

CHAPTER 6

From present to past

INTRODUCTION

Olivier P. Gosselain¹

This chapter focusses on historical approaches that start from the present rather than the past. The reversal may seem incongruous in a field manual in archeology, but it certainly has its place here. After all, the present is never more than the past in the making. More fundamentally, this past which has forged our ‘present’ continues to live, in the form of survivals, of more or less preserved remains, or even of ‘phantoms’ that come back to haunt the living (Gosselain & Smolderen 2016). These disparate elements can enrich our understanding of the past in at least two ways: (1) as an historical document, which should be interpreted with the same rigour as archaeological remains; and (2) as analogical referents, which help us to refine archaeological reasoning (**Lyons; Mayor**).

If the African continent is richer in written sources than is sometimes believed, these documents are unevenly distributed and almost exclusively concern the second millennium AD. To access the African past, we must leave the well-marked frameworks of the historical method, using every means available in blending disciplines, exploiting a wide range of sources, and developing or importing new approaches. It is in Africa, for example, that oral traditions have gained scientific legitimacy (Vansina 1962; Schoenbrun). It is in Africa that a fruitful dialogue has developed between linguists and archaeologists around the Bantu question (**Bostoen**). And it is particularly in Africa that important research programs combining archeology, ethnography and history have emerged, whether under the banner of ‘ethnoarchaeology’ (**Lyons; Mayor**) or of the ‘direct historical approach’ (**Stahl; Mezop**).

This intellectual ferment, which marked the second half of the 20th century and continues today with the entry of genetics on the scene (**MacEachern**), is based both on an exploitation of data collected from living people and the correlation of these data with archaeological information – which is the principal category of information *derived* from ancient contexts. A fairly comprehensive overview of the types of data to be exploited for this purpose can be found in this chapter: traditions and oral histories (Schoenbrun); languages and specialized lexicons (**Bostoen; Riquier**); the genome (MacEachern); techniques of production – especially pottery – (**Gosselain; Mayor; Mezop**); architecture (**Brunfaut & Pinet; Stahl**); and art (**Polet**). We should ideally add music and the study of musical instruments, social structure and rituals, and domestic plants and animals, all of which also constitute entry points into the past (e.g. Charry 2000; Masquelier 2001; Seignobos 1980; Tamari 1991).

Despite the diversity of the disciplines and subjects covered, the different contributions overlap in many respects. All particularly stress the importance of a rigorous methodology in the collection and description of the data, as in their interpretation and their juxtaposition to archaeological facts. This methodological rigour includes several imperatives: to avoid the dangers involved in using concepts like ‘ethnicity’ or ‘autochthonous’, which too often prevent us from appreciating the porous, dynamic and sometimes improvised character of borders and social relations (Polet; Schoenbrun; Stahl); to examine the degree of similarity between observed facts – as is underlined by Lyons, Polet and Stahl, a formal resemblance does not in any way imply a functional or semiotic similarity; and to favour tools that have proven themselves and are built on solid foundations, even if they are old or have been developed in very different contexts, over *ad hoc* bricolage (**Bostoen; Brunfaut & Pinet; Gosselain; Mezop; Polet; Riquier; Stahl**). Concerning linkages with the archaeological data, readers should complete this set of different contributions with the essential article by Jan Vansina (1985): ‘Historians, are archaeologists your siblings?’

Another commonality between the different contributions to this chapter is the use of a comparative approach. This not only enlarges our archaeological imagination and allows us to better contextualize the facts under study (**Lyons, Mayor**; see also Lane 2005); it also allows us to formulate historical hypotheses that can be compared with those of archaeologists, or that can lead to new archaeological research (**Bostoen; Gosselain; MacEachern, Mayor; Mezop; Schoenbrun; Stahl**). In this regard, we note the almost universal use of distribution maps, which returns us to a common archeological practice. These maps are fundamental tools in interpreting data and formulating historical hypotheses. However, this first requires consideration of their scales, and of scales of comparison more generally (**Gosselain;**

¹ Centre d’Anthropologie culturelle – CP 124 – Université libre de Bruxelles, Belgium.

Mayor), of the information to be recorded, and of the significance of the spatial distributions that are generated (**Boston; Gosselain; Mayor; Polet; Ricquier; Schoenbrun**). The analysis of these spatial distributions may often require a second approach to comparison, through research on their relations to social, environmental or historical phenomena.

To conclude this brief rendering of the intersections between ethnography and archeology in exploring the African past, we need to remember the advice that was frequently repeated by our late colleague, the linguist Baudouin Janssens: everyone should start working independently and with critical rigour on their own data, and the confrontation with conclusions derived from other disciplines should be done only after that. This avoids circular reasoning, and the mutual validation of data that are not well-substantiated. This does not diminish the need to keep abreast of advances in other, partner disciplines, either in their methods or their results. On the contrary, such knowledge is essential not only to undertake a fruitful interdisciplinary dialogue, but also to preserve one's critical judgement for possible disjunctures, as **Scott MacEachern** reminds us in the case of genetic analysis.

References

- Charry, E. 2000. *Mande Music. Traditional and modern music of the Maninka and Mandinka of Western Africa*. Chicago: University of Chicago Press.
- Gosselain, O.P. & Smolderen, L. 2016. 'Les fantômes du Dendi. Lorsque les restes d'une ancienne filière textile surgissent au Nord Bénin'. *Techniques & Culture* 65.
- Lane, P. 2005. 'Barbarous tribes and unrewarding gyrations? The changing role of ethnographic imagination in African archaeology'. In A. Stahl (ed.), *African Archaeology. A Critical Introduction*, pp. 24-54. London: Blackwell.
- Masquelier, A. 2001. *Prayer has spoiled everything. Possession, power, and identity in an Islamic town of Niger*. London: Duke University Press.
- Seignobos, C. 1908. 'Des fortifications végétales dans la zone soudano-sahélienne (Tchad et Nord Cameroun)'. *Cahiers ORSTOM* (Series 'Sciences humaines) 17(4): 191-222.
- Tamari, T. 1991. The development of caste systems in West Africa. *Journal of African History* 32: 221-250.
- Vansina, J. 1962. *De la tradition orale. Essai de méthode historique*. Tervuren: Royal Museum for Central Africa.
- Vansina, J. 1985. 'Historians, are archaeologists your siblings?' *History in Africa* 22: 369-408.

THE DIRECT HISTORICAL APPROACH

Ann B. Stahl¹

The term “direct historical approach” was coined by early 20th-century ‘ethnohistorians’ interested in the recent pasts of Native Americans. Prior to that time, archaeology in North America had focussed preferentially on ancient mound sites thought to be too complex to be constructed by the ‘simple’ indigenous societies of eastern North America. This perception ignored the high mortality, population loss and resettlement that these indigenous groups had suffered through settler colonization. The small Native American populations that persisted in regions like the northeastern United States were therefore seen as disconnected from the sites that interested archaeologists.

In the early decades of the 20th century, a small cadre of scholars began to work in regions where, despite settler colonization, Native Americans held on to some of their ancestral lands, for example the Iroquois of New York or Pueblo people of the American Southwest. These scholars became interested in the histories of these groups. Because at that time studying ‘history’ was thought to depend on written sources, scholars referred to studies of non-literate Native American societies as ‘ethno-history.’ They used European documents to study the history of these indigenous people, but also relied on ethnography and archaeology. Notably the term ethnohistory was rejected by scholars who worked in Africa. They argued that no special term was needed to refer to the study of Africa’s precolonial past, despite the importance of oral traditions and archaeology to that endeavour (Vansina 1962).

Faced with the problem of drawing connections among sources deemed unconventional by historians (e.g., archaeological and oral historical evidence), early North American ethnohistorians sought a method to ensure the likelihood that these sources were reliably connected to a known group of people. The ‘direct historical method’ was developed as a way to achieve this. In the American Southwest where Native American peoples lived in pueblo-style settlements that resembled precolonial architecture, the direct historical approach was based upon assumptions of continuity between past and present (Parsons 1940). It was thought that, once a con-

nection could be demonstrated between a group of people and an archaeological site, observation of ongoing life (e.g., through ethnographic research) could be used to reconstruct past lifeways. They used this a means to ensure that analogies – insights based on observation of present-day practice – could be reliably used to interpret the past.

The assumptions of this early ‘direct historical method’ were spelled out by William Fenton who worked on sites associated with Iroquoian people in New York. Fenton formulated three premises of what he called ‘upstreaming’: that 1) broad cultural patterns tend to be ‘stable over long periods of time;’ 2) study should precede from a focus on the most recent sources (‘because they contain familiar things’) to earlier sources; and 3) a focus should be placed on ‘those sources in which the descriptions of society ring true at both ends of the time scale’ (Fenton 1952:335). The problem with this formulation is that it assumed what should have been asked: was there, in fact, continuity of practice and attributes through time? At the time, these scholars saw change as something that ‘eroded’ culture and made it less ‘authentic.’ This was a period when it was assumed that Native American societies were in the process of disappearing and that indigenous peoples would ultimately be assimilated into dominant society. Change was seen as a process of ‘acculturation’ that would ultimately lead to the demise of Native American cultures. These flawed assumptions of the direct historical method ignored the fact that Native American peoples had long been entangled in historical processes, and failed to take account of the diverse ways in which they responded to the shifting global entanglements within which they had operated for centuries prior to the recording of ethnographic accounts in the 20th century.

A notable exception to this assumption of continuity in early applications of the direct historical method centred on the American Plains regions where the indigenous peoples were historically known as nomadic buffalo hunters. Archaeologists like Strong (1933) and Wedel (1938) used archaeological evidence to demonstrate that the lifeways of Plains peoples had been transformed by the introduction through European contact of the horse. Prior to accessing horses, Plains peoples had been farmers who augmented their diets through hunting, their settlements

¹ Anthropology, University of Victoria, Canada.

confined to the fertile margins of the Plains region. Adoption of the horse enabled Native Americans of the Plains region to follow migrating buffalo herds, a practice associated with the adoption of alternative forms of movable dwellings ('teepees'). Their work demonstrated the value of the direct historical method in documenting *change* as well as continuity.

This work had important implications for the way in which we approach analogical reasoning. Analogy is a foundational form of logic in which we assume that if things are alike in certain respects that they must be alike in others as well. Applied in this way, analogy *assumes* similarity. As an example, if we find a stone tool shaped like a knife, we might assume that the tool was used for cutting as knives are today. But if, as in the Plains example described above, we adopt a *comparative approach* to analogy, we *assess* rather than assume similarity (Wylie 1985). Archaeologists like Strong and Wedel documented sites that differed from the expectations of historic Plains lifestyles, yet showed through material culture how they were nonetheless linked to Plains peoples. Returning to the knife example, similarity in form provides a basis for comparing other attributes. For example, if a tool was used a knife, it should show a thin edge with forms of wear consistent with slicing or cutting. If it does not – if the edge of the tool is steep and the forms of wear consistent with some other activity, for example scraping – the analogical inference of the tool as a knife is not verified. This could lead to an alternative analogue, for example the interpretation of the tool as a scraper, in which case we might be successful in identifying a glossy build-up that is sometimes characteristic of processing animal skins.

Putting these two approaches together – the direct historical method and a comparative approach to analogy – offers a powerful means to explore the dynamism of cultural practice in relation to historical processes. It enables us to explore how people responded to the challenges and opportunities of recent centuries, for example as Africans participated in the forging of Atlantic networks or responded to climatic and environmental change. This dual approach helps us to appreciate how people built on prior practice as they responded to novel circumstances – in short, to appreciate how they improvised. Drawing on multiple lines of evidence – archaeological, documentary and oral – further strengthens this approach, particularly when each is approached comparatively and used to assess the strengths and weaknesses of the other.

A comparative approach to the direct historical method has been used to good effect in a number of West African case studies. For example, work in the Banda area of west central Ghana has documented the continuity but also changes that characterized daily life with the region's shifting global entanglements. These ranged from its involvement in medieval Sudanic networks that connected West Africa to the Mediterranean world to the Atlantic networks of recent centuries and the brief period of formal British colonial occupation. As described more fully in Stahl (2001:19-40), the key to this approach was to begin analysis with a focus on recent sites and practices – a contemporary baseline – and comparatively assess a range of sources to chart commonalities and differences with earlier sites and practices.

As an example, later 20th-century Banda villages were characterized by earthen-walled houses arranged around open courtyards where domestic activities like cooking are focused. The coursed earth or tauf-walled houses with peaked, thatched roofs are durable with appropriate maintenance. Many have stood for decades. Yet most Banda villages are associated with adjacent archaeological sites abandoned early in the British colonial period (early 1900s) when British colonial officials used various sorts of persuasion (including razing houses) to encourage villagers to rebuild according to a British 'village planning' scheme. These schemes were implemented – more or less successfully – across British colonies and, while details varied, common elements included a reconfiguration of space through measures like orienting houses on a grid pattern and realigning practices encompassed under a British conceptualization of 'sanitation.' This included establishing special purpose cemeteries on village margins, refuse tips and so on. With respect to the Banda area, this also encompassed British ideas of a 'model compound' based on house forms with which British colonial figures were familiar in the southern Gold Coast Colony (e.g., among the Asante). This raised questions regarding past practice. To what extent were the British successful in imposing their village planning schemes? What did Banda area houses and villages look like prior to village relocation? What was the spatial configuration of activities in the centuries prior to British colonial occupation? Abandoned sites directly and historically linked to later 20th-century villages held promise to address these questions.

Excavations at successively earlier sites have revealed important insights into Banda settlement practice. Begin-

ning with investigation of sites abandoned early in the colonial period, it became clear that the villages described in early colonial documents by the first British officials to visit the area were temporary villages established late in the 19th century when Banda villagers had returned to the area following a period of warfare and dislocation. Those houses were small, free-standing wattle-and-daub structures, buildings that could be raised quickly at a time when people were coping with conditions of uncertainty. Yet an area of the site occupied earlier in the 19th century – prior to the site’s abandonment during the mid-century upheavals – was characterized by very different architecture and spatial arrangements. Here the houses were durable tauf constructions arranged in compound formations – similar to those of the later ‘planned’ village, though without evidence of the grid pattern of streets characteristic of 20th-century villages. In short, the late 19th-century housing that the British took to be characteristic of Banda ‘traditional practice’ (‘flimsy’ wattle-and-daub construction) was based on a moment in time when Banda villagers had responded with expediency to the conditions in which they found themselves. The architectural and spatial practices characteristic of the ‘planned’ colonial villages drew in fact on an earlier repertoire manifest in the early 19th-century village, suggesting a deeper flexibility and durability of practice than can be gleaned from documentary sources. As discussed more fully elsewhere (Stahl 2001:148-214), a comparative approach to practices of craft production, subsistence and exchange based on multiple sources (documentary, oral and archaeological) carefully seriated in time has yielded valuable insight into aspects of both continuity and change in the lifestyles of Banda peoples over recent centuries. Key to this approach is using 20th-century or contemporary insights (e.g., from ethnoarchaeology) as a *baseline for comparison* rather than as practices or patterns to be naively projected into the past.

Ending on a cautionary note, it is important in pursuing a direct historical method to be well aware of the flexibility and historical malleability of ethnicity. The ethnic entities of today are the products of complex historical processes – outcomes that should not naively be projected into the past. We know for example that processes set in motion by colonial officials – like schooling and the expansion of literacy – have shaped the contours of contemporary ethnicity (Hawkins 2002). We know that African societies were flexible in their membership, often embracing compositional strategies (Guyer & Be-

linga 1995) in which they drew strength by incorporating people who held diverse knowledges. So too were many societies open to adopting new strategies and practices in improvisational fashion, whether with respect to ritual, foodways or other aspects of daily life. As such, we need to be careful to avoid ethnic essentialism – the tendency to assume that the practices and attributes of a given group of people are fixed. Archaeology and the direct historical method have much to contribute to our understanding of the dynamism of African societies, so long as we deploy these approaches comparatively and in ways that admit of both change and continuity.

REFERENCES

- Fenton, W.N. 1952. ‘The Training of Historical Ethnologists in America’. *American Anthropologist* 54: 328-339.
- Guyer, J.I. & Beilinga, S.M.E. 1995. ‘Wealth in People as Wealth in Knowledge: Accumulation and Composition in Equatorial Africa’. *Journal of African History* 36: 91-120.
- Hawkins, S. 2002. *Writing and Colonialism in Northern Ghana: The Encounter between the LoDagaa and the ‘World of Paper.’* Toronto: University of Toronto Press.
- Parsons, E.C. 1940. ‘Relations between Ethnology and Archaeology in the Southwest’. *American Antiquity* 5: 214-220.
- Stahl, A.B. 2001. *Making History in Banda. Anthropological Visions of Africa’s Past.* Cambridge: Cambridge University Press.
- Vansina, J. 1962. ‘Ethnohistory in Africa’. *Ethnohistory* 9: 126-136.
- Wylie, A. 1985. ‘The Reaction against Analogy’. In M.B. Schiffer (ed.), *Advances in Archaeological Method and Theory*, vol. 8. New York: Academic Press, pp. 63-111.

ORAL TRADITION

David Schoenbrun¹

Oral traditions are ‘verbal messages which are reported statements from the past beyond the present generation’ (Vansina 1985). Oral histories differ; their verbal messages are statements about the present generation. Oral traditions include migration itineraries, military conflicts, famines, and claims about the origins and fates of groups. Oral traditions include names of places, people, animals, plants, and objects often related to claims about which groups were first in a place or a region. In order to analyze and interpret the historical riches in oral traditions, one begins by understanding what shapes the transmission of its messages (Ogot 2001). Oral traditions were performances before they became written accounts (fig. 1). They contain evidence about both the construction of the past and the past itself. It is correct to think of them as historical and archaeologists may benefit from analyzing and interpreting them or including in their teams a scholar who can do so. But their messages often have many meanings.

One begins by finding out how people who claim a connection to the area in which one is working think about the past. What genres of talk about the past exist or existed? What distinguishes them? Who may specialize in their performance? Where and when are they performed? These questions invariably lead the researcher to local experts on the past. One must then look beyond such experts and the established centers for their knowledge – schools, missions, shrines, courts, palaces, and so forth – in order to find other versions of oral tradition on the particular topic(s) of interest. For example, if a researcher seeks performances of oral traditions in places like shrines rather than in places like royal, noble, or chiefly courts, they may find performances on the same topics but told differently or emphasizing different ideas (Kodesh 2010). Balancing good manners and respect with persistence, a researcher must find other locations and opportunities for the production of oral tradition than those they encounter first.

The phrase ‘oral traditions’ can be misleading because they are often strongly influenced by material that performers have learned from books or other media. At-

tending and documenting the performance of oral traditions today must include locating written versions. They are commonly found in the accounts of foreign travelers in the region, mission archives and publications (which often include material penned by Africans in their vernacular), and colonial archives. Scholars working in the 1950s and 1960s to recover Africa’s earlier history embraced research in oral traditions and much of their work may have been deposited in national archives, university libraries, or remain in their possession. Tracking the influences of performance and writing on oral traditions is an example of understanding what shapes the transmission of the messages they convey. But the influences of writing on the contents of performed oral

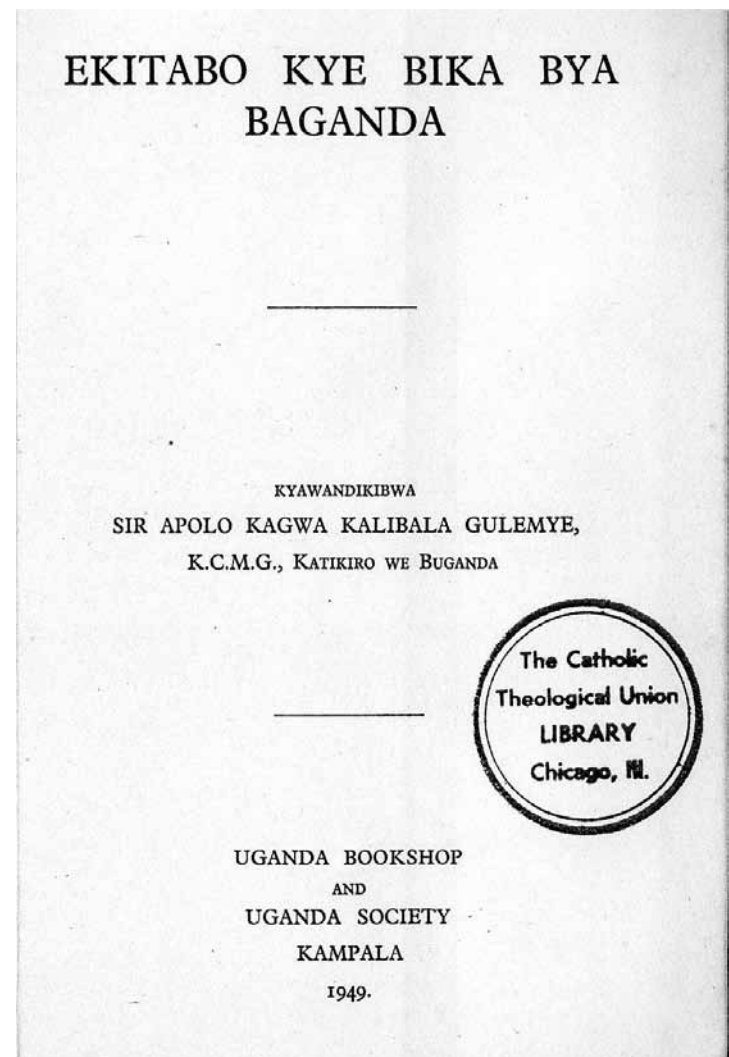


Fig. 1. Title page of the most commonly cited history of the Ganda clans, including the Lungfish clan (1st Edition, 1912). The Title’s English translation is *Book of the Clans of Buganda*.

¹ Weinberg College of Arts and Sciences, History Department, Northwestern University, USA.

traditions do not extinguish their value as evidence of past events and past political realities.

To analyze and interpret the historical content of oral traditions, the researcher moves between performances of oral traditions and documentary accounts of them. The goal is to find or prompt different versions to study comparatively (see Stahl, this volume, pp. 250-252). One then fits their contents into the past contexts of use that shaped them by drawing on the findings of other historical sources – such as environmental studies, historical linguistics, and archaeology. These sources contain datable information to which topics in the oral tradition refer and they provide broader context for past performances of oral tradition. Clan traditions are widely found in Africa and they may be treated in this way. A clan history is very often a history of a network told through a metaphor of descent that manages contests over the contributions of different nodes in the network by placing them at particular points in an unfolding story. The older or earlier figures in the traditions with which later groups enjoy a tie of affinity or marriage ennoble each other. Clan traditions – indeed, all oral traditions – unfold in a dynamic tension between teller(s) and audience. It is therefore dangerous to take literally the rhetoric of descent that shapes them. The trails of generations they trace across the land over time by a series of migrations are better seen as networks of political affiliation and social opportunity, creating and joining smaller, dispersed communities (Shetler 2007). Where royal and clan traditions coexist, the latter tend to be calibrated by the shifting power of the royal centre (Schoenbrun 2013), something often revealed in the different versions of events one finds in the two genres. If you study performances at a royal capital or a chief's compound and then study them at a shrine or a place claimed by a particular clan network as an early home, the contents and shape of a clan's oral tradition changes, departing in rich ways from royal traditions (Cohen 1989; Kodesh 2010).

One must pay careful attention to the settings in which oral traditions are performed. This can be very difficult, if not impossible, to achieve from books alone. In Uganda, clan histories are very common. They tell about distant pasts but they have lives rooted firmly in 20th century political realities. Indeed, the messages one retrieves from oral traditions, when properly analyzed and interpreted, are nothing less than traces of earlier

political realities. The politics of imperial conquest, mission activity, and the establishment of colonial rule all unfolded in this part of Africa after the 1860s and were concentrated most intensely in the two decades from 1885 to 1905. During this time the political fortunes of clans, kingdoms, and wealthy houses in the region took divergent paths with respect to each other, resisting or manipulating external interests. It was the time during which clan and dynastic traditions took their earliest written forms – in vernacular languages and sometimes translated (**fig. 2**). Of course, clan traditions were deployed throughout the colonial period – most energetically around issues of land tenure and the creation of markets in private landed property from 1900 to the 1920s. And, the political winds of post-colonial Uganda have continued to blow through clan traditions up to the present, especially around issues of sovereignty and party politics. Whether written, oral, or both, clan traditions are alive.

Whatever past one hunts down with oral traditions, one begins by grasping the ways in which culturally specific but shifting concepts of time, space, and truth operate in them. Space is defined geographically, as a region

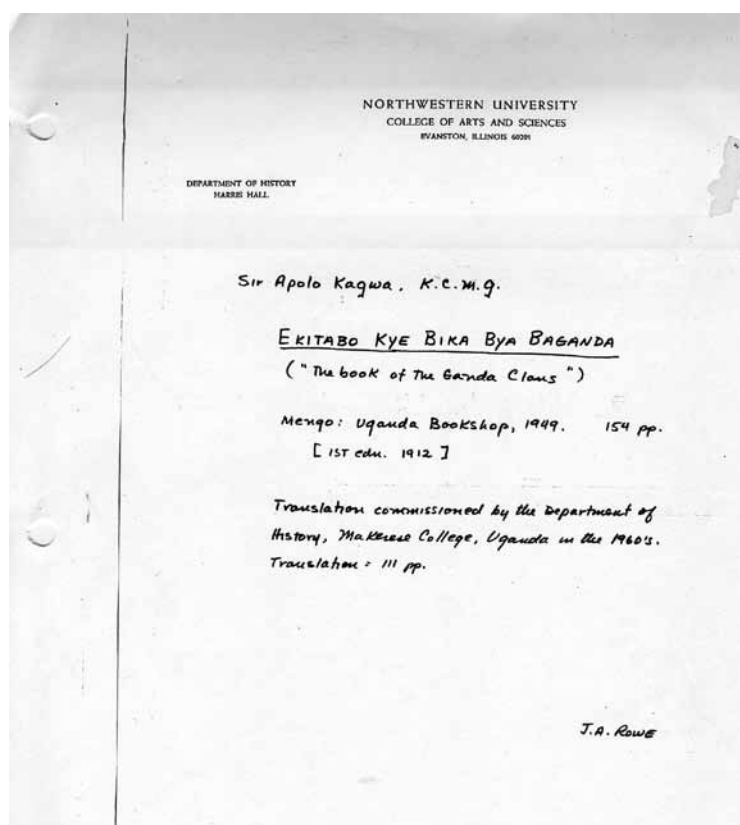


Fig. 2. Title page of one of two unpublished English translations of Kagwa's history of the Ganda clans.

composed of nodes of authority, and relationally, as a set of links between those nodes. Descent logic marks the unfolding of time by assigning generations a basic referential kinship standing. Huge amounts of information are often compressed into the earliest and the most recent generations and the brothers and sisters alive in each. The longer ago – or the earlier in the line of descent linking different generations – an event occurred or a persona existed, the greater the weight of truth behind it. But alternative versions use the same logic to dispute one another, by shifting the order of generations or by inserting new ones in the sequence or by leaving some out of the mix, or all three. Clan histories, then, tell about the shifting political affiliations of many differently sized groups, so it is unsurprising and valuable to find in them displays of dispute, conflict, and fission. Again, one cannot make head or tail of such characteristics apart from the performance setting in which they are actually made.

Archaeologists benefit from oral traditions plausibly connected to a region of survey or a set of sites in a region, in two important ways. First, they often contain names, titles, or sayings with metaphorical content that also appears on material culture. Versions of the Lungfish clan's history agree that one Mubiru Gabunga traveled along Lake Victoria's northern littoral and some of its island archipelagos, from east to west. He established a network of smiths, canoe-builders, fishing groups, and spirit mediums. When his generation's travels were completed, he settled at a safe harbour on the lakeshore, with the assistance of a couple of other clan networks in the region. There he handed over leadership of the clan, by placing a copper bracelet on the wrist of a 'son' called Ssematimba (father of the pythons) who then moved to another harbor and stayed there (Kagwa 1912). In 1929 a pressgang of African prisoners clearing land for the expansion of the colonial prison in which they were incarcerated uncovered a buried set of terracotta figures dated to between the 10th and 12th centuries. One figure is a head with a coiled neck-ring, an icon of a python's constricting method of crushing its prey (a local metaphor for the human experience of being possessed by a spirit). The other figures in the assemblage are headless, but they wear bangles on their wrists. Lungfish clan histories claim that once their network had been defined spatially and relationally – during the generation of Mubiru Gabunga and his 'brothers' – the next period in its

history involved establishing authority over territorial spirits represented by the figure of the python. When set alongside the iconography of the *terracottas* from Luzira Prison, the stakes of traditions and the messages in the assemblage enter a dynamic conversation about a new scale of politics (Schoenbrun 2016).

Second, in recounting the itinerary of travels undertaken by founding generations of a clan, traditions craft a map that is both geographical and relational. The map defines a region of activity for the clan by linking nodes in it. Nodes are stopping places. Links are movements between them. The shapes of these regions may help make sense of facies in a pottery tradition, or the temporal overlap of two different pottery traditions, one fading away and the other coming to life, in the same region. The traditions often specify why the nodes and links mattered to people, pointing to what brought pottery traditions to life or led to their disappearance. Lungfish clan histories do not agree on every stop in this itinerary, but the stops on which they agree all lay very near the shores of Lake Victoria, or on one of the islands that dot the northern part of the Lake. The itineraries also agree that Lungfish clan founders and their followers very often moved by canoe. Of the several 'brothers' said to have founded the clan, one of them is always recalled as a smith. Fishing in Lake Victoria was an important economic activity that differed from fishing in rivers or smaller lakes. It required specialized knowledge of fish ecology in a huge and diverse lake, technical skill in making and setting large nets, and great skill in navigation and understanding weather patterns.

Nuances in Lungfish clan traditions come to light by paying attention to their performative settings, studying the bits of historical information contained in itineraries, the significance of which people may no longer know. These elements teach the archaeologist about what mattered to people of long ago. The archaeologist then sheds new light on ancient settings for performances of oral traditions, by unearthing materials such as large pots used for brewing the beer that accompanies performances. They may discover that the depositional contexts of an entire kind of pot reveal its exclusive use in making offerings at shrines. And they may analyze and interpret assemblages of objects – such as the Luzira Group – implicated in spirit possession, a common performative setting for oral traditions in many parts of Africa.

REFERENCES

Cohen, D.W. 1989. 'The Undefined of Oral Tradition'. *Ethnohistory* 36 (1): 9-18.

Kagwa, A. 1912. *Ekitabo kye Bika bya Baganda*. Kampala: Uganda Bookshop.

Kodesh, N. 2010. *Beyond the Royal Gaze: Clanship and Public Healing in Buganda*. Charlottesville: University of Virginia Press.

Ogot, B. A. 2001. 'Luo History and Identity'. In L. White, S.F. Miescher & D.W. Cohen (eds). *African Words, African Voices: Critical Practices in Oral History*. Bloomington: Indiana University Press, pp. 32-50.

Schoenbrun, D. 2013. 'A Mask of Calm: Emotion and Founding the Kingdom of Bunyoro in the Sixteenth Century'. *Comparative Studies in Society and History* 55 (3): 634-664.

Schoenbrun, D. 2016. 'Pythons Worked: Constellating Communities of Practice with Conceptual Metaphor in Northern Lake Victoria, ca. 800-1200 CE'. In A. Roddick & A. Stahl (eds). *Knowledge in Motion: Constellations of Learning Across Time and Place*. Tucson: University of Arizona Press, pp. 216-246.

Shetler, J.B. 2007. *Imagining Serengeti: A History of Landscape Memory in Tanzania from Earliest Times to the Present*. Athens, OH: Ohio University Press.

Vansina, J. 1985. *Oral Traditions as History*. Madison: University of Wisconsin Press.

HISTORICAL LINGUISTICS

Koen Bostoen¹

Linguists and archaeologists offer complementary viewpoints on human behaviour and culture in past African communities. While historical-comparative linguistics commonly deals with the immaterial traces of the past in Africa's present-day languages, archaeology unearths the material vestiges of ancient cultures. Even if both sciences share similar core concepts, their methods, data and interpretive frameworks are profoundly different. Explaining some basic principles of historical-comparative linguistics as applied to the Bantu languages and debunking some common misconceptions are the central aims of this contribution. Due to space constraints, no detailed bibliographic references are provided throughout the text (see my earlier publications for extensive bibliographies).² Some essential readings for non-specialists are listed at the end of this chapter.

I. DIACHRONIC LINGUISTICS ON THE BASIS OF SYNCHRONIC DATA

Ideally speaking, historical linguistics is the study of distinct historical stages in the evolution of one single language or language family. This is the case in Romance, for instance, where the development of Latin into its multiple daughter languages can be empirically reconstructed. In Africa, examining language variation through time on the basis of diachronic language data is hardly ever possible, due to the lack of written documents.

The case of Kikongo, whose historical record starts in the early 17th century, is exceptional, and even not equalled by Kiswahili whose oldest surviving texts do not date further back than the mid-18th century. For most other Central African languages, written documents become at best available from the late 19th century onwards. Even today, there are still many undocumented languages, several of which are on the verge of extinction. Historical linguistics in Africa thus usually consists in the comparative study of historically-related languages. This up-stream approach, also known as

'historical-comparative linguistics', starts from extant languages and tries to reconstruct their evolution from ancestral stages through the study of current-day variation. Such inter-language variation can be phonological, morphological, syntactic, semantic or lexical.

In the case of Bantu, the hypothetical common ancestor language reconstructed on the basis of similarities observed between languages known mainly from the 19th century onwards is commonly called Proto-Bantu. This proto-language is assumed to be the best possible reflection of the ancestor language that was supposedly spoken some 4,000 to 5,000 years ago in the area from where Bantu languages started to spread through Central Africa and beyond. Bantu linguists agree to situate this homeland in the so-called Grassfields region of Cameroon, not far from the country's border with Nigeria. This zone displays the highest linguistic diversity (which means that parent languages had sufficient time to diverge locally) and is close to the area where the Benue-Congo relatives of Bantu languages are spoken.

II. REFERENTIAL VS. HISTORICAL OR GENEALOGICAL CLASSIFICATIONS

The best-known Bantu classification is no doubt Malcolm Guthrie's. In 1948, Guthrie subdivided the Bantu languages in 16 different zones labelled A, B, C, D, E, F, G, H, K, L, M, N, P, R, S and T, which he reduced to 15 in 1971 by merging the last two to one zone. Each zone is further subdivided into language groups, indicated by a decimal number, in which individual languages are indicated by a unit. Lowercase letters following certain units refer to dialects of a same language, e.g. Ciluba (L31a) and Lulua (L31b). In contrast to what is often believed, Guthrie's classification is strictly referential and was never meant to be historical: Guthrie did not rely on the 'Comparative Method' (which is the core approach of historical-comparative linguistics) or 'shared innovations', its basic principle for historical subgrouping. Shared innovations are lexical, phonological or grammatical changes that took place only once in some ancestor language from which its daughter languages inherited it and which are therefore indicative of the closer

¹ BantUGent - UGent Centre for Bantu Studies, Department of Languages and Cultures, Ghent University, Belgium.

² <http://research.flw.ugent.be/en/koen.bostoen>

relatedness between languages. By attributing a unique alpha-numeric code to each language, Guthrie wanted to facilitate comparison between the several hundred Bantu languages known at the time.

Despite its limited historical or genealogical value, Guthrie's classification remains a useful reference tool. Each one of the nearly 900 documented Bantu language varieties can be approximately situated in space thanks to its unique code. That is exactly why Jouni Maho updated Guthrie's list by adding new languages, but remained as faithful as possible to the original approach. Other scholars did propose rearrangements on historical grounds. Only one of these gained relatively wide acceptance amongst Bantu linguists, i.e. zone J proposed by the former linguistics department of the Royal Museum for Central Africa in Tervuren.

Bantu as a language family has been established ever since Bleek (1851). Its homeland is the region where the 'Narrow Bantu' languages, i.e. those conventionally classified as Bantu by Guthrie, meet the 'Wide Bantu' languages, i.e. their closest Benue-Congo relatives aka 'Bantoid'. The small 'Mbam-Bubi' subgroup, consisting of several languages of the Mbam region of central Cameroon and Bubi spoken on Bioko Island, is the genealogical junction between Narrow and Wide Bantu. The (Narrow) Bantu family further branches into five major subgroups: 'North-Western', 'Central-Western' (aka 'North Zaire' or 'Congo'), 'West-Western' (aka 'West-Coastal'), 'South-Western' and 'Eastern'. We mainly owe this robust understanding of Bantu genealogy to quantitative analyses of so-called 'basic vocabulary', such as lexicostatistics and phylogenetics. Qualitative approaches based on phonological and/or grammatical features fit less with the tree model of language divergence, and emphasize that convergence due to language contact also had a significant impact on the speciation of Bantu languages.

III. LANGUAGE AS AN HISTORICAL SOURCE

Our knowledge of the environmental, social, cultural, and historical phenomena underlying language change is often very limited in Africa. Its languages most often need to 'speak for themselves'. The study of language has in itself become an important method of reconstructing history to which not only linguists, but also historians and archaeologists dedicate themselves. Founded on the basic premise that vocabulary shared between speech

communities³ is a reflection of shared history, the study of widespread cultural vocabulary usually provides interesting insights on the lifestyle of past societies. This sub-discipline is also known as the 'words-and-things method' (see Ricquier, this volume, pp. 261-263) or linguistic palaeontology. To archaeologists, language data are particularly useful as a source of indirect historical evidence for those aspects of human culture which are either immaterial or whose material traces do not conserve well. Similar words with similar meanings shared by numerous languages can be inherited from a common ancestor language and spread through the dispersal of its daughter languages. They can also have been adopted through contact and spread across languages as loanwords.

To distinguish between inherited and borrowed vocabulary, linguists depend on the principle of regular sound correspondences. These are phonological similarities between languages, which cannot be the outcome of historical accident, because they are recurrent, systematic and without unexplainable exceptions. While synchronically widespread inherited terms can be reconstructed into a putative proto-language via these regular sound changes, loanwords cannot. Several Great Lakes Bantu languages, for instance, have a lexical doublet to refer to calabashes and glass bottles. These are two words that are historically related, but one of them was acquired through regular intergenerational transmission from an ancestor language, while the other was obtained from vehicular Swahili through contact-induced diffusion. The inherited word for calabash is phonologically much more heterogeneous, e.g. Sukuma *cuba*, Nyamwezi *nsòhá*, Ganda *ènsúwà*, Shi *nshùhá*. These words were subject to the regular sound changes that their language underwent since Proto-Bantu for which **-cópà* 'calabash' has been reconstructed. Such is not the case for the term for glass bottle, which they recently borrowed from Swahili resulting in much more similar loanwords: Sukuma *cupá*, Nyamwezi *cupa*, Ganda *ccúpà*, Shi *ícúpà*. In Swahili itself, the word *chupa* refers to both calabashes and glass bottles. When the latter type of containers were introduced along the East African coast, Swahili speakers called them after their traditional containers using the word for calabash which they inherited from Proto-Ban-

3 A speech community is defined here as a group of people who consider themselves to speak a same language.

tu. Swahili speaking long-distance traders subsequently introduced this new specimen of material culture and its Swahili word in several East-African communities, many of them already having a regularly inherited Bantu word for ‘calabash’.

Unlike archaeologists, linguists do not have a standard and universally accepted method for the absolute dating of language change. In the absence of diachronic language data and without the tentative association of language data to archaeological data, linguists need to limit themselves to relative dating. To do so, they rely on a number of principles for which they are indebted to archaeology: stratigraphy, geographic distribution and seriation.

Linguists refer to the concept of stratigraphy to disentangle the successive strata in the formation of a language. The grammar and lexicon of a language are transmitted through time and transformed due to the loss of old elements and the incorporation of new elements. They accumulate formative layers, which are never neatly superposed. Unlike archaeological strata, language layers are not subject to the law of superposition. There is permanent stratigraphic contamination, so to speak. It is the task of the historical linguist to order the present-day data into successive strata. The words for ‘calabash’ and ‘glass bottle’ in the example above clearly belong to two distinct strata of language history.

Linguistic geography or geolinguistics can help with the relative dating of language layers. This method deals with the geographic distribution of linguistic features. It is used for mapping loanword diffusion routes and for determining their direction of borrowing and also as a relative chronology device. ‘Linguistic isoglosses’ are the equivalent of stylistic horizons in archaeology. They mark the geographic distribution of a given linguistic feature shared by a number of languages. For example, cognate words for Kimbundu **njila** (‘bird’) are only found in a geographically restricted cluster of Bantu languages spoken in the southwestern part of the domain, while cognates for Kikongo **nuni** ‘bird’ are found throughout the Bantu domain. Such spatial distribution is interpreted as a function of time: the Kikongo word is a shared retention going back to Proto-Bantu while the Kimbundu word is a more recent shared innovation. The relative chronological interpretation of isoglosses is done according to certain areal norms which are not strict rules, but rather hermeneutic principles, e.g. the oldest form is

the most scattered one, which is preferably attested in the more outlying areas, while the younger form occurs in a group of adjacent languages, which may be large, but not as scattered as the older form. A judicious historical interpretation of isoglosses requires a basic insight into the internal classification of a language family. The relative time depth does not depend so much on the number of languages in which a feature occurs, but rather on its distribution over distinct historical subgroups. Hence, a term that is rare but scattered amongst the north-western and western Bantu languages is considered older than a synonym that is densely spread among eastern Bantu languages only.

A final basic archaeological concept also found in historical linguistics is seriation. Linguists usually rely on it for the sequential ordering of sound changes. Each language is subject to sound changes, which can be called regular to the extent that they affect all words sharing a given phonological environment. The chronological sequencing of sound changes is primarily used for the historical classification of languages through the principle of shared innovations. If closely related languages share a historical change (whether lexical, phonological or grammatical), there is a good chance that this innovation only happened once, i.e. in their most common recent ancestor – although independent convergent change can never be entirely excluded. Once one has an idea of the internal classification of a language group and the relative chronology of sound changes, seriation is also a helpful dating device for loanwords. The earlier foreign words are borrowed, the more sound changes they have in common with regularly inherited words and the better they are phonologically integrated, making it difficult to identify them as borrowed vocabulary.

CONCLUSIONS

The interaction between African archaeology and linguistics has been severely criticized in the past, among other things due to a lack of critical evaluation of underlying concepts and methods. Although this appreciation is certainly not undeserved, this should not refrain us from interdisciplinary collaboration. No discipline is capable of solving on its own the many complex riddles of African history. Sound archaeological-linguistic teamwork requires in the first place a good understanding of each other’s concepts, methods and evidence, to which I have tried to contribute in this chapter. A second

fundamental issue is the importance of direct collaboration between scholars of different disciplines who perfectly command their own body of evidence and are able to make a judicious assessment of its historical significance instead of leaving this task to scholars who only master one method or none at all. Finally, it is crucial that archaeologists and linguists mutually benefit from their specific advantages, e.g. absolute dating in the case of archaeology or the possibility to reconstruct vocabulary referring to immaterial or poorly preserved material aspects of human life in the case of historical linguistics.

REFERENCES

- Bastin, Y. & Piron, P. 1999. 'Classifications lexicostatistiques: bantou, bantou et bantoïde. De l'intérêt des "groupes flottants"'. In J.M. Hombert & L.M. Hyman (eds.), *Bantu historical linguistics: theoretical and empirical perspectives*. Stanford: CSLI Publications, pp. 149-164.
- Bastin, Y., Coupeuz, A. & Mann, M. 1999. *Continuity and Divergence in the Bantu Languages : Perspectives from a Lexicostatistic Study*. Tervuren: RMCA (series « Annales de Sciences humaines, série in-8° », no. 162).
- Bleek, W. 1851. *De nominum generibus linguarum Africae Australiae*. Bonnae: Formis Caroli Georgii.
- Blench, R. 2006. *Archaeology, Language and the African Past*. Lanham: Altamira Press.
- Bostoen, K., Clist, B., Doumenge, C., Grollemund, R., Hombert, J.-M., Koni Muluwa, J. & Maley, J. 2015. 'Middle to Late Holocene Paleoclimatic Change and the Early Bantu Expansion in the Rain Forests of West Central-Africa'. *Current Anthropology* 56: 354-384.
- Dimmendaal, G. 2011. *Historical Linguistics and the Comparative Study of African Languages*. Amsterdam/Philadelphia: John Benjamins.
- Grollemund, R., S. Branford, K. Bostoen, A. Meade, C. Venditti and M. Pagel. 2015. 'Bantu expansion shows that habitat alters the route and pace of human dispersals'. *Proceedings of the National Academy of Sciences of the United States of America*. <http://dx.doi.org/10.1073/pnas.1503793112>
- Heine, B. & Nurse, D. (eds). 2000. *African languages: an introduction*. Cambridge/New York: Cambridge University Press.
- Heine, B. and Nurse, D. (eds). 2004. *Les Langues africaines*. Paris: Karthala.
- Hombert, J.-M. & Hyman, L.M. (eds.). 1999. *Bantu Historical Linguistics: Theoretical and empirical perspectives*. Stanford, CA: CSLI.
- Maho, J.F. 2009. NUGL Online: The online version of the New Updated Guthrie List, a referential classification of the Bantu languages (4 June 2009). Online file: <http://goto.glocalnet.net/mahopapers/nuglonline.pdf>
- Nurse, D. & Philippson, G. (eds). 2003. *The Bantu languages*. ('Routledge language family series', no. 4). London/New York: Routledge.
- Nurse, D. and G. Philippson. 2003. 'Towards a historical classification of the Bantu languages'. In D. Nurse & G. Philippson (eds.), *The Bantu Languages*. London/New York: Routledge, pp. 164-181.
- Schadeberg, T.C. 2003. 'Historical linguistics'. In D. Nurse & G. Philippson (eds.), *The Bantu Languages*. London/New York: Routledge, pp. 143-163.
- Vansina, J. 1995. 'New Linguistic Evidence and the Bantu Expansion'. *Journal of African History* 36: 173-195.

THE 'WORDS AND THINGS' METHOD

Birgit Ricquier¹

Suppose you want to put archaeological potsherds in functional context: what did people prepare in these pots, and how? Laboratory analyses may reveal whether they were used for boiling foodstuffs or conservation purposes. However, due to climatic conditions and soil acidity in tropical Africa, the chance of finding diagnostic organic residues is extremely remote. Food processing also implies a series of stages that hardly leaves any traces in the archaeological record, many kitchen utensils being made of organic, hence perishable, materials. In sum, the direct evidence delivered by archaeology and related studies (see chapter 5) cannot answer all historical questions. Indirect evidence in the form of words may provide a solution (see Bostoen, this volume, pp. 257-260). The comparative linguistic study of contemporary words for plants, animals, tools and technologies offers insights into their past. The name for this type of historical-linguistic research – 'Words and Things' – underlines its relevance for the history of material culture. Nevertheless, it may also be used for the history of ideas or cultural concepts, like socio-political structures and religion.²

The following paragraphs offer a step-by-step guide for the 'Words and Things' method, illustrated with examples from food history. The first step is data gathering. When a large number of language varieties is concerned, retrieving words from dictionaries and glossaries may suffice. However, specialized vocabulary is often missing, making fieldwork necessary. When a smaller linguistic subgroup is studied, it is advisable to make field recordings in order to cover dialectal differences, since these may be historically significant. To apply 'Word and Things' in the field is to combine ethnographic observation and linguistic inquiry. In case of material culture, it is important to document the entire *chaîne opératoire* (see Gosselain, this volume, pp. 292-295). The ethnographic observation allows both for a better understanding of a word's meaning and the recording of specialized vocabulary. **Table 1** offers the example of cassava preparations (Ricquier 2013) with words in five language varieties of the Kongo group for which little literature is available.

When collecting vocabulary, linguistic elements such

Table 1. The *chaîne opératoire* of making cassava porridge in five Kongo varieties.

	Vili	Yombe	Kunyi	Kamba	Sundi
cassava (generic)	mayák(a) (or meyáka)	mayáka	mayák(a)	mayáka	mayáka
to soak/to ret	-íin(ik)-	-íin-	-íin-	-yinik-	-inik-
place where the tubers are soaked	-	kísíma	kicinga	bandá	bandá
to peel the tuber	-túúnd-	-túúnd-	-yúbul-	-tund-	-kátul-
to wash the tuber	-súkul-	-súkul-	-	-súkul-	-súkul-
soaked tuber	liyáka libóómb	-	diyáka di máamba	kikóóngo (kiá máamba)/ mukédi	cikédi
to dry in the sun	-ánik-	-ánik-	-anik-	-yánik- / (-yúúmis-)	-yánik-
drying shelf	cyângə	kíyaanga	-	kitálaka	cítálaka
dried cassava	cikoongo	kíkoongo	kikóngó	kikóóngo (kiá yuma)	fúfu
to pound	-tuut-	-tuut-	-tók-	-tuut-	-tuut-
mortar	cyúfu	kívu	kidu	kidú	cítuutulú
pestle	ńti cyúfu	múfu	muswá	mutí / mwáána múúsú	mutí
to sift	-	-yéngis-	-yengis-	-yengos-	yengizá
sieve	-	kíyéngis(a)	kíyengelé	kíyengosó	cíyengoló
flour	fúf(u)	fúfu	kitó	fufu	fúfu
to stir flour in hot water	-vóót-	-vóót-	-hóót-	-hot-	-ot-
stirring stick	ńti fúfu	ńti	lukú	múukú	mwiikú
pot	nzúúngu	nzúúngu	kisa	nzúúngu	ndzúúngu
porridge	fúf(u)	fúfu	kitó	fufu	fúfu

1 Heritage studiess, Royal Museum for Central Africa, Belgium.

2 A discussion of the history of the method and its applications to the pre-colonial history of sub-Saharan Africa can be found in Bostoen (2005:8-18). Ricquier & Bostoen (2010) offer an overview of results obtained by means of the Words and Things method with respect to the food history of Bantu speech communities. Lexical reconstructions have been made for several African language groups. The online database by Bastin *et al.* (2002) assembles most lexical reconstructions that have been proposed for Bantu languages.

as noun classes and tone must be taken into account. Another precaution is to have a questionnaire at hand since ethnographic observations may not cover all known practices.

The Words and Things approach usually starts with ‘onomasiology’, namely the study of words expressing a given concept. These words are paired to their possible ‘cognates’, words that are similar in form and meaning and thus probably share a common history. Each set of cognates is subjected to a formal analysis. Inherited words have undergone sound changes specific to the respective languages and the outcome displays regular sound correspondences with the cognates in related languages. The examples in **Table 2** display regular sound and tone correspondences.

	Ewondo (North-west Bantu, A72)	Venda (East Bantu, S21)	BLR
Example	<i>dúg</i> ‘to row’	<i>-bviúwa</i> ‘to beat up porridge’	*-dúg-
Compare with	<i>dum</i> ‘to thunder’ <i>túg</i> ‘to subject (a slave)’	<i>-bvúma</i> ‘to thunder’ <i>-fiúwa</i> ‘to keep livestock; to keep and handle people expertly, as patron, protector’	*-dúm- *-túg-

table 2. Sound correspondence (Reflexes from Tsala (s.d.: 127, 128, 631) and Van Warmelo (1989: 18, 19, 60), reconstructions from Bastin *et al.* (2002), detailed discussion of the example in Ricquier (2013).)

Loanwords typically display irregular sound correspondences, especially when complex sound changes should have been in play. Sometimes, however, sound changes are minimal and cannot be used to identify loans. East-Bantu nouns with the form *unga* meaning ‘flour’ are a good example, since they could be inherited from Proto-East Bantu or borrowed from Swahili (see discussion in Ricquier 2013). Loans can also be distinguished from inherited vocabulary by their geographical distribution. When forms occur in a continuous region, it is likely that the distribution is the result of borrowing, especially when crosscutting linguistic boundaries. In contrast, a distribution in the form of distant dots on the map, with cognates in different linguistic subgroups, suggests common inheritance. The immediate common ancestor of the languages involved then indicates the word’s age. The Ewondo and Venda examples illustrated above belong to a series that

has cognates in all major Bantu subgroups. The immediate common ancestor consequently is Proto-Bantu. This step implies the insertion of the linguistic data into the genetic classification of the languages involved.

Next, inherited forms are subjected to a ‘semasiological’ analysis, meaning the study of a word’s semantic history. Often, the cognates belong to different semantic fields. Ewondo *dúg*, for example, is part of the semantic field of navigation, whereas its Venda cognate refers to a cooking technique. The latter is a metaphorical extension of the first semantic value: both actions involve the circular movement of a wooden instrument in water. Geography is again in play here. When a given meaning occurs in different linguistic subgroups, whereas another is limited to a smaller language group, the first is more likely to reflect the original semantic value. As for the example offered, the meanings ‘to row with a paddle’ occur in all Bantu subgroups, whereas ‘to stir porridge’ is an East-Bantu innovation.

Sometimes, a word is not inherited or borrowed, but created. Neologisms frequently stem from derivation: for example, in Xeso (West Bantu, C52), *mòpùlúngù* ‘stirring stick’ derives from the verb *-pùlúng-* ‘to stir porridge’ (Ricquier fieldnotes 2010). Other types of neologisms include composition, word blending, eponymy (derivation from the name of a place or region), and the imitation of sounds, or onomatopoeia.

As soon as the etymology of the words for a given concept has been unraveled, the history of these words may be turned into a history of things or ideas. Inherited words refer to realities that were familiar to the ancestors. When an inherited word underwent a semantic shift, or when a new word was created, this may point to the introduction or invention of a new reality. Loanwords, finally, are indicators of novelties adopted from other communities. For example, no word for ‘stirring porridge’ can be traced back to Proto-Bantu, but a reconstruction could be made for two subgroups – East and Southwest Bantu (see Ricquier & Bostoen 2011; Ricquier 2013). This indicates that the cooking technique was new to the first speech communities of the mentioned subgroups.

The final step is to integrate the historical interpretation of comparative linguistic analysis into a known historical context. For the example discussed here, the new insights regarding culinary history need to be linked to the available knowledge about the relevant historical speech communities as well as plant history. Thanks to

historical-linguistic research, we know that the first East and Southwest Bantu speech communities lived in savannah areas where they adopted cereal cultivation. The new cooking technique must have been intended for the preparation of this new starch ingredient (see Ricquier & Bostoen 2011; Ricquier 2013).

Several obstacles need of course to be acknowledged. As the 'Words and Things' method develops in the present, we only have access to the origins of *existing* words and practices. What is lost can no longer be recovered by linguistic means. Second, languages do not always have specialized terms for specific extra-linguistic realities, making it impossible to study their history by means of comparative linguistics (see Bostoen 2009 on 'semantic vagueness'). For instance, in many Bantu languages grindstones are simply named 'stone for grinding' or 'stone for [a certain foodstuff]', nouns too vague to be relevant for food history. Next, a word's history may reveal the time at which a certain practice or tool came into fashion but still conceal its origins. Loanwords indicate the source of inspiration, but when an inherited word underwent a semantic shift or when people use neologisms, no link can be established with other communities. Finally, the interpretation of the results obtained by the 'Words and Things' method largely depends on the classification of the languages involved. Choosing between different classifications often implies choosing between common inheritance or language contact.

Despite these drawbacks, the 'Words and Things' approach can offer valuable insights into matters for which archaeological data cannot be consulted. Moreover, historical-linguistic conclusions have proven to be a trigger of further archaeological and archaeobotanical debate, as in the case of bananas and cereals (see chapter 5) (see the summary in Ricquier & Bostoen 2010).

REFERENCES

- Bastin, Y., Coupez, A., Mumba, E. & T. Schadeberg. 2002. *Bantu Lexical Reconstructions 3*. <http://www.metafro.be/blr>. (Last consultation: 17/09/2015).
- Bostoen, K. 2005. *Des mots et des pots en bantou*. Frankfurt am Main: Peter Lang.
- Bostoen, K. 2009. 'Semantic Vagueness and Cross-Linguistic Lexical Fragmentation in Bantu: Impeding Factors for Linguistic Palaeontology.' *Sprache und Geschichte in Afrika* 20: 51-64.
- Ricquier, B. 2013. *Porridge Deconstructed: A Comparative Linguistic Approach to the History of Staple Starch Food Preparations in Bantuphone Africa*. Unpublished PhD, Université Libre de Bruxelles.
- Ricquier, B. & Bostoen, K. 2010. 'Retrieving Food History through Linguistics: Culinary Traditions in Early Bantuphone Communities.' In R. Hosking (ed.). *Food and Language. Proceedings of the Oxford Symposium on Food and Cookery 2009*. Totnes: Prospect Books, pp. 258-269.
- Ricquier, B. & Bostoen, K. 2011 'Stirring Up the Porridge: How Early Bantu Speakers Prepared Their Cereals.' In A.G. Fahmy, S. Kahlheber & A.C. D'Andrea (eds). 2011. *Windows on the African Past. Current approaches to African archaeobotany. Proceedings of the 6th International Workshop on African Archaeobotany, Cairo*. Frankfurt am Main: Africa Magna Verlag. pp. 209-224.
- Tsala, T. s.d. *Dictionnaire ewondo-français*. Lyon: Imprimerie Emmanuel Vitte.
- van Warmelo, N.J. 1989. *Venda Dictionary. Tshivenda-English*. Pretoria: J.L. van Schalk.

ARTWORKS

Jean Polet¹

INTRODUCTION

‘Artworks’ generally stand as representations of thinking, symbols, or beliefs – all realms that cannot be contained within the narrow confines of the ‘ethnic group’. Snatched from Africa as ‘curios’, then as evidence of the ‘primitive savagery of Africans’, artworks were ‘mute’ and the meanings attributed to them arose concomitantly with the development of a colonial order aimed at dominating societies perceived as organized into ‘tribes’, or ethnic groups. This is why such objects retrospectively ‘acquired’ an origin, an identity, a role and a way of functioning that were strictly limited to ethnic background. Art was thus envisaged as a *sui generis* product of the ethnic group, where artists – always anonymous – worked essentially in the context of culturally predetermined styles, although perhaps in an unconscious way. This vision resulted in a simple, but false, classification: to each tribe a type of work, and within each art thus ‘tribalized’, some rare masterpieces ‘including all the elements of the style’ as well as a multitude of so-called lesser works (Fagg 1965).

Today, this obsolete vision endures in the art market and its prolific literature. Following the works of historians, it must however be replaced by a concept that integrates history, social practices – including playful aspects (Boutin 2007-2009) as masks are not only ‘charged’, dangerous objects –, ideology (or religion), politics, trade, and the recognition of artists as well as their relations with clients in the development of styles.

I. RECORDING ARTWORKS IN GLOBAL HISTORY

Whether they are made of wood, metal or terracotta, African artworks require the same methods as those applied to the arts of the Renaissance, medieval period, etc. Readers are notably referred to the works of Olbrechts (1959) and other art historians who followed his approach (for example, Perrois 1966; Wingert 1972). A major prerequisite is to free artworks from ethnic classificatory grids, and to integrate them into broad spatial and historical perspectives. Three contrasting examples – in terms of research questions and aims – will illustrate the potentials of such an approach.

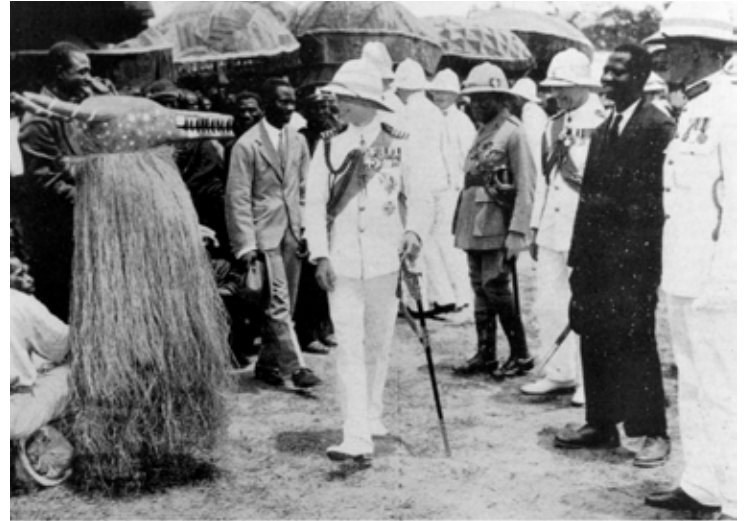


Fig. 1. Prince of Wales visits Gold Coast (Guggisberger 1925).

A. Witnesses of Mande history: helmet masks with zoomorphic jaws

These helmet masks are worn horizontally on top of the head (no wooden part covers the face) and have a long muzzle or jutting mouth, as well as bumps or horns behind the head². They were collected, or seen and described, from the late 19th century to the late 20th century. This particular form is widespread in societies of the west Atlantic savannah as well as Nigeria, but also in central Ivory Coast d’Ivoire and south-west Ghana (Guggisberger 1925; fig. 1). While the overall morphology remains the same, slight changes in the size of particular parts, or the addition of feathers or painted or engraved decorations are observed from one region or population to the next. In museums, these masks are attributed to dozens of ethnic groups.

The new approach of art historians (McNaughton 1974, 1987, 1991, 1992; Pinault-Paradis 2001) consisted first in a careful mapping of the masks’ spatial distribution, which forced them to eliminate any mask with an imprecise origin (fig. 2). The analysis of the Nigerian grouping is ongoing and will not be addressed here. However, that of the western grouping has provided spectacular results when combined with a rereading of old texts and several field surveys.

¹ Professor emeritus of archaeology and history of art in sub-Saharan Africa, Université de Paris I Panthéon-Sorbonne, France.

² You can see one of these helmet masks on the following link: <http://collections.quaibrantly.fr/#c6f8b391-52ab-4a6d-befe-1de6e98ae649>

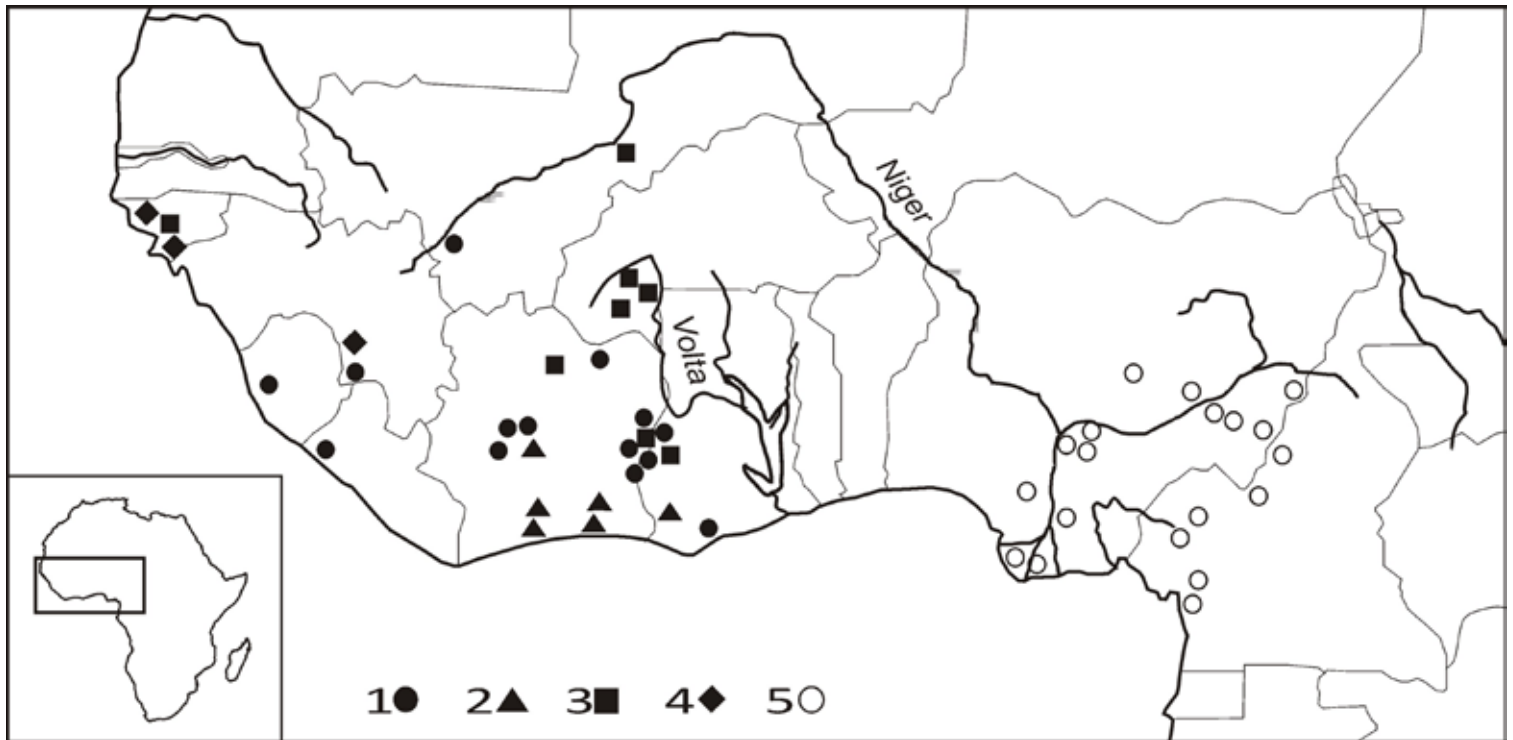


Fig. 2. Spatial distribution of horizontal masks. Linguistic groups 1. Mande, 2. Kwa, 3. Gur, 4. West Atlantic and 5. Benue area. (From a map in Pinault-Paradis 2001.)

To summarize:

- this mask and the men who control it are linked to associations such as the *Komo* and *Do*, and to the Mandé diaspora;
- the mask is always associated with iron working and a group close to political power;
- there is no brutal clash between Islam and an older religion: the degree of porosity and possible association between both religious practices are important;
- the language of the mask in action is bamanakan, whether in Baule country (central Côte d'Ivoire) or on the western coast of Ghana.

Analyses thus demonstrate that the occurrence of such a mask (a term that encompasses form, music, dance and the social group in charge of the mask and its display) stems from the expansion, political influence and commercial networks of the ancient Kingdom of Mali.

B. At the crossroad of several cultural boundaries: plant masks in north-western Burkina Faso, Christianity and Islam

The very precise location, along the southern edge of the Sahara, of colourful geometric decorations on masks, textiles, leather (Frank 1987), etc., could be the consequence of contacts with the iconography of Islam, which usually

forbids human and animal representations. A first thing to note is that the ethnic affiliation of the people using these masks – which usually determines their attribution in collections – bears no relationship to the iconography of the artworks.

The particular example of plant masks from Burkina Faso and their encounter with Christianity and Islam allows us to go a step further. Originating probably from the Mandé, and settling before the 15th century in what is today the north-western part of Burkina Faso, the San (or Samo), a society long without masks, adopted the *su* cult of their Nuna neighbours in the 18th century and, subsequently, the type of masks used in the cult (Ky 1994). Henceforth the iconography of these masks sometimes includes visual symbols of the religions – Christianity and Islam – with which their users coexist. For protection? To coexist in peace? Or to signal a desire for syncretism? The most recent form of this ‘meeting’ is a church whose architecture includes the form of the mask (Fig. .)!

C. Art and first globalization: creativity inspired by the distant Other

Just as Western societies ‘imported’ African sculptures very early (in the mid-15th century in Brussels), African societies from the Atlantic coast discovered the religious and secular iconography of Western societies. The Chris-



Fig. 3. Plank masks, Burkina Faso. 1. The gouabognin mask. 2. The missiribagnin (mosk mask). 3. Church of Boni. (Photos © J. Ky.)

tian art associated with the first Christianization of the Kongo area is a famous example, as well as the Luso-African ivory sculpture of Sierra Leone, which resulted from a Western demand. But the transfer and adoption of forms that affected folk art are much more difficult to highlight. A major difficulty is the lack of specific information about these artworks, always considered as ethnic productions, whatever the time at which they were created. Yet this time factor is crucial, as illustrated by the example of funeral figurines from southern Ghana and south-eastern Côte d'Ivoire.

In this case, a confrontation of three categories of sources helped highlight a popular creativity driven by contacts between Europe and Africa from the 16th century to the 20th century (fig. 4):

- historical sources (travellers' accounts; Barbot 1992, de Marees 1987): from 1601 onward, several descriptions of coastal societies evoke sets of terracotta figurines, painted and richly dressed, near forts;
- 'artistic' and ethnographic sources: several hundred figurines were collected in south-western Ghana and south-eastern Côte d'Ivoire and accumulated in museums and collections. Their generic attribution is 'akan' or 'ashanti', but they are also named after the people of the region from which they come. At the start of the 20th century, they were clearly related to a funerary ritual dissociated from the burial context;

- archaeological sources: the abundance of European objects always associated with them in the 11 excavated sites proves that they are post-15th century.

Methodologically, it is of utmost importance to restrict the analysis to figurines precisely located during excavations (fig. 5), surveying (fig. 6) or plundering. This drastically reduces the corpus, but allows work on real data. The mapping of the funeral figurines (fig. 7) ultimately situates them in a very limited zone of the 'akan area': to the south of the Ashanti Kingdom's territorial control, along the coast, as well as in south-eastern Côte d'Ivoire, a region beyond the control of the Ashanti Kingdom.

Next, a broad mapping of second millennium West African statuary shows that between the abundant production of the societies of the Niger basin and its tributaries and the area where the figurines evoked above are found, there is nothing: not even a trace of terracotta sculpture. These southern small terracotta objects with very finely worked face and hairstyle but crude body (once covered in cloth) appear thus as an isolated occurrence. A long-term analysis of historical sources allowed mapping of the logic and the traces of this first globalization (figs. 8 and 9). Indeed, the places where the figurines were discovered are always associated with gold extraction sites and the possible routes along which gold was delivered to forts and smuggling ports along the coast.

Finally, to make sense of the figurine-gold trade asso-

ciation, archaeological and art history methods and tools have to give way to classical historical tools for studying the visual display of Christianity in Portugal in the 16th century, modes of evangelization, religious beliefs and practices of the ancient African societies on the coast, as well as the new social constructions that a permanent Portuguese presence generated.

It thus appears that this form of plastic creation is in no way borrowed from a Western model; neither is it a hybrid, since no prior trace of funeral sculpture has been found in these regions despite the existence of wood sculpture. It is a creation, spawned by the meeting and subsequent peaceful coexistence, until the mid-17th century, of two religious systems, Christianity and 'animism', whose primary role was to reassure their followers by finding and providing the means of avoiding the pitfalls of a very uncertain future. This generated a multiplication of protective saints among the Portuguese (chapels proliferated exponentially in Iberia) and the development, within coastal African societies, of geomantic practices integrating Christian elements around the spirits of the dead (Polet 2001; L'Haridon & Polet 2005). The highly festive rituals (parading statues of saints, dances, music, chorus singing) of Counter-Reformation Catholicism, the induction of honoured followers into the caretaking and ritual dedicated to statues imported from Portugal (Saint Anthony and Saint George), associated with the mystery of the resurrection, doubtlessly facilitated the emergence of a ceremony linking funeral statuary to parades inspired by public Catholic ceremonies.

II. THE DANGERS OF INTERPRETATION

Applying these new approaches to objects categorized as 'artworks' may provide crucial information about other realms than those directly connected to their primary role in society. Yet rigour forces us to keep in mind that a form can spread and become a vehicle for a different 'ideology' than that with which it was initially associated,³ – and that an ideology can exist without material support,⁴ or 'lose' it.

Regarding artworks recovered from archaeological sites, is it possible to go beyond characterization and truly grasp their role within a site or the society that produced them? No! The most straightforward critic of the false



Fig. 4. Old postcard illustrating a *mmaso* from the South-East of Ivory Coast, published by Robert Soppelsa (<https://africa.uima.uiowa.edu/topic-essays/show/28?start=8>).



Fig. 5. Excavation of an old funerary altar (*mmaso*) at Ngaloa (Ivory Coast). (Photo © J. Polet.)



Fig. 6. Old funerary altar (*mmaso*) in the region of Krinjabo (Ivory Coast). (Photo © J. Polet.)

3 The case of the swastika, the gammadion cross native to India, is a poignant illustration.

4 Certain old forms of Protestantism, for example.

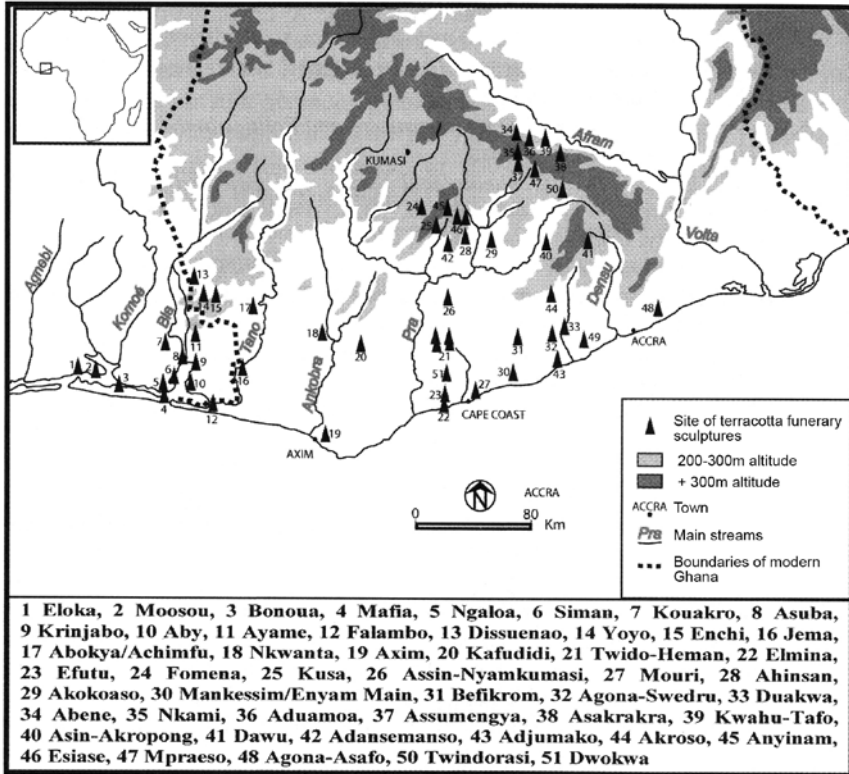


Fig. 7. Distribution of sites with funerary terracottas in the Gold Coast. (Map © N. L'haridon & J. Polet.)

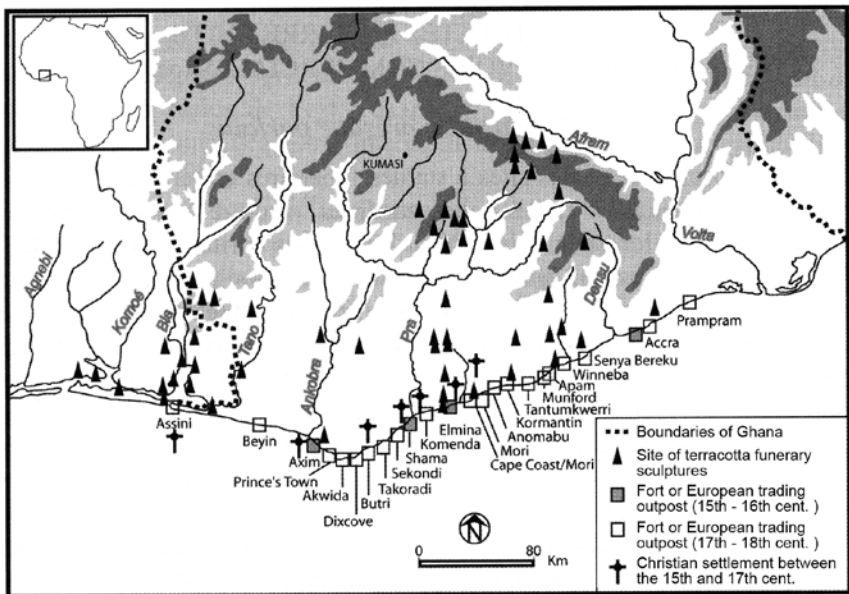


Fig. 8. Distribution of sites with funerary terracottas and European forts. (Map © N. L'haridon & J. Polet.)

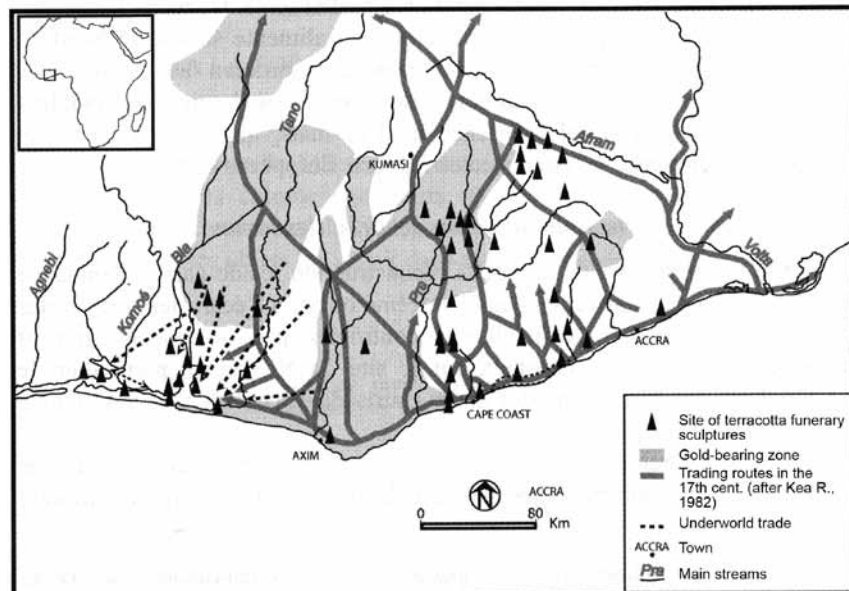


Fig. 9. Distribution of sites with funerary terracottas, trade roads and main gold extraction zones. (Map © N. L'haridon & J. Polet.)

logic underlying the inference of function from form has been made by Leroi-Gourhan in *Les Religions de la Préhistoire* (1964: 2):

‘Suppose an intelligent being incapable of communicating with us studied European piety by visiting churches. In them he would see lambs, a donkey and an ox, many people tortured, whipped, wounded, dying, lying on tombs; what image of Christian piety would endure? How would he pass from the deceptive superficiality of representation to the mystical depth of concepts?’

An interdisciplinary approach to objects broadens horizons and can certainly reduce ignorance, but – and this is one of its limits – ruminating over fragmented data can hardly lead to absolute certainty.

REFERENCES

- Barbot, J. 1992. *On Guinea. The Writings of Jean Barbot on West Africa, 1678-1712*. London: The Hakluyt Society, 2 vol., 585 p.
- Boutin, P. 2007-2009. ‘Les masques “Krou” de Côte-d’Ivoire : de nouvelles sources d’information’. *Afrique: Archéologie & Arts* 5: 7-26.
- de Marees, P. 1987. *Description and Historical Account of the Gold Kingdom of Guinea (1602)*. Oxford: British Academy/Oxford University Press, 272 p.
- Fagg, W. 1964. *Afrique, 100 tribus, 100 chefs-d’œuvre*. (Musée des arts décoratifs, Palais du Louvre, Pavillon de Marsan, 28 octobre-30 novembre 1964.) Paris: Musée des Arts décoratifs, 66 p. + 100 pl.
- Frank, B.E. 1987. ‘Open Borders: Style and Ethnic Identity’. *African Arts* 20 (4): 48-55, 90.
- Guggisberg, F.G. (ed.). 1925. *Visit of His Royal Highness The Prince of Wales to the Gold Coast Colony*. U.S. Government Printing Office, 242 p.
- Ky, J.C., 1994. ‘Des Masques en pays san (Burkina Faso) : recherche des origines à travers l’histoire, le culte et l’art’. Thesis, Université de Paris I Panthéon-Sorbonne, 521 p.
- L’Haridon, N. & Polet, J. 2005. ‘Les statuettes funéraires en terre cuite de la Côte de l’Or témoignent-elles d’une première christianisation ?’ *Journal de la Société des Africanistes* 75 (2): 64-85.
- Leroi-Gourhan, A. 1964. *Les Religions de la Préhistoire (Paléolithique)*. Paris: Presses universitaires de France (series ‘Mythes et Religions’, no. 51), 156 p.
- McNaughton, P. 1974. ‘Islam and Tribal Art in West Africa by Rene A. Bravman’. *African Arts* 8 (1): 72-74.
- McNaughton, P. 1987. ‘African Borderland Sculpture’. *African Arts* 20 (4): 76-77, 91-92.
- McNaughton, P. 1991. ‘Is there History in Horizontal Masks? A preliminary response to the dilemma of form’. *African Arts* 24 (2): 40-53, 88-90.
- McNaughton, P. 1992. ‘From Mande Komo to Jukun Akuma: Approaching the Difficult Question of History’. *African Arts* 25 (2): 76-85, 99-100.
- Olbrechts, F.M. 1959. *Les Arts plastiques du Congo belge*. Brussels: Éditions Érasme, pp. 29-35.
- Perrois, L. 1966. ‘Note sur une méthode d’analyse ethnomorphologique des arts africains’. *Cahiers d’Études africaines* 6 (21): 69-85.
- Pinault-Paradis, E. 2001. ‘De la forme à l’histoire. Les masques heaumes horizontaux à l’ouest des Volta : étude comparative, plastique et sémantique’. Doctoral thesis, Université Paris 1 Panthéon-Sorbonne, 3 vol., 614 p.
- Polet, J. 2001. ‘Rendre aux peuples d’Afrique, par l’Histoire des arts, leur place dans l’Histoire’. *Cahiers d’Histoire* 82: 9-19.
- Wingert, P.S. 1972. ‘Style Determinants in African Sculpture’. *African Arts* 5 (3): 37-43.

Further reading

- Laude, J. 1959. ‘En Afrique noire : arts plastiques et histoire’. *Annales. Économies, Sociétés, Civilisations* 14^e année (4): 640-661.
- Mark, P. 1998. ‘Est-ce que l’art africain existe ?’. *Revue française d’Histoire d’Outre-mer* 85 (318): 3-19.
- Mark, P. 2007. ‘Towards a Reassessment of the Dating and the Geographical Origins of the Luso-African Ivories, Fifteenth to Seventeenth Centuries’. *History in Africa* 34: 189-211.
- Ravenhill, Ph. L. 1996. ‘Africa: Art and Aesthetics’. In J. Turner (ed.), *The Dictionary of Art*. London: MacMillan, vol. 1, pp. 230-233.
- Ravenhill, Ph. L., Mudimbe, V.Y., Drewal, H.J. & Littlefield Kasfir, S. 1992. ‘More on “African Art and Authenticity”’. *African Arts* 25 (4): 18, 20, 22, 24, 26-28, 30, 100-103, 107-108.
- Vansina, J. 1984. *Art History in Africa: An Introduction to Method*. London: Longman, 233 p.

ETHNOARCHAEOLOGY

Diane Lyons¹

INTRODUCTION

Ethnoarchaeology investigates the relationship between contemporary people and their material culture in ways that can help archaeologists interpret the archaeological record. Without a systematic, empirically based and cross-cultural understanding of how contemporary people use spatial and material culture, we have little chance of developing, let alone testing, archaeological theory and interpretations of how people did so in the past. Ethnoarchaeological studies cover an enormous range of topics and this approach can be used with any archaeological theory. Experimental studies are included as ethnoarchaeological research only when they are conducted in an ethnographic context and are not restricted to laboratory-based research.

I. ANALOGICAL REASONING

A major contribution (but not the only purpose) of ethnoarchaeological research is to develop analogies (David & Kramer 2001). Analogies are interpretations based on observable practices that produce or are associated with material practices in contemporary societies (*the ethnographic source*) that are compared with and used to interpret material evidence produced by non-observable practices that are found in the archaeological record (*the archaeological subject*) (Table 1). Good ethnoarchaeological practice never assumes that the past is identical to the present because it is not. The purpose of ethnoarchaeological research is to compare the ethnographic source with the archaeological subject to determine how and why they are similar and different; we do not impose the present onto the past. This comparative process of moving back and forth between source and subject is important in developing good research questions and in producing strong archaeological interpretations about the past.

Ethnographic analogy is based in inductive reasoning and there is always the chance that it can be wrong. Nevertheless, Alison Wylie (1985) shows that analogy is important to most sciences and that without ethnographic analogy archaeologists can say very little about the hu-

man past beyond its description. Despite concerns, Wylie (1985: 107) states that ethnoarchaeology is one of the most important tools in the archaeologist's repertoire because it is the only way that we can observe and query people directly about their material practices and from these observations develop material expectations that can be tested against the archaeological record.

There are two types of ethnographic analogy: the direct historical approach and general analogy. The direct historical approach is discussed by Ann Stahl (p. XX). This approach assumes an historical continuity between source and subject. Nevertheless, historical connections between contemporary and past people must be demonstrated and not assumed, and the source and subject must be compared for similarities and differences. General analogies are made between unrelated source and subject populations, but the compared groups must share several common boundary conditions such as similar ecological settings, subsistence practices, and social organization. Both types of analogy are strengthened by using multiple lines of evidence that develop the number of relevant connections between the source and subject, and which help to explain why present and past contexts are similar and different. Differences can also be relevant to an analogy. New types of products may be introduced into a region through trade or contact, and be incorporated into a culture's existing system of values and practices. For example, plastic beer brewing containers may replace pottery vessels in a contemporary bride's dowry. The introduction of plastics has economic consequences for potters, but the plastic brewing vessel may be valued similarly to former pottery ones as appropriate for dowry and it is used similarly to its pottery counterpart in household feasting events. The plastic vessel is incorporated into existing systems of value and reproduces certain cultural practices despite being an industrially made product. Nevertheless, new products do contribute to culture change. For example, plastic vessels can have greater social value than ceramic ones in a bride's dowry if the adopting society perceives industrial products as constituting a 'modern' household. This perception can drive material change in other categories of household goods.

It is essential that the historic context of the ethnographic source for direct historical or general analogies is

¹ Anthropology and Archaeology Department, University of Calgary, Canada.

determined as fully as the available data allows. Historic context includes (but is not restricted to) the critical evaluation and use of historic records, oral histories and oral traditions, records of environmental and cultural change, changes to political, social and economic organization, and the impact of colonialism, market globalization or other relevant events that have introduced, modified or maintained contemporary practices. Determining historic context ensures that the ethnographic observation of any particular material practice is understood in contemporary practice before it is compared with the archaeological subject.

The quality of ethnoarchaeological research should also be evaluated by the length of time that the researcher spent in the field, how data were collected in terms of the use of interpreters, field methodology, sample size and participant composition by age, gender, status, level of knowledge etc., and the theoretical perspective of the study. This information must be provided in research reports and publications.

II. FIELD METHODS

Ethnoarchaeological field methods are drawn from ethnography, archaeology and other social and physical sciences in order to investigate a given subject from a multi-disciplinary approach and to assemble multiple lines of evidence to provide substantive conclusions. The primary method in ethnoarchaeology is interview and observation. But first it is essential that the collection of ethnographic information is guided by ethical practice.

A. Ethics in field research

As for archaeologists, ethnoarchaeological research projects may require federal, regional and local government permits that must be obtained before conducting research. Ethical practice means that researchers treat the communities and people who participate in their project with respect. Research should never expose participants to political, physical, social or economic harm and these factors should be considered when developing the research programme. Prior to interviews, participants should be made aware of the purpose of the project and what they will be asked to do so that they can make an informed decision about their participation. Researchers must tell people the purpose of the project, the identity of the principal investigator and other project members,

and how photographs and information are going to be used and reported (e.g., academic journals, websites on the internet). Participation is always voluntary and people must be informed that they can refuse all participation in a project without any consequences or they may refuse to answer specific questions or to have their photo taken during interviews. Participant anonymity should be offered and ensured by using pseudonyms, a numbered code for each participant, or by reporting data in aggregate form (e.g., twenty-five individuals responded 'yes' to interview questions 1, 2 and 3). Many archaeological and anthropological associations have ethical guidelines that are posted on their websites.

B. Collecting data

Ethnoarchaeologists use a combination of structured and unstructured interviews in most aspects of data collection. Structured interviews are comprised of questions determined by the researcher in advance of the interview and produce comparable data from multiple interviews. Unstructured interviews are still 'structured' by the researcher's preparedness. For example, in a study of pottery-making a researcher anticipates asking all participants the same questions about specific practices in each stage of pottery-production. However, the interview remains fluid (or unstructured) in the sense that questions will develop in the course of individual interviews because different people have different levels of knowledge, experience, willingness to participate in the study, etc. This information is important to understanding variability in material practices and it can contribute new insights to pursue in the course of a field project.

Random samples are useful for some types of research, but non-random sampling is more common in ethnoarchaeology because we rely on people's willingness to participate or we are dealing with small samples. For instance, a study of blacksmiths creates a sub-group of the population for interview that may be very small. The researcher may further select smiths of different ages and skill levels for their research. This selection is then subject to people's willingness to participate. The strategy is appropriate to meeting research goals but the sample is not random. What is important is that the sampling design suits the goals and ethics of research.

Successful interviews will happen when the researcher is prepared and shows genuine interest in the participant's responses. Although you may ask a large group of people



Fig. 1. Ethnoarchaeology in practice. (Photo of author © J. Casey.)



Fig. 2. Ethnoarchaeological research takes time. Make appointments with people in advance of interviews to ensure that they are willing to participate and understand the time commitment involved. (Photo © D. Lyons.)



Fig. 3. Ethnoarchaeology of iron working is an example of long-term and extensive ethnoarchaeological research in sub-Saharan Africa. This research provides cross-cultural information of social, economic, technological and symbolic information on iron smelting practices. This body of ethnoarchaeological research contributes significantly to understanding African metallurgy and technological accomplishments, political economy, belief systems and the history of complex societies across sub-Saharan Africa. (Photo © D. Lyons.)

the same questions, it is useful to interview people individually. Some people have rich information that they are less willing to discuss in a group because of their interpersonal relationships. For example, people may agree with a senior person's answer in a group interview but provide different responses in an independent interview. Nevertheless, there are times when group interviews are revealing or necessary. Elders may remember more (or correct one another) in a group discussion, or a husband may prefer to be present when female members of a family are being interviewed.

Recording methods can include (often simultaneously) note taking, audio/video recording, photography,

mapping houses, measuring artefacts and other forms of data collection (**fig. 1**). Multi-tasking in interviews is normal but distracting. Memories of events are unreliable so good note-taking is essential and it is advisable to write up the final notes of interviews at the end of the day to avoid the problem of deciphering your personal hieroglyphics weeks later. Ethnoarchaeological field research takes patience and time. Weekend fieldwork or a two-week study working in a culture or place with which the researcher is unfamiliar will produce data, but the reliability of the interpretation of that data and the variability that comes from long-term studies are seriously compromised. Long-term projects over sev-



Fig. 4. Globalizing markets in northern Ethiopia provide opportunities to test and expand interpretations of globalizing processes used in archaeological research. (Photo © D. Lyons.)

eral research seasons develop the researcher's personal knowledge and experience with material culture and its use in different contexts. Even in short studies (a single season), repeat visits with participants build trust and relationships. Expect to be treated with suspicion (usually kindly) as an outsider in the community. It takes time for people to decide what they will or will not divulge to an outsider, and do not be surprised if people change their initial answers after a few visits! Do not be naïve. People may deceive you consciously or unconsciously for their own reasons. The reliability of information comes with an increasing sample of interviews and observations that provide consistent information including on the range of variability of particular practices.

There are many ethnographic field manuals available on interview and field methods (e.g. Bernard 2011). It is optimal to interview people in their own language, but this is not always possible in situations where there are multiple languages or dialects spoken in a research area or when interviews address sensitive information that require the intonations of respect that only a native language-speaker can provide. It is the responsibility of the researcher to work closely with interpreters to make sure that they understand the goals of the project, the questions being asked, why questions are asked in a certain way, and ethical protocols.

Observation is an important aspect of ethnoarchaeological fieldwork and usually involves an interview component (**fig. 2**). Observation of a process (e.g., processing

crops, preparing food, making pots) also involves the use of other recording methods including imagery. A good digital camera is essential and images can be as important to documenting research as interview notes. Clear images of practices are required for publication. Make sure that participants are comfortable being photographed and understand that images can appear in journals or on websites. If people request anonymity do not photograph their faces (or keep faces in shadow). People are often delighted to view images in the playback mode and then they know what images you have taken. Providing people with copies of a few of the best photographs is usually appreciated. Photographs of artefacts and processes can be used in subsequent interviews as memory devices and resources to further discussion. In some contexts you may have the opportunity to participate directly in the process being investigated. There is nothing that compares to direct experience.

Compensation or a gift to informants should be determined in advance and according to local values. Being too generous in poor regions can upset relationships for local researchers who do not have access to the same funding. If there is a local gift that people bring as guests to someone's home, then this may provide a good compromise (e.g. coffee, sugar, salt, fruit). In cases where people work with your project for an amount of time that takes them from their own work, they should be compensated according to the local wage.

C. Analyzing data

Types of analyses will depend on the type of data collected and many of these analyses are similar to those used to study archaeological materials, (e.g., petrographic analysis of pottery, use-wear of stone tools). Ethnographic data can be organized into databases (e.g. Microsoft Office Access) or software programs that are specific to organizing ethnographic text (e.g. NVivo). A simple and inexpensive method is to organize data on a spreadsheet program such as Windows Microsoft Office Excel. This will allow for simple tabulations and comparisons but it may require several spreadsheets to organize different sets of data.

In terms of content, the minimum level of information that all surveys need to capture is as follows (**table 1**)

COMPARATIVE APPROACH: BUILDING STRONG ANALOGIES

ETHNOGRAPHIC SOURCE

- *historically situate ethnoarchaeological data from interview/observation:*
 - o critically evaluate data in comparison with oral histories of practice(s) under study
 - o critically evaluate data in comparison with historic documents of practice(s) under study
- *determine how the practice(s) under study is expressed materially and spatially*
 - o determine variability in both the practice and its material expressions
- *examine multiple lines of evidence*
 - o identify related practices to the practice being investigated
 - o determine how these related practices are expressed materially and spatially (e.g., for example: a study of pottery making is related to other social and economic factors: how is the potter’s economic status expressed in their domestic compound relative to other people’s compounds, how is pottery used in culinary practices, where are different types of pots located in households, etc.)

ARCHAEOLOGICAL SUBJECT

- *compare the source with the archaeological subject*
 - o determine similarities and differences between source and subject
- *determine how similarities and differences are connected in relevant ways*
 - o e.g., *how are similarities relevant* (e.g., do the material expressions of the practice(s) under study share the same spatial context, function, symbolic role or context of production such as the presence of special workshops, shared *chaînes opératoires*)
 - o Compare multiple lines of evidence investigated in the context of the ethnographic source to strengthen relevant connections between the source and subject.
 - o e.g., *how are differences between source and subject relevant* (e.g. are changes in pottery raw materials related to other environmental, social, economic or ideological changes evident from other archaeological data)
 - o Are the similarities and differences *not* connected in relevant ways e.g., the source is not an appropriate analogy to infer past practices.



Compare source and subject to determine relevant connections between them. The stronger the relevant connections the stronger the ethnographic source is in inferring these practices in the archaeological record.

Table 1. How to construct strong archaeological inference. (© D. Lyons.)

OTHER CONTRIBUTIONS

In addition to analogies, ethnoarchaeological research contributes to the development of African history, particularly those of everyday people (**fig. 3**). Ethnoarchaeological research is important to heritage conservation because it documents both tangible and intangible forms of cultural knowledge including how African people perceive and constitute their social relationships in material culture, spaces and landscapes. This information is of broad interest to social scientists (including archaeologists) in understanding human variability, cultural resilience and how people consider and incorporate material and technological change at local and global levels in contemporary societies (**fig. 4**).

REFERENCES

Bernard, H. R. 2011. *Research Methods in Anthropology*, fifth edition. Plymouth, UK: AltaMira.

David, N. & Kramer, C. 2001. *Ethnoarchaeology in Action*. Cambridge: Cambridge University Press.

Wylie, A. 1985. ‘The reaction against analogy’. *Advances in Archaeological Method and Theory* 8: 63-111.

POTTERY AND ORAL HISTORY IN THE FARO (NORTHERN CAMEROON))

Alice Mezop Temgoua-Noumissing¹

INTRODUCTION

As we know, the past and the present are closely linked. Archaeologists are therefore well advised to look to the present in their attempt to bring the past to life.

In this contribution, I intend to examine an aspect of this relationship between present and past. To do so, I will compare various hypotheses concerning the chronological sequence of a region in Central Africa from the 11th century to today, through a history based on current pottery traditions and on oral tradition. In doing so, I will demonstrate the potential of a historical and comparative approach in the interpretation of archaeological remains.

I. ETHNOGRAPHIC ANALYSES AND ARCHAEOLOGICAL INTERPRETATION: METHODOLOGICAL PRINCIPLES AND PRACTICAL ASPECTS

The Faro region, named for the river that runs through it and situated in the north of Cameroon, seems to demonstrate historical and cultural continuity in a number of fields (architecture, pottery, languages, agriculture, animal husbandry, kinship systems, ceremonial calendar, and religious beliefs) which makes it possible to establish links between archaeological contexts and modern populations (Mezop Temgoua 2011). To study this, I have applied a method inspired by the principles of the direct historical method (see Stahl 1993, 2005, Wylie 1988). Specifically, three different approaches were used. The first is ethno-historical² and focusses on establishing an initial model of settlement for the area, and the location of ancient sites known to oral tradition. The second focusses on the study of a collection of current pottery from the region documented in 1995. This involves choosing descriptive variables, analysing their distribution and variability, and highlighting recurring traits that emerge from studying links among ceramics in the region today. In other words, it involves identifying regional traditions, their spatial distribution, and the social context of their production and consumption. The third approach has been to study the material culture found at archaeological sites, the context in which it was deposited, and associated radiocarbon dates. The results from these different approaches are then compared. Linguistic data will often

play a role, given their great capacity for providing insights on the past (see this volume, Bostoen, pp 257-260 and Ricquier, pp 261-263).

II. POTTERY AND ORAL HISTORY IN THE FARO REGION AND THEIR ARCHAEOLOGICAL IMPLICATIONS

Trends in the archaeological remains of the Faro region from the 11th century AD onwards allow us to make observations concerning its settlement history. Some of these hypotheses are juxtaposed with information provided by current pottery and oral traditions on the history of the Faro.

A. The archaeological sequence in the Faro

Three distinct phases of occupation are recognized in the Faro valley (Mezop Temgoua 2011): during approximately the 11th century AD (1050-1270 cal AD) (phase 1), agro-pastoralist-fishermen lived along the course of the Faro River, in Lamordé and Farkoumo and/or around current towns, in villages characterized by the presence of potsherd pavements. They produced pottery of the TD1-tradition (pottery traditions are categorised using 'TD') of which the decoration predominantly consists of impressions made by plaited flat fibre roulette (FSR) and twisted cord (TGR) (**fig. 1**). They used ochre in burial preparations for their deceased.

From the early 15th century AD (1400-1480 AD) (phase 2), the villages remained situated near waterways, but a unique pottery, associated with pipes and spindle whorls, appeared: the TD2 tradition, characterised by the use of *Blepharis* sp. cobs for making impressions, and polished slipware (**fig. 1**). This tradition seems to supplant TD1 production in Farkoumo and Lamordé. These innovations might point to instability linked to north-western influences.

Tradition TD3 (**fig. 1**) existed between 1650 and the beginning of the 20th century (phase 3), a period which saw the arrival of the Foulbé and the beginnings of European colonisation. Its ornamental register included FSR and TGR roulette impressions, as well as *Blepharis* sp. cob impressions. The TD3 tradition is common in material from upper excavations levels (Pantou, FA5/2, FA5/12, Tchamba) and found on the surface in abandoned villages (in Bogdou 1, Katchala Voma, Yelba) in the foot-

¹ Arts and Archeology Department, University of Yaoundé 1, Cameroon

² This consists of studying a population using oral documents.

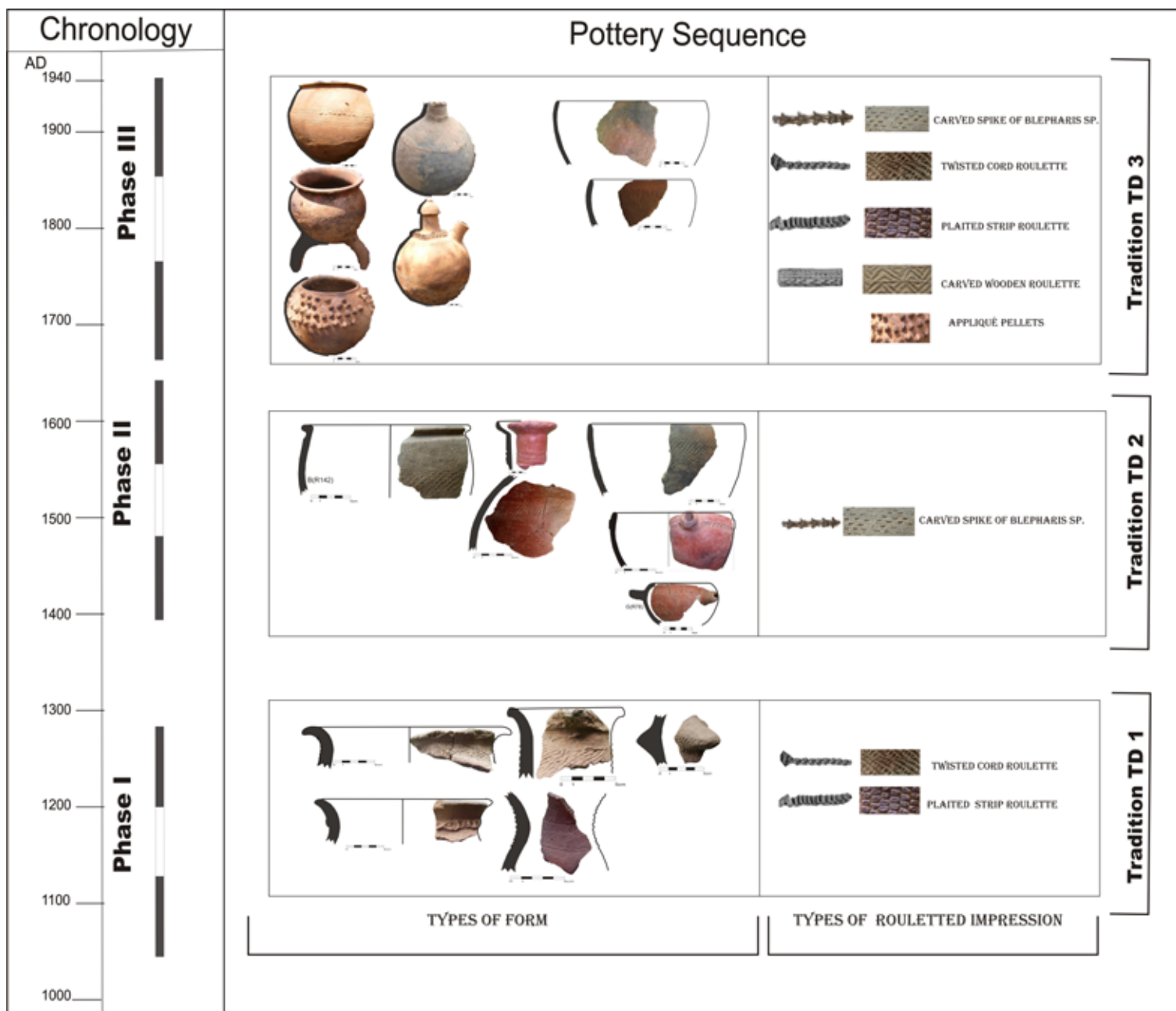


Fig. 1. Sequence of pottery traditions in the Faro between the 11th century and today. (Drawings by Alice Mezop Temgoua.)

hills between the left bank of the Deo and the Alantika Mountains, in association with significant metallurgic remains (*tuyères*, bricks, and slag). This tradition is still alive today among those who live in the mountains, and is known as ‘montagnard decoration’. The fact that TD3 decoration combines the features typical of the first two production traditions (Bogdou 1 FA5/2, FA5/12, Pantou, Tchamba) suggests that the groups at the origin of these traditions lived side by side. The TD3 tradition has two major innovations: the use of appliqué buttons, and pots of specific forms (site of Pantou, Bimlerou village) (these pottery styles are very common in eastern Nigeria, which

reinforces the idea of ancient links between the Faro and this region), as well as the generalisation of TGR-impresions (Woulba village). The presence of this TD3 pottery tradition in ancient mountain sites located both west and east of the Faro River reflects a relationship between the producers in the two regions (fig. 3). They were geographically close in the recent past, probably along the banks of the Faro, where the oldest traces of ‘montagnard decoration’ are found. This suggests movements from the plains to the mountains, which in fact reinforces the importance of archaeological remains in the mountains and their rarity in the plains during this period.

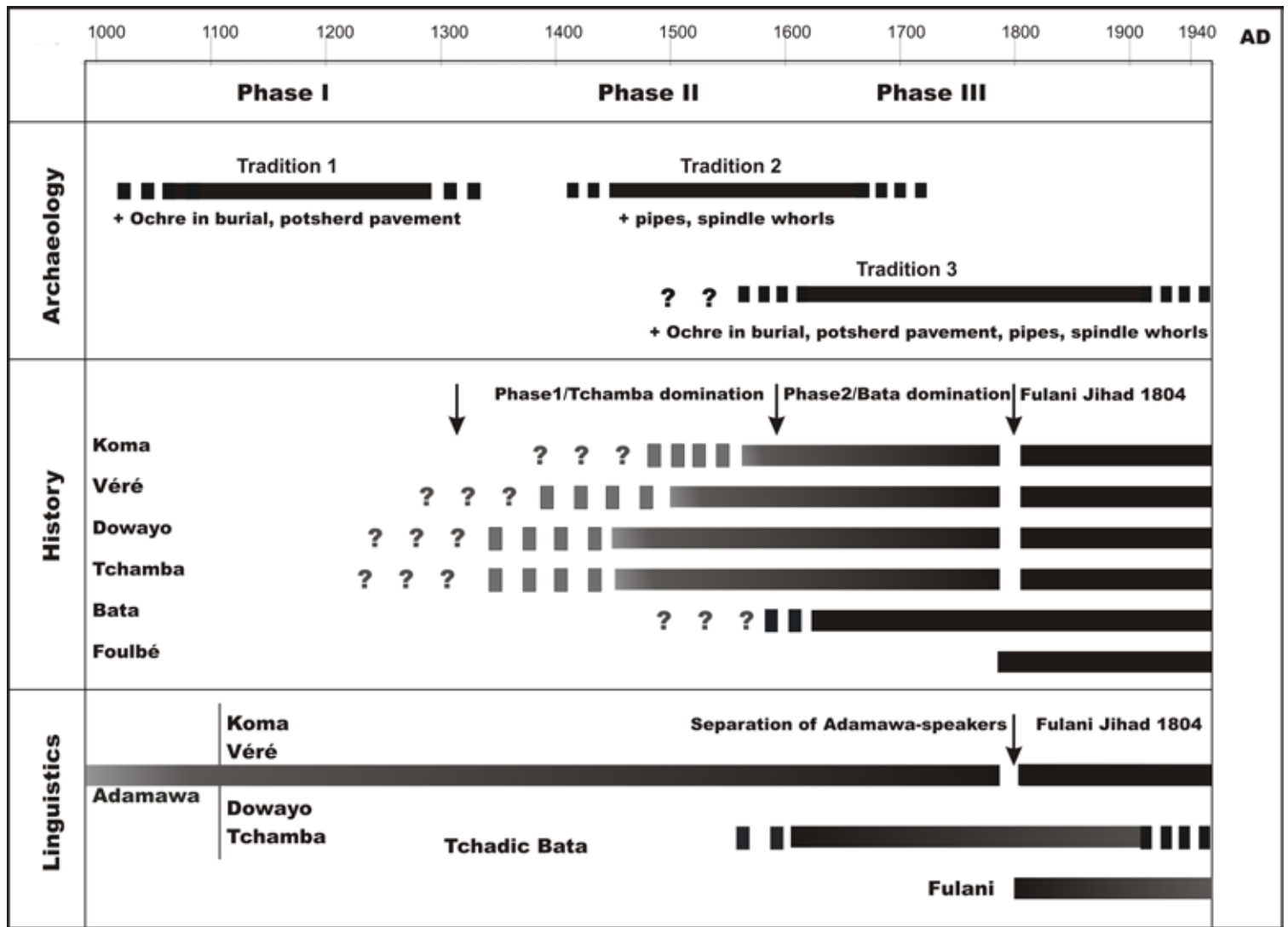


Fig. 2. Comparison of data on the history of Faro from archaeology, ethnohistory, and linguistics. (Drawings by Alice Mezop Temgoua.)

B. Discussion and conclusions

By combining all available data, we see that there are three historical phases. For phase 1, archaeology situates early settlement between the 11th and 13th centuries AD. According to oral tradition, this period would end towards the 16th and 17th centuries (fig. 2). According to oral sources, Farkoumo and Lamordé were inhabited by the Tchamba and Nyem Nyem (including the Koma, the Dowayo, the Vere, the Dii, and the Fali). This ancient cohabitation of Tchamba and Nyem Nyem is confirmed today by the continuity in the localisation of villages inhabited by these groups and by the many cultural traits they share. We might have hoped to distinguish them by the pottery from these sites, but the ceramic remains are not very informative on this topic. This might be explained by the long cohabitation of these groups or by the fact that the decoration of pots was ethnically not very significant. Beyond these paradoxes, both archaeology and oral

history support the idea that the inhabitants of the older villages were largely ancestral to the current population (continuity of TGR and FRS decorations, funeral traditions using ochre, potsherd pavements, etc.) (fig. 2). The geographical location of the Adamawa-speaking groups in the Faro area and chronological estimates³ also support this hypothesis (fig. 3).

Regarding Phase 2, archaeology and oral data both indicate profound changes linked to north-western influences during this period (fig. 2). In the 17th century, the Bata from the plains of the north-west Benue took over indigenous villages on the banks of the Faro. It is tempting to equate Phase 2 sites in Farkoumo and Lamordé with the establishment of a new population. This is all the more tempting as it corresponds to occupation levels marked by the sudden emergence of an unknown pottery

3 Adamawa speakers have occupied the region for at least 4,000 years.

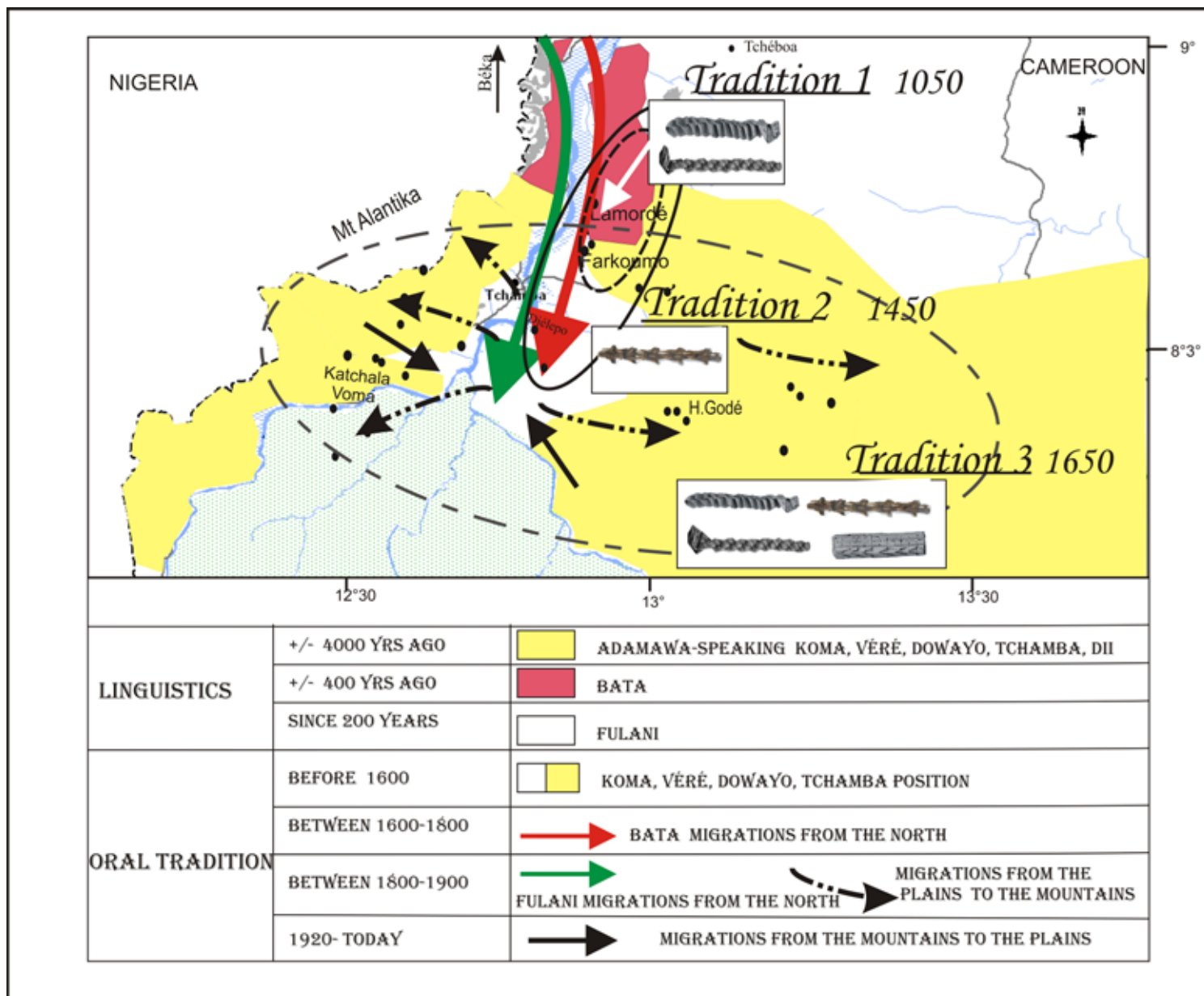


Fig. 3. Correlation of linguistic data and hypotheses derived from archaeology and oral history in the last millennium. (Drawings by Alice Mezop Temgoua 2011: fig.7.1, modified.)

decorated with *Blepharis* sp. cob (TD2), and of pipes and spindle whorls (fig. 2 and 3). The severe drought which struck the south of Lake Chad between the 15th and 16th centuries AD may have pushed the population to settle the region further to the south. While oral histories identify the newcomers as Bata, there is no clear archaeological evidence of Bata occupation. Gbwata-speakers are related linguistically to populations from the Mandara area, but *Blepharis* sp. cob impression decoration has never been documented in that region. On the other hand, it is currently impossible to identify material features that would distinguish Bata from other populations in the region. Note also that ethnohistory sets the arrival of Bata in the 17th century AD, while archaeology tends to place the

TD2 tradition well before that, somewhere between the 15th and 17th centuries AD (fig. 2). This minor difference may be the result of the different dating methods. With the exception of these two points, there is general agreement between the archaeological information and that offered by ethnohistory and linguistics (fig. 2). Indeed, the area of distribution of TD2 sites tends to be the same as that of villages inhabited previously and today by Bata and the distribution of the Chadic Bata language in the Faro (fig. 3). The producers of TD2 might therefore be the ancestors of Gbwata speakers, whose language would come from lands north of the Benue.

For Phase 3, the idea of a generalized occupation of the highlands by producers of the TD3 tradition is echoed in

ethnohistory (fig. 3). The mass installation of the Fulbé at the beginning of the 19th century is the most likely cause of the primary rupture in the history of the Faro region, but this does not seem to have had a direct influence on the pottery traditions of this period. So the development of appliqué buttons and of vessels of specific forms during this period might testify to a change in religious practices in the Faro, related to influences coming from the plains of Nigeria to the northwest, home to the largest development of ritual potteries in the region. A link might be established between the spread of twisted cord roulette impressions in the Atlantika area and the migrations of Véré artisans that are considered as the inventors of the present-day pottery style on the western side. The historical argument according to which the pottery production remained in the hands of local populations makes this hypothesis highly likely.

The objective of this case study has been to test the potential of analysis that combines oral sources, ethnographic pottery analysis, and archaeological remains in the analysis of the history of populations. One must observe, in this specific case, the great value of basing the reconstruction of the past on a comparative approach. The juxtaposition of different data sources shows that, in most cases, the results of ethnohistory and the study of the current pottery can explain those of archaeology and vice-versa. It can therefore greatly enhance the possibilities for reconstructing the past. The combined study of archaeological and ethnographic data has led to the establishment of a chrono-cultural sequence for the Faro over the last millennium. It has allowed me to demonstrate the potential of historical information contained in this category of artefacts. The other contribution concerns the question of identities. This research clearly illustrates the complexity of relationships between material culture and identities, and the caution needed when projecting current identities on the past, especially into the distant past.

In Africa, where such a crucial question as the history of human settlement is often approached using only oral

traditions and a few recent texts, this type of procedure seems indispensable.

Finally, I note that one of the difficulties of a multidisciplinary approach is that it requires a deeper understanding of the processes specific to each discipline, and that these must be pushed as far as possible without falling in the trap of an easy interdisciplinarity, which often leads to circular reasoning. At the same time, it is important to be aware that when conducting research, the results obtained from one discipline can influence the strategies developed in another.

REFERENCES

- Lane, P. 2005. 'Barbarous tribes and unrewarding gy-rations? The changing role of ethnographic imagination in African archaeology'. In A.B. Stahl (ed.), *African archaeology*. Oxford: Blackwell Publishing (series 'Blackwell Studies in Global Archaeology'), pp. 24-54.
- Mezop Temgoua, A. 2011. 'Archéologie, traditions orales et ethnographie au Nord du Cameroun : histoire du peuplement de la région du Faro durant