundant, *actual site selection* goes through a series of technical, economic, social and symbolic filters.

### Paste preparation

The artisan always modifies the selected clay before starting to shape his or her wares. These modifications are sometimes minimal, amounting, for example, to removing a few impurities and to homogenising by wedging (kneading). However, they can also be more complex such as soaking or souring, particle sorting by sedimentation or sifting, and the addition of various elements such as straw, dung, grog, husks, sawdust, other clays, shells, etc.<sup>13</sup>

Clay preparation recipes have often been considered forced adaptations to material and functional constraints: to complete the various production stages and to increase or adapt the physical performance of their products, artisans say that they are forced to make certain modifications to clay – their choices being

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<sup>11</sup> D. Lyons and A. Freeman, “I’m not evil: Materialising identities of marginalised potters in Tigray Region, Ethiopia”, *Azania: Archaeologica Research in Africa* 44/1 (2009), see also J.W. Arthur, *Living with Pottery* (Salt Lake City: 2006), and C. Corniquet, “Cadres de pratiques et circulation des connaissances chez les potières de l’Arewa (Niger)”, *Cahiers d’Etudes Africaines* (in press)

<sup>12</sup> Gosselain, *Poteries du Cameroun méridional*, pp. 200–4

<sup>13</sup> see D. Drost, *Töpferei in Afrika: Technologie* (Leipzig: 1967), Gosselain, *Poteries du Cameroun méridional*, pp. 54–64, Livingstone Smith “Chaînes opératoires de la poterie, M. Sall, *Traditions céramiques, identités et peuplement en Sénégambie. Ethnographie comparée et essai de reconstitution historique* (Oxford: 2005)

made within a limited number of possibilities.<sup>14</sup> This conception has been severely criticised: as with clay selection, production techniques and methods of use actually allow enormous flexibility.<sup>15</sup> But this theoretical behavioral flexibility does not mean that each artisan makes just anything in practice.

First, artisans seem to have a narrow conception about what it is possible – or better still, *suitable* – to make. In one region, people questioned will assert that adequate paste cannot be obtained without first having soaked the clay. Elsewhere, others explain that, on the contrary, the material must be dried out before being modified in the least. The same conceptions can be found regarding additions to clay and what constitute ‘adequate’ plasticity and granulometry.<sup>16</sup>

Another characteristic of clay preparation recipes is their relationship to other technical activities regarding tools and *modus operandi*. Sall demonstrated that the clay desalinisation technique observed among certain Joola Kasa potters in Casamanca echoes the practices for agricultural land preparation in mangrove swamp zones.<sup>17</sup> Moreover, this appears *only* among communities that have recourse to the technique in the field of agriculture. From the Sahara to southern Africa, most of the tools that artisans use to crush, sort, and homogenise clay are ‘borrowed’ from cooking: grindstones, cutting wheels, mortars, pestles, baskets, industrially manufactured sifters, winnowing baskets, gourds, etc. Not only are the movements for use similar, but also the homology can extend to certain parts – or even to the entirety – of the operating sequence.<sup>18</sup> If this sharing of techniques and tools is due to the fact that pottery pastes and meals are mainly prepared by the same actors (women), it has two fundamental implications: first, that knowledge relative to clay preparation is unspecialised; secondly, that preparation methods are profoundly influenced by habits developed in other spheres of activity. This illustrates a basic tenet of the French approach to technology; i.e., that techniques may form a system

<sup>14</sup> M. S. Tite, “Pottery production, distribution and consumption. The contribution of the physical sciences”, *Journal of Archaeological Method and Theory* VI/3 (1999)

<sup>15</sup> Gosselain, “Social and technical identity in a clay crystal ball”, Gosselain, *Poteries du Cameroun méridional*, pp. 66–73, Livingstone Smith, “Processing clay for pottery in Northern Cameroon: social and technical requirements”, *Archaeometry* XLII/1 (2000), Livingstone Smith, “*Chaînes opératoires de la poterie*,”

<sup>16</sup> Gosselain, *Poteries du Cameroun méridional*, Livingstone Smith, “*Chaînes opératoires de la poterie*”

<sup>17</sup> Sall, “Traditions céramiques, identités et peuplement en Sénégalie”

<sup>18</sup> Gosselain, *Poteries du Cameroun méridional*, pp. 66, Gosselain and Livingstone Smith, “The source, Clay selection and processing practices in Sub-Saharan Africa”, in Livingstone Smith, D. Bosquet and R. Martineau, eds., *Pottery Manufacturing Processes: Reconstruction and Interpretation* (Oxford: 2005)

in a given society, through the interrelation of various categories of tools, devices, actors, materials, and knowledge.<sup>19</sup> This may act upon the spatial and temporal evolution of technical traditions.

Another force acting upon the evolution of traditions involves the social representations associated with clay processing recipes. Recent fieldwork done in Niger, among societies with varying degrees of social stratification, show that what potters know of tempering recipes used in other communities may lead to a conscious exploitation of techniques as expressions of social identities, and to subsequent adjustments and borrowings of materials. Where pottery making is constitutive of the potter's identity, individuals take great care to avoid using inappropriate processing recipes that would blur social boundaries. They do so according to what they know about other ways of doing and what they perceive as meaningful boundaries in their space of experience; two phenomena that occur on quite a micro scale and consequently translate into very local processes of technical homogenisation. In contrast, where potters' identity is not at stake – for pottery making is just a source of income – processes of homogenisation occur on a larger scale, notably through kinship networks.<sup>20</sup>

Finally, as with clay selection, certain symbolic conceptions can influence behaviour. Gelbert observes that when Toucouleur potters from Senegal settled in Soninke country, they stop putting dung in their paste because the Soninke consider dung unclean.<sup>21</sup> Also, potters in a series of Songhaï villages in Niger prefer to make their grog with shards that can be collected from sometimes distant archaeological sites: they say that what has lain underground is 'stronger' than what lies on the ground. We thus see that within a wide range of preparation methods, the adoption of specific recipes goes through a series of filters – technical, social, symbolic – that contribute to channelling behaviours at both the spatial and temporal levels.

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<sup>19</sup> e.g., P. Lemonnier, *Elements for an Anthropology of Technology* (Ann Arbor: 1992), M-C. Mahias, *Le barattage du monde. Essai d'anthropologie des techniques en Inde*, Editions de la Maison des Sciences de l'Homme (Paris: 2002)

<sup>20</sup> Gosselain, "Thoughts and adjustments in the potter's backyard", in I. Berg ed., *Breaking the Mould: Challenging the Past through Pottery*, BAR International Series 1861 (Oxford: 2008a), see D. Lyons and A. Freeman, "I'm not evil: Materialising identities for other examples"

<sup>21</sup> A. Gelbert, *Traditions céramiques et emprunts techniques: étude ethnoarchéologique dans les haute et moyenne vallées du fleuve Sénégal* (Paris: 2003)



## Fashioning

When the paste has acquired the desired consistency, the artisan starts the fashioning process; that is, the forming of a hollow volume which he or she will later shape. Several techniques are used in Africa.<sup>22</sup> The most striking aspect about this stage is that it is based mainly on movements. There are no ‘recipes’ at this level – at most, we can speak of ‘organic sequences’ of movements and actions upon matter, but artisans only exceptionally put this into words. Moreover, while techniques such as molding and pounding require special tools and devices, it is especially the artisan’s hands and fingers primarily perform the actions during the fashioning process. The gestures employed are also distinctive because of their relatively specialised character: few ties exist to other activities and only physical postures (for example, working while standing bent over, seated with legs spread or with one leg folded in front) find an echo in domains other than pottery-making.

The fashioning stage is also characterised by a frequent absence of judgments relative to technical specificities. Artisans rarely talk about their techniques, except to emphasise that they “have to proceed this way to throw wares of suitable shape and size.” The existence of alternative techniques is only rarely evoked; most artisans are seemingly convinced that their way is the only way to proceed.

This does not mean that fashioning constitutes the least ‘significant’ part of the manufacturing process. In areas where artisans are regularly in contact with other traditions, we sometimes see the emergence of certain value judgments about techniques.<sup>23</sup> Gelbert observed that the Tukolor potters of Senegal, who mainly use the drawing of a lump technique for fashioning their wares, consider the molding technique used by their Soninke neighbours as being easier and faster.<sup>24</sup> For this reason, they tend to adopt the technique widely. I observed a similar situation among the Zarma and Songhay of Niger, except that value judgments were some-

<sup>22</sup> Drost, *Töpferi in Afrika: Gosselain, Poteries du Cameroun méridional*, pp. 86–113, Livingstone Smith and A. Van der Veken, “The ‘Crossing Border Project’: Pottery tradition in Katanga (DRC)”, *Afrique, Art, Archéologie* 5, in press, O. Langlois, “La distribution des techniques de façonnage de la poterie au sud du bassin tchadien: un outil pour la recherche historique régionale”, *Journal des Africanistes* LXXI, 1 (2001), A. Mayor, E. Huysecom, A. Gally, M. Rasse and A. Ballouche, “Population dynamics and Paleoclimate over the past 3000 years in the Dogon Country, Mali”, *Journal of Anthropological Archaeology* 24 (2005)

<sup>23</sup> e.g., E. Huysecom, “Les percuteurs d’argile: des outils de potières africaines utilisés de la réhistoire à nos jours”, *Bulletin du Centre Genevois d’Anthropologie* III (1992), Gelbert, *Traditions céramiques et emprunts techniques*, Gosselain, “Thoughts and adjustments in the potter’s backyard”, Gosselain, “Mother Bella was not a Bella. Inherited and transformed traditions in Southwestern Niger”, in M. Stark, B. Bowser and L. Horne eds., *Cultural Transmission and Material Culture: Breaking down Boundaries* (Tucson: 2008b)

<sup>24</sup> Gelbert, *Traditions céramiques et emprunts techniques*

times contradictory and borrowing was fairly marginal. Whether real or supposed, the properties attributed to a technique sometimes lead artisans to prioritise expertise and, by so doing, to express – or reify – a social judgment.

Fashioning techniques may also be exploited as emblems of social identity. For example, a Gbaya potter from Yoko (Cameroon), who practiced the drawing of a lump technique but also mastered the coiling technique, choose to pass on the latter to a young Hausa neighbour because, the potter explained: “I’m a Gbaya and she’s a Hausa. She needs her own technique.” Among Niger’s Songhay blacksmiths, I also met women who had acquired the molding technique from their Bella neighbours, but who had chosen to pass on the pounding technique to their daughters; pounding being regarded as the “true Songhay technique”.<sup>25</sup> Also in Niger, potters descending from Tuareg families who have been engaged for several decades in a process of Hausaisation, have shifted fashioning techniques because of the social representations attached to them within the area. This shift is a result of a shared willingness to get rid of a possible technical stigma, and acquiring a powerful media for shaping/broadcasting a new identity through daily practice.<sup>26</sup>

Thus, fashioning is not based solely on specialised gestures. It also involves a series of representations linked to the individual’s idea of technical efficiency and the need to reinforce or manipulate identity in the course of daily practice.

### *Finishing*

This stage, carried out as a continuation of roughing out, consists of giving the just constituted hollow volume, its final geometric characteristics. To this end, potters perform scraping and smoothing operations, with the help of a series of tools, which allow them to gradually distort the wall of the vessel to the desired curvature by applying pressure. The neck is formed and elements such as handles are added at this point.

Once more, the skills involved are very specialised, and many artisans assert that these skills count among the most difficult to master. Shaping is one of the most demanding stages of the operating chain, and this is one of the stages where the artisan’s dexterity is best expressed (Cf. Plate 12.2).

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<sup>25</sup> Gosselain, “Mother Bella was not a Bella”

<sup>26</sup> see details in Gosselain, “Thoughts and adjustments in the potter’s backyard”

The very personal character of operating methods and formal modifications must also be stressed. On the one hand, individuals tend to prioritise methods of acting on material according to their own plan,<sup>27</sup> even when they work together or have been taught by the same people. On the other hand, minute variations in contour – the shape of the collar, lip, handle, or base – are likened to ‘signatures’, which can be recognised as readily by eye as by touch.

Another striking characteristic of the pre-forming stage is its permeability to innovation and outside influences. From simple widespread forms, artisans seem to be able to easily meet new requests (e.g., flowerpots, moneyboxes, stills, incense holders) or to modernise the aspect of their products.<sup>28</sup> This explains, notably, the current appearance of a new generation of flat-bottomed pots fitted with handles, faithful copies of the aluminium pans produced in urban environments. The realisation of such products may allow a few individuals to position themselves as experts and agents of modernity.

### *Decoration*

Wares are most often decorated at the end of the shaping process, while the clay is still malleable. The artisan proceeds by drawing, impressing, or applying the decoration by means of panoply of extremely diverse tools. However, decoration can also be realised at the end of the drying stage, by application of mineral paint or slip, and even at the end of the firing stage.

Although the movements used in the elaboration of decorations often have a specialised character, they seem easier to execute than those that characterise the throwing and shaping stages. Similarly, while specialised tools (combs, roulettes, paintbrushes) exist at this level, the artisan can salvage any object capable of producing a trace on clay: fruits, seeds, shells, knives, bicycle spokes, springs, hair curlers, etc.

Regardless of the techniques, tools and materials used, a striking feature of decoration is the casual way potters talk about it. Where one would expect accounts about the semiological richness of designs and the multiple social functions of decoration, one especially hears that decoration is a matter of “simple embellishment”, “like a hairstyle or clothes”, the main function of which is to “attract the customer’s

<sup>27</sup> Gosselain, *Poteries du Cameroun méridional*, p. 113, 115

<sup>28</sup> N. Argenti, “Is this how I looked when I first got here? Pottery and practice in the Cameroon Grassfields”, *British Museum Occasional Paper* 132 (London: 1999)

eye.” In some cases, even the esthetic function of decoration is questioned, as when potters explain that roulette impressions is simply a matter of modifying wall texture to prevent wares from being slippery.<sup>29</sup> Added to this lack of interest in the symbolic function of decorations is a frequent incapacity to provide the names of decorative designs and great confusion when it comes to saying what the designs represent. From Mali to Cameroon, for example, a design such as a dot topped by an arc-shaped line is interpreted in turn as “the mouth of the ware,” “the eye of the spirits,” “the eye that sees witches,” “the symbol of Islam,” or “just a drawing”. Decoration may of course have a religious function, but such function is neither very salient nor very explicit.

This does not mean that artisans work with no references or precise rules. On the one hand, pottery decoration is generally only one realisation among others in a much broader decorative system. For example, the existence of numerous parallels has been found between vessel decoration and tattooing or scarification,<sup>30</sup> and parallels also exist with architecture, certain technical devices such as cast iron ovens, or other containers (baskets, gourds, aluminium pots).<sup>31</sup> On the other hand, while decoration is obviously very susceptible to innovation (e.g. the current generalised use of letters of the alphabet in the painted decorations of West Africa), change particularly affects the *components* of decorations rather than their *organisation* or ‘grammars’. Some think that it would be at this second level that the symbolic function of decoration comes into play and that collective identities would express themselves.<sup>32</sup> Conversely, and as is the case for modifications made

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<sup>29</sup> Y. Bredwa-Mensah, “The production and use patterns of Ga pottery in the Lower Densu Valley, Western Accra Plains, Ghana”, *Papers from the Institute of Archaeology* VII (1996), F. Gaud, *Les Mandja* (Bruxelles: 1911), G. Manessy, “Tâches quotidiennes et travaux saisonniers en pays bwa”, *Publications de la Section de Langue et Littérature* 5, Université de Dakar (Dakar: 1960), B. Priddy, “Some modern Ghanaian pottery,” in A. Fagg, ed., *Papers Presented to the 4<sup>th</sup> Meeting of West African Archaeology*, Federal Department of Antiquities (Jos: 1971)

<sup>30</sup> J. Armstrong, G. Whitelaw and D. Reusch, “Pots that talk, *izinkamba ezikhulumayo*”, *Southern African humanities* XX (2008), N. Barley, *Smashing Pots. Feats of Clay from Africa*, The British Museum Press (London: 1994), D. P. Collett, “Metaphors and representations associated with precolonial iron smelting in Eastern and Southern Africa”, in T. Shaw, P. Sinclair, B. Andah and A. Okpoko eds., *The Archaeology of Africa. Food, Metals and Towns* (London: 1993), N. David, J. Sterner and G. Kodzo, “Why pots are decorated”, *Current Anthropology* XXIX 3 (1988), U. Ritz, “Niemand zerbricht einen Wassertopf beim ersten Stolpern: zur Analogie von Topf und Mensch bei den Asante (Ghana)”, *Paideuma* XXXV (1989)

<sup>31</sup> e.g. K. D. Fowler, “Zulu pottery production in the Lower Thukela Basin, KwaZulu-Natal, South Africa”, *Southern African Humanities* XX (2008), F. Jolles, “The origins of the twentieth-century Zulu beer vessel styles”, *Southern African Humanities* XVII (2005), P.-L. Van Berg, *Grammaire des styles céramiques du Rubané d’Alsace*, Monographies d’archéologie alsacienne 2 (Strasbourg: 1994)

<sup>32</sup> e.g., David, Sterner and Kodzo, “Why pots are decorated”, Fowler, “Zulu pottery production in the Lower Thukela Basin”

to the shape of the vessels, micro-variations in design choice or execution method would constitute personal, sometimes deliberate, signatures.<sup>33</sup>

Thus, we see once again that in a context where the possibilities are theoretically very broad and where the artisans themselves insist on individual freedom, numerous filters ‘channel’ choices during the elaboration of decorations: inclusion in a broader esthetic system, the existence of organisational codes or ‘grammars’, the relationship to thought systems, and the need for concretising certain facets of identity.

### *Firing*

During firing the artisans use diverse structures, ranging from the simple fireplace to the kiln, which they fuel with almost anything that will burn. They fire from one to several hundred wares at a time, organising the operation so that firing can go on for hours or, on the contrary, be suddenly interrupted after ten minutes or so.<sup>34</sup>

Measurements performed in the field show that this variety of processes results, paradoxically, in considerable homogeneity of firing conditions. Whether a question of an increase in temperature, temperatures reached, or the duration of exposure at temperature thresholds, each variation makes it possible to achieve the same global results.<sup>35</sup> Nevertheless, this fact does not prevent artisans from having clear-cut and divergent opinions about how to operate: certain fuels burn better than others, making it possible to obtain higher temperatures; certain devices make it possible to limit accidents or to obtain better firing conditions, etc. The only point on which most of the individuals agree is about how to judge the degree of ware firing. Indeed, whatever the technique or the raw materials used, firing can be interrupted when the wall of a ware becomes incandescent.<sup>36</sup>

As regards relationships to other activities, the firing stage seems less rich than the clay preparation stage and we notice certain similarities to cooking tech-

<sup>33</sup> e.g., J. Brown, “Potting in Ukambani: method and tradition”, *Kenya Past and Present* I, 2 (1972), E. D. Earthy, *Valenge Women. The Social and Economic Life of the Valenge Women of Portuguese East Africa* (London: 1933), M. Thiam, *La céramique au Sénégal: Archéologie et Histoire* (Université de Paris I: 1991)

<sup>34</sup> Drost, *Töpferei in Afrika*, Gosselain, *Poteries du Cameroun méridional*, pp. 145–51, Livingstone Smith, “*Chaînes opératoires de la poterie*”, Livingstone Smith, “Bonfire 2. The Return of Pottery Firing Temperatures”, *Journal of Archaeological Science* XXVIII/9 (2001)

<sup>35</sup> Livingstone Smith, “Bonfire 2. The Return of Pottery Firing Temperatures”

<sup>36</sup> This modification occurs when the clay has reached an actual temperature of 500–700°C, which constitutes a firing threshold that is more than sufficient for the artisans’ materials and for the purposes for which the artisans destine their products.

niques, especially regarding fuel and device selection.<sup>37</sup> However, an activity such as metallurgy, while a pyrotechnology, maintains no link with pottery-making, even in societies where blacksmiths and female potters belong to the same endogamous sub-group. The fact that these two activities are practiced by different actors – or, more precisely, by different sexes – seems to present an obstacle to transfers. At the same time, firing is surrounded by a series of prescriptions and prohibitions, but these are less numerous than at other levels of the operating chain and do not seem to have much influence on the artisan's technical behaviour. They mainly concern ensuring that people of bad intentions or those in impure states do not jeopardise the operation solely by their presence.

This worry stems from the generally public and collective character of the firing stage. In most regions of Africa, artisans usually associate with relatives, friends, or neighbours for firing their wares (Cf. Plate 12.3). These associations have several advantages: they not only allow artisans to invest less effort in gathering fuel, organising wares, or sharing in firing surveillance, but they also allow them to conform to a restrictive firing calendar (weekly markets, for example) when placements reserved for the operation are few in number. In return, firing parties contribute to creating and/or reinforcing micro social networks within potting communities, which may materialise in technical, formal, or ornamental variations.<sup>38</sup>

### *Post firing*

The last stage of the manufacturing process consists of treating the wares by applying various materials, mixtures, or by smearing or smoking the vessels.<sup>39</sup> The main functions of this operation would be to 'consolidate,' 'waterproof,' and 'embellish' the pieces. To realise these objectives, the principal skills required are the ability to identify appropriate types of plants, select the usable parts of the plant (for example, particular sections of the bark or roots, leaves, fruits at various degrees of maturity), prepare and apply them. Some of these skills are quite specialised, even though they are not the prerogative of pottery makers, as we will see below. Other skills are more widespread, particularly those concerning preparation recipes.

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<sup>37</sup> Gosselain, *Poteries du Cameroun méridional*, p.165

<sup>38</sup> Corniquet, "Cadres de pratiques et circulation des connaissances chez les potières de l'Arewa (Niger)"

<sup>39</sup> Gosselain, *Poteries du Cameroun méridional*, pp. 184–93

As with clay preparation or firing techniques, artisans generally have a very clear-cut opinion about the ingredients that must be selected and how they must be prepared. These opinions are extremely divergent: South of the Sahara, about fifty plants are currently used for making organic coatings, but few artisans know about more than one and each artisan believes there is no alternative to his or her choice. Similarly, those who prepare their coating as a decoction or maceration, and apply it hot or cold consider it inconceivable to proceed otherwise. Actually, all choices are perfectly sound from both a technical and aesthetic point of view. An analysis of the various fruits and barks used in certain zones of Sub-Saharan Africa indeed reveals the presence of one same category of tannins, the procyanidins, which have excellent colouring and waterproofing properties.<sup>40</sup> In addition, tests performed in the field show that the various solutions make it possible overall to realise the same objectives, even if we undoubtedly must relativise the ‘functional’ importance of post firing treatments.<sup>41</sup>

In general, the most striking aspect of this stage of the manufacturing process pertains to the existence of connections with other spheres of activity. Thus, most of the plant types that artisans select are used for food, leather dyes, fabrics or baskets, wall and pavement waterproofing and, above all, pharmacopoeia.<sup>42</sup> This last domain is particularly interesting as the illnesses and injuries treated with the help of the same preparations that potters use are especially characterised by discharges: various wounds, diarrhea, gonorrhoea, hemorrhage, menorrhagia, ulcers, etc. Use of these preparations also appears during birth and circumcision rites. What we again find at work is simply the materialisation of an extremely widespread association between pottery-making and human beings.<sup>43</sup> And, from a symbolic point of view, since treating a pot or treating the body is a related activity, a strong channelling of behaviours can occur at the levels of ingredient selection and preparation.

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<sup>40</sup> B. Diallo, M. Vanhaelen and O. P. Gosselain, “Plant constituents involved in coating practices among traditional African potters” *Experientia* LI (1992)

<sup>41</sup> Gosselain, *Poteries du Cameroun méridional*, p. 183

<sup>42</sup> Gosselain “Poterie, société et histoire chez les Koma Ndera du Cameroun”, *Cahiers d’Etudes Africaines* XXXIX/1 (1999), Gosselain, *Poteries du Cameroun méridional*, pp. 197–8, pp. 210–1

<sup>43</sup> J. Armstrong, G. Whitelaw and D. Reusch, “Pots that talk, *izinkamba ezikhulumayo*”, *Southern African Humanities* XX (2008), Barley, *Smashing Pots*, David, Sterner and Kodzo, “Why pots are decorated”, Gosselain, “Poterie, société et histoire chez les Koma Ndera du Cameroun”, Gosselain, *Poteries du Cameroun méridional*, pp. 205–8

### Developing and practicing skills

It is often emphasised that pottery-making is mainly a family and feminine activity in Sub-Saharan Africa.<sup>44</sup> This means that knowledge is handed down among relatives and very often within the nuclear family. Overall, the proportion of people undergoing apprenticeship outside the sphere of the family is minor, but it sometimes turns out to be high among certain populations. This is due to modifications of the socio-economic context in which the activity is practiced,<sup>45</sup> or to particular social practices.<sup>46</sup> Among the Luo of Kenya, women generally get married outside of their own localities and are subjected to a re-socialisation process under their mother-in-law's supervision. If the mother-in-law is a potter, the newly wed will learn the trade at her mother-in-law's side to show that she is ready to integrate into her new family. Even if she has the opportunity to do so, she does not seek to learn pottery-making techniques before her marriage because she knows that she will subsequently have to modify her habits.<sup>47</sup>

Another characteristic of pottery-making is its accessibility to everyone in most Sub-Saharan populations. In theory, those who so desire may learn and practice the trade, as long as they find someone who agrees to pass on his or her knowledge to them. If in practice the activity remains in the hands of certain families or certain groups of individuals, it thus takes place outside of any institutional monopoly.

This is different for a series of societies from West Africa, the Lake Chad Basin, the Darfur area, and the Horn of Africa. In this case, pottery-making remains the prerogative of a small number of specialists, who practice endogamy and benefit from a particular social and symbolic status.<sup>48</sup> This type of restriction does not necessarily have an impact on the identity of the people among whom transmission

<sup>44</sup> Drost, *Töpferi in Afrika*, Gosselain, *Poteries du Cameroun méridional*, pp. 21–31, M. Vincentelli, *Women Potters. Transforming Traditions* (New Brunswick: 2003)

<sup>45</sup> e.g. Gosselain "Poterie, société et histoire chez les Koma Ndera du Cameroun"

<sup>46</sup> e.g. M. Delneuf, "Un champ particulier de l'expérimentation en céramique: les ateliers de poterie traditionnelle du Nord-Cameroun", in Juan-les-Pins eds., *APDCA 25, Ans d'études technologiques en préhistoire* (1991), p.72

<sup>47</sup> I. Herbich, "Learning patterns, potter interaction and ceramic style among the Luo of Kenya", *The African Archaeological Review* V (1987)

<sup>48</sup> Barley, *Smashing Pots*, Drost, *Töpferi in Afrika*, B. E. Frank, *Mande Potters and Leatherworkers. Art and Heritage in West Africa* (Washington, D.C.: 1998), A. Gally, E. Huysecom and A. Mayor, "Peuples et céramiques du Delta intérieur du Niger (Mali): un bilan de cinq années de mission (1988–1993)", *Terra Archaeologica* 3 (1998), Lyons and Freeman, "I'm not evil: Materialising identities of marginalised potters in Tigray Region, Ethiopia", J. Sterner and N. David, "Action on matter: the history of the uniquely African tamper and concave anvil forming-pot technique", *Journal of African Archaeology* 1 (1) (2003)



takes place. As in other societies, transmission generally concerns relatives, and the acquisition of specialised skills is not even mandatory: being born in a potter's family suffices for being ascribed a 'potter' status, even if one never practiced or mastered the craft. The important aspect of this situation is that the number of 'specialists' is sometimes very low in certain localities or in certain regions, which, due to strict endogamy rules, can force an artisan to travel long distances to find an appropriate spouse. Such a phenomenon obviously has an effect on the spatial dispersion of traditions.<sup>49</sup>

Apprenticeship most often takes place during childhood, between approximately six to twelve years old. Those who acquire their knowledge outside the family sphere generally do so as adults, but field observations indicate that the belated character of the apprenticeship has no fundamental influence on the mastery of knowledge and expertise. Artisans usually stress the quality of the relationship between the person passing on knowledge and the apprentice: they must get along with each other to ensure a successful apprenticeship. If this is not the case with the apprentice's mother, father, or close relative, then he or she will seek out other people. In areas where pottery is increasingly produced for tourists and urban consumers, one witnesses a transformation of apprenticeship practices. This is notably the case in KwaZulu-Natal (South Africa), where a division in duties arose in the late 1990s at potting homesteads that meet local and external demands: "Rather than a single potter preparing clay, fashioning and decorating pottery herself, the decoration stage has been turned over to younger, apprentice potters. Senior potters feel that this has improved their production rate because they do not have to decorate pottery."<sup>50</sup>

### *Knowledge acquisition*

It is difficult to obtain information about the actual way in which artisans acquire their knowledge and expertise. Some people explain that their skills came to them "just like that," especially during a dream, as two Luba potters from Kinkondja in

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<sup>49</sup> R. Haaland, "Ethnographical observations of pottery-making in Darfur, Western Sudan. With some reflections on archaeological interpretation", in K. Kristiansen and C. Poludan-Müller, eds., *New Directions in Scandinavian Archaeology* (Copenhagen: 1978), S. MacEachern, "Scale, style, and cultural variation: Technological traditions in the Northern Mandara Mountains", in M. Stark, ed., *The Archaeology of Social Boundaries* (Washington D.C.: 1998)

<sup>50</sup> Fowler, "Zulu pottery production in the Lower Thukela Basin", p. 501

the Democratic Republic of the Congo explained to Petit.<sup>51</sup> Many others say that “these things can’t be explained,” that a person “learns little by little, by watching others at work and by trying in his or her own turn.” However, knowledge transmission definitely occurs but according to very different modalities and in very different contexts, which explains why few people succeed in understanding it entirely.

As revealed by closer observations, the process of learning must be broken down into at least two phases. During the first phase, the apprentice assists during certain stages of the manufacturing process: clay extraction, clay processing, fuel collection, setting the firing structure, removing and treating the vessels after firing. If need be, an apprentice may be given responsibility for operations considered tiring but uncomplicated – for example, extracting clay or crushing shards for grog. This participation is important, because it allows the apprentice to become familiar with materials, collection sites, recipes, and the physical characteristics of clay (Cf. Plate 12.4). S/he also becomes acquainted with the symbolic and social prescriptions linked to certain stages of pottery-making. Apprentices are thus initially trained to conform to local norms, which may have important consequences at a later stage of their life if they relocate in a new community. Few people, however, consider this participatory phase as a ‘true apprenticeship’, since it is not explicitly directed towards the acquisition of knowledge. Also, there is no particular order to what apprentices learn during the participatory phase. As illustrated by Lave and Wenger: “... production activity-segments must be learned in different sequences than those in which a production process commonly unfolds, if peripheral, less intense, less complex, less vital tasks are learned before more central aspects of practice.”<sup>52</sup>

Clearly, the ‘more central aspects’ of pottery making pertain to the shaping operations, usually subdivided into the ‘roughing out’ and ‘preforming’ stages. Here, the acquisition of relevant skills leads the apprentice to enter into a more formal phase – which many consider as the true *moment* of apprenticeship. Field observations and potters’ testimonies indicate that the change first becomes evident in the protagonist’s attitude: up until then, the apprentice had a mainly playful relationship with shaping pottery; (s)he played with clay, but did not really seek

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<sup>51</sup> P. Petit, “Ngoy, mère et fille, potières luba de Lenge (Katanga, Congo)”, *Anthropos* 93 (1998)

<sup>52</sup> J. Lave and E. Wenger, *Situated Learning. Legitimate Peripheral Participation*, (Cambridge: 1991)

to make a vessel. If (s)he is sufficiently motivated<sup>53</sup> and ‘gifted’ (notions that crop up constantly in interviews), the teacher re-directs the game towards the acquisition of expertise and adopts a much more active role with her/his pupil. There is clearly a shift of status at this stage, which some potters signify by submitting the apprentice to an initiation<sup>54</sup> or giving her/him an emblematic tool. Among the Nama blacksmiths of Dia (Mali), for example, young female potters receive a terracotta tournette, made by the person who takes them into apprenticeship. They will keep it for life. Similarly, female Songhay, Zarma and Bella potters in Niger, who use the pounding technique for shaping the vessels, often receive a small terracotta hammer when they begin their apprenticeship. They will later inherit their mothers’ hammers – treasured objects that potters may hand down from one generation to the next.

The apprentice first endeavors to rough out small wares, miniature models of those her/his instructor makes, or wares for particular purposes, such as saucepans, piggybanks and incense holders. These first attempts rarely meet with success: the walls collapse, the pressure exerted is too weak or too strong, etc. To help the apprentice overcome these difficulties, the instructor must go beyond the role of a simple model: s/he works alongside the apprentice, correcting errors and wrong gestures and, quite often, holding the apprentice’s hands so that s/he can physically sense the correct movements and hand positions. This is why those questioned stress the importance at this level of the relationship between the instructor and the apprentice: for knowledge to be passed on correctly there must be respect, patience and, from the point of view of the one passing on the knowledge, a mixture of severity and benevolence. Miniature vessels made by apprentices may also be sold on the market in order to encourage them. They are often used by children for mimicking food preparation and consumption.

At the end of this second phase, which can last from a few months to a couple of years, the apprentice has assimilated all the movements and postures

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<sup>53</sup> The notion of ‘motivation’ covers a great number of factors as demonstrated by H. Wallaert, see H. Wallaert, “Manual laterality apprenticeship as the first learning rule prescribed to potters: A case study in handmade pottery from Northern Cameroon”, *Urgeschichtliche Materialhefte* XIV (1999), Wallaert, *Mains agiles, mains d’argile. Apprentissage de la poterie au Nord-Cameroun: modes d’acquisition of comportements techniques* (Brussels: 2000)

<sup>54</sup> e.g. A. Hauenstein, “La poterie chez les Ovimbundu (Angola)”, *Acta Tropica* XXI/1 (1964), P. Knops, “L’artisan Senufo dans son cadre Ouest-Africain”, *Bulletin de la Société Royale Belge d’Anthropologie et de Préhistoire* LXX (1959), A. K. Quarcoo and M. Johnson, “Shai Pots”, *Baessler-Archiv* XVI (1968)

linked to shaping, but it is only very progressively that s/he goes on to make bigger wares. Most of the people questioned explain that what happens afterwards is a 'matter of practice.' They especially emphasise the stability of their technical behavior: "I do as my mother/father did", they say, no matter where they came to live after learning the craft or what was their life trajectory. Some even stress that change should not occur at all, as any modification in the manufacturing process may jeopardise its outcome.

### *Practicing the craft*

Regardless of when they acquired their knowledge, a good number of artisans continue practicing their activity in the same social and geographic environment. The youngest remain under the authority of their elders. Older artisans can maintain more loose relationships with their instructor but they practice their activity in conditions similar to those that prevailed during their apprenticeship.

Yet most apprentices leave to set themselves up in other neighborhoods or other locations – some nearby, others more distant – due to marriage, divorce, and death or economic reasons. Some artisans also set themselves up seasonally in regions or villages where pottery is not produced.<sup>55</sup> Whether permanent or temporary, these moves have several implications from the point of view of the dynamics of potter cultures.<sup>56</sup>

First, artisans must locate new clay sources and identify zones where they can collect the fuel and the ingredients for preparing post firing paints or coatings. Some of these materials are easily found; others require more arduous searches. This is particularly true if their usage is specific to pottery-making and when the artisan has no occasion to mix with other specialists. In addition, certain materials

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<sup>55</sup> D. Simmonds, "Pottery in Nigeria", in J. Picton, ed., *Earthenware in Asia and Africa* (London: 1984), Gelbert, *Traditions céramiques et emprunts techniques*, Gosselain, "Poterie, société et histoire chez les Koma Ndera du Cameroun", *Cahiers d'Etudes Africaines* XXXIX/1 (1999), N. Tobert, *The Ethno-archaeology of the Zaghawa of Darfur (Sudan)*, BAR International Series 445 (Oxford: 1988)

<sup>56</sup> for a few case studies, see N. David and H. Hennig, "The Ethnography of pottery: A Fulani case seen in archaeological perspective", *Anthropology* XXI (1972), Frank, *Mande Potters and Leatherworkers*, Gallay, "Sociétés englobées et traditions céramiques: les cas du Pays dogon (Mali) depuis le 13<sup>e</sup> siècle", Gosselain, "Materializing identities", Gosselain, *Poteries du Cameroun méridional*, Huysecom, "Les percuteurs d'argile: des outils de potières africaines utilisés de la préhistoire à nos jours", *Bulletin du Centre Genevois d'Anthropologie* III (1992), B. Pinçon, "Pour une approche dynamique des productions: l'exemple des céramiques du Massif du Chaillu (Congo, Gabon) de 1850 à 1910", *Canadian Journal of African Studies* XXXI/1 (1997)

can simply be unavailable in a region, as happens for certain plant species used in post firing treatments.<sup>57</sup>

Next, the artisan might need to target a new clientele and satisfy other requests and tastes. One immediately thinks of decoration in this respect, but artisans can also be confronted with particular requirements as regards the form, colour, and even the physical properties of wares.<sup>58</sup> As emphasised in the previous section, certain stages of the manufacturing process are very social. They involve the participation of a large number of individuals, including artisans from the vicinity. On these occasions, the new arrival can be confronted with other ways of doing things and, above all, to other, clear-cut opinions as regards raw material quality, preparation methods, and the directions that must be respected to ensure the success of the production process. These opinions sometimes express certain forms of competition or social stigmatisation. Some artisans, it is said, produce lower quality wares because they use one type of clay rather than another, because they mix straw with the clay rather than grog, or because they use palm fronds or millet stalks as fuel rather than wood.<sup>59</sup> In several villages along the River Niger, north of Niamey (Niger), potters have recently stopped sorting grog when preparing the clay used respectively for shaping the body and the neck of vessels. They changed their behavior after having been told to do so by potters originating from the most reputed centre in the area, who they met at local weekly markets.

This example illustrates the influence of markets – and of other socialisation centers in general – on the dynamics of pottery cultures.<sup>60</sup> Often grouped in the same area of the market, artisans have the opportunity to examine productions realised elsewhere and to take measure of the changing tastes of the clientele. On several occasions, I had the opportunity to work with female potters who would copy the decorative designs seen in the market, either because they found them ‘pretty’ or because they thought these designs would better attract attention of clients. One

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<sup>57</sup> Gosselain, *Poteries du Cameroun méridional*, pp. 194–5

<sup>58</sup> e.g., Sall, “Traditions céramiques, identités et peuplement en Sénégalie”, M. Vander Linden, “Social dynamics and pottery distribution in the Faro Department, Northern Cameroon”, *The African Archaeological Review* XVIII/3 (2001)

<sup>59</sup> Gosselain, “Thoughts and adjustments in the potter’s backyard”, Gosselain and Livingstone Smith, “The source. Clay selection and processing practices in Sub-Saharan Africa”, in A. Livingstone Smith, D. Bosquet and R. Martineau eds., *Pottery Manufacturing Processes: Reconstruction and Interpretation* (Oxford: 2005)

<sup>60</sup> see examples in Corniquet, “Cadres de pratiques et circulation des connaissances chez les potières de l’Arewa (Niger)”, Fowler, “Zulu pottery production in the Lower Thukela, Basin”, Lyons and Freeman, “I’m not evil: Materialising identities of marginalised potters in Tigray Region, Ethiopia”, *Azania: Archaeologica Research in Africa* 44/1 (2009)

interesting detail is that some of these potters had no idea as to the technique used for realising the original designs (impressions with a wooden carded roulette, for example), and they would copy them as best they could with their own tools.

A third implication for incoming potters is that they are led to interact with a new group of colleagues when settling in a different community. This is a crucial element that brings us back to the social dimension of learning and to the meaning attached to potting practices. We have seen that potters are initially socialised into the craft through participating in the work of confirmed artisans. Starting with less complex and less vital tasks, they are progressively drawn to more central aspects of the craft, through a process of “legitimate peripheral participation”. An essential aspect of this participatory process is that skill and knowledge acquisition combines with the development of an identity of ‘member’, as the apprentice increases her/his participation in the community and progressively reaches a more central position. In this context, the shared repertoire of practices acts together as a binding element, that reinforces the link between members of the community and their sense of group identity, and as a vehicle that helps newcomers negotiate their insertion within the community.<sup>61</sup> What matters here is that such negotiation does not stop at the outset of the learning process. Seen from the perspective of individual actors, the learning process never ends, insofar as the “social world of activity”<sup>62</sup> is continuously evolving. Potters may join new communities, as stated above, but their own community may also be modified due to the insertion of new participants, changing relationships between older participants as they shift status through their life trajectory, or new connexions with other potting communities.

While change mechanisms created by peer pressure, worry about social conformism and economic considerations are beginning to be well documented in the field, these are not the only motors for the dynamics of ceramic traditions. Apprenticeship and borrowing processes do not escape certain types of manipulations, from the moment the transfer takes place. Certain transcultural comparisons reveal, for example, that degrees in behaviour reproduction exist, even for stages as critical as

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<sup>61</sup> see especially B. J. Bowser and J. Q. Patton, “Learning and transmission of pottery style. Women’s life histories and communities of practice in the Ecuadorian Amazon”, in M. Stark, B. Bowser and L. Horne, eds., *Cultural Transmission and Material Culture: Breaking Down Boundaries* (Tucson: 2008), Corniquet, “Cadres de pratiques et circulation des connaissances chez les potières de l’Arewa (Niger)”

<sup>62</sup> J. Lave, “The practice of learning” in S. Chaiklin and J. Lave, eds., *Understanding Practice. Perspectives on Activity and Context* (Cambridge: 1996)

the shaping stage. Some social groups seem to show greater tolerance for innovation, a phenomenon that can have enormous influence on the spatial and temporal evolution of ceramic traditions.<sup>63</sup> Unfortunately, this domain remains little explored.

In the same way, borrowing processes do not always lead to a duplication of behaviours and representations. Communities that did not practise the activity but that have ended up doing so upon contact with other populations may borrow certain elements, but modify others to ensure the social and symbolic compatibility of the activity. As an example, Koma Ndera women of Northern Cameroon have evidently started producing pottery only two or three generations earlier. The techniques used at the various levels of the manufacturing process are similar to those used by neighbouring populations, from whom the techniques had obviously been borrowed. Two aspects nevertheless diverge: the prohibitions linked to certain production stages and the ingredients used for preparing the organic coating applied at the end of firing. In the second case, it is striking to see that the new ingredients are used locally for medicinal and ritual purposes, and that the same functions are filled, among neighbouring populations, by the 'rejected' ingredients. Even if no one could confirm it, there seems to have been a type of adjustment, making it possible to ensure compatibility of technical practices and symbolic representations.<sup>64</sup> I hasten to emphasise that this 'compatibility search' is not at all evident. In many cases, one gets the impression that elements of different origin have been put together, without any real logic at least from a symbolic point of view.<sup>65</sup>

Finally, it seems that artisans may also modify their behaviour or oppose change for psychological or economic reasons. For example, using certain techniques, tools, or designs allows artisans to mark their affinity with members of their family or community or, on the contrary, to differentiate themselves. DeBoer and Bowser highlighted these phenomena in a series of Amazon populations.<sup>66</sup> For

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<sup>63</sup> Wallaert, "Manual laterality apprenticeship as the first learning rule prescribed to potters", Wallaert, *Mains agiles, mains d'argile*

<sup>64</sup> Gosselain "Poterie, société et histoire chez les Koma Ndera du Cameroun"

<sup>65</sup> Gosselain, *Poteries du Cameroun méridional*, p. 211

<sup>66</sup> W. R. DeBoer, "Interaction, imitation, and communication as expressed in style: The Ucayali experience", in M. W. Conkey and C. A. Hastorf, eds., *The Uses of Style in Archaeology* (Cambridge: 1990), B. Bowser, "Transactional politics and the local and regional exchange of pottery resources in the Ecuadorian Amazon", in A. Livingstone Smith, R. Martineau and D. Bosquet, eds., *Pottery Manufacturing Process: Reconstruction and Interpretation*, BAR Series (Oxford: in press), B. Bowser, and J. Q. Patton, "Learning and transmission of pottery style"

Africa, such tuning of the technical behaviour has notably been documented by Herchich in Luo communities (Kenya) and by Balfet in the Maghreb.<sup>67</sup>

Whatever the reasons, artisans would thus often modify their behaviour during their life existence and incorporate elements of diverse origin into the daily practice of the activity. Available data show that these changes mainly concern stages of the manufacturing process that are carried out publicly and collectively, that affect the visible characteristics of the finished product, and that do not involve (or rarely involve) specialised motor skills.<sup>68</sup> All in all, it seems much easier for an artisan to modify paste preparation recipes, use new materials, new designs, or new tools than to change the movements and postures that practice has anchored at an almost subconscious level. This undoubtedly explains the much greater inertia of elements such as shaping techniques and their frequent association with the most anchored facets of social identity.<sup>69</sup> However, some individuals may nevertheless change their shaping technique, and do so with apparent facility, for example, when they judge other techniques more efficient in terms of rapidity or in terms of the quality of finished products. As long as the question is to adopt 'simpler' techniques from the point of view of motor skills,<sup>70</sup> the problem of transfer does not really arise. But as soon as we see artisans endeavouring to master obviously more complex techniques, as I observed in Niger, the fluidity of technical behaviours can no longer be interpreted solely according to the intrinsic qualities of these behaviours.<sup>71</sup> Clearly, the *relationship* that individuals maintain with technical objects is a much more determining factor than technical *complexity* as regards the adoption of objects. As Kaufmann emphasises on the subject of domestic activities, "Nothing is difficult when activities have meaning," for meaning makes it possible to tip perception of a technical problem from impossible-to-resolve to resolvable.<sup>72</sup>

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<sup>67</sup> I. Herbich, "Learning patterns, potter interaction and ceramic style among the Luo of Kenya", *The African Archaeological Review* V (1987), H. Balfet, "Ethnographical observations in North Africa and archaeological interpretation: the pottery of the Maghreb", in F. Matson ed., *Ceramic and Man* (Chicago: 1965)

<sup>68</sup> Fowler, "Zulu pottery production in the Lower Thukela Basin", pp. 483–85; Gosselain, "Materializing identities", Gosselain, *Poteries du Cameroun méridional*, Livingstone Smith, "Processing clay for pottery", Sall, "Traditions céramiques, identités et peuplement en Sénégal", Sall, "Cultural contacts and technical heritage in Senegambia", in Livingstone Smith, Martineau and Bosquet, eds., *Pottery Manufacturing Process: Reconstruction and Interpretation*

<sup>69</sup> Gosselain, "Materializing identities, Gosselain, *Poteries du Cameroun méridional*

<sup>70</sup> Gelbert, *Traditions céramiques et emprunts techniques*

<sup>71</sup> Gosselain, "Mother Bella was not a Bella"

<sup>72</sup> Kaufmann, *Le cœur à l'ouvrage. Théorie de l'action ménagère* (Paris: 1997), p. 82



This element is fundamental. I suspect that beyond the multiple processes liable to induce behavioural modifications, the ease or difficulty with which such modifications are implemented is profoundly influenced by the individual's conception of the behaviour in question. Paste preparation recipes or firing management methods, for example, are elements that individuals learn 'just like that,' and do not discuss. There is no alternative. It is necessary to reproduce a particular procedure to ensure the success of the operations. Yet, this reproduction via an 'authority argument' could paradoxically weaken recipe perpetuation, because an artisan confronted with another, locally appropriate, 'authority argument' is more inclined to subscribe to it. Conversely, a behaviour acquired at the end of a strong relationship between two people, where the apprentice has the opportunity to sense the reason for technical movements physically, could more willingly be considered an *inheritage*, or at least an appropriate practice that must not be questioned. Rather than being due to the combined effect of motor habits and the spatial extension of matrimonial networks, as I previously emphasised,<sup>73</sup> the stability of fashioning techniques could thus result from a deliberate conservatism amongst the potters. How to shape a pot is not a trivial issue as it relates both to group affiliation and the psychological bonding of teacher and apprentice during the second phase of learning. Acting usually as a strong stabilising factor, this bonding also creates the conditions for sudden shifts in techniques such as when artisans are engaged in a redefinition of their identity.

### Conclusions

We have seen that 'pottery cultures' are made up of heterogeneous elements: movements, actions, recipes, raw materials and tools, but also representations as regards ways of doing things, ways of ensuring the success of operations, aesthetics, time management, personal investment, the identities of technical actors and consumers, and a wide range of social stakes. Each element, each action, is liable to generate reflexivity, which clearly shows that the technical domain is not a mute or socially disinvested part of culture. However, techniques do not fall solely within the world of ideas. They mobilise all the senses – touch, of course, but also smell, taste, hearing and vision – through the physical engagement with objects and material.

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<sup>73</sup> Gosselain, "Social and technical identity in a clay crystal ball", Gosselain, "Materializing identities"

Data collected in the field indicate that these ‘pottery cultures’ do not emerge haphazardly and are not constantly re-invented. They stem from a transmission process, like other elements of culture, but ‘transmission’ must be understood here as an ongoing process, intimately connected to the life trajectory of individual and the changing social relationships developed through practice.<sup>74</sup> What artisans ‘inherit’ when entering the activity is not a ‘closed box of knowledge’ that shall never be opened again, but more accurately a ‘tool box,’ whose content can be constantly – and sometimes profoundly – rearranged and modified, based on experiences subsequent to apprenticeship. A good part of the modifications result from interactions with new social actors. We have also seen that the setting up in another environment, wanting to position oneself vis-à-vis others, or fearing the judgment of those with whom one lives or to whom one’s products are destined can also have a significant impact in this respect.

All in all, ‘pottery cultures’ may be likened to heterogeneous aggregates, whose elements have neither the same origin nor the same historical depth, are in perpetual transformation, and evolve at different rates and according to different modalities. Yet, the fact that pottery cultures are situated practices – both socially and materially – also means that their evolution is neither chaotic nor dependent of the whim of people’s interactions or the mechanical diffusion of components. On the contrary, they often appear to be strongly channelled. Kaufman speaks in this respect of ‘control processes’ and ‘leeway restrictions,’<sup>75</sup> while emphasising the fact that such processes are essentially a matter of individual constructions. The reason is that an activity – in this case pottery-making – does not exist independently of other practices and value systems, as a technical actor does not work in isolation from other social actors. Over the past thirty years, numerous scholars have illustrated the way in which representations are mobilised during each technical action; representations which, from the actor’s point of view, are completely tangled with other types of knowledge.<sup>76</sup> Corresponding to what is usually called ‘world views,’ they allow artisans to classify, without too much difficulty, what it is appropriate to use, make, and produce. But alongside these ‘collective’ representations, there exist others – more personal and more diversified as to their origin. Such ‘reflexivity

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<sup>74</sup> see Lave, “The practice of learning”, J. Lave and E. Wenger, *Situated Learning. Legitimate Peripheral Participation* (Cambridge: 1991)

<sup>75</sup> Kaufmann, *Le cœur à l’ouvrage. Théorie de l’action ménagerie*, p. 37

<sup>76</sup> see Dobres, *Technology and Social Agency*, Lemonnier, *Elements for an Anthropology of Technology*

of institutional facts' makes it possible for individuals to situate themselves in comparison with others and, if the need arises, to modify their behaviour according to a changing context. Similarly, individual artisans forge their own representations while practicing the craft. We have seen, for example, that the way in which the protagonists of learning engage during the second phase of skill acquisition, when training to shape vessels, leads them to view shaping technique as both an 'inheritage' and an index of the most rooted facets of their identity. But there is more. Physical engagement with the materials also allows individuals to experience sensations and emotions.<sup>77</sup> These experiences give rise to new conceptions that not only have to do with the way to appreciate and classify material, but also with connecting different domains, by means of movements and postures. We are here at the heart of technical practice, in what is increasingly perceived as an extraordinary 'meaning factory.'<sup>78</sup> While usually thought of and analyzed as 'collective,' what we are faced with is a phenomenon that opens the way to an individuals' daily constructions. Clearly, a pottery culture is not something that is 'caught', as one would catch the flu or a silly tune. It is thought out, built, appropriated, directed and redirected activities which all stem from *practice* and involve a total symbiosis between the body and the mind, as Marcel Mauss so remarkably understood.

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<sup>77</sup> see M. Naji, "Gender and materiality in-the-making: the manufacture of Sirwan femininities through weaving in Southern Morocco, *Journal of Material Culture* XIV/1 (2009), S. Tisseron, *Petites mythologies d'aujourd'hui* (Paris: 2000)

<sup>78</sup> Dobres, *Technology and Social Agency*, Kaufmann, *Le cœur à l'ouvrage*, A. Jeanjean, *Basses Oeuvres: une ethnologie du travail dans les égouts*, Editions du CTHS (Paris: 2006), J-P. Warnier, "A Praxeological Approach to Subjectification in a Material World", *Journal of Material Culture* VI/1 (2001)

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Plate 12.1: Clay extraction in a dry pond (Ayingam, Southwestern Niger). Places such as dry ponds or river beds are typically exploited throughout the Sahel for gardening, brick manufacture and pottery-making. © O. Gosselain



Plate 12.2: Smoothing and everting the neck of a vessel with a piece of calabash. At this stage of the manufacturing process, variations in tools and gestures generate minute morphological variations that are often likened to 'signatures'. © O. Gosselain



Plate 12.3: Retrieving water jars after a communal firing in Bagari, Southeastern Niger. In many parts of Africa, potters fire their vessels together. Beside alleviating the work through a division of labour, such association favours social and technical exchanges within potting communities. © O. Gosselain



Plate 12.4: An apprentice, her mother and two young children in a workshop (Attari, Southeastern Niger). Learning is a long and complex process during which apprentices progress from a peripheral participation to a more central one, where what is at stake is both the development of technical skill and social identity. © O. Gosselain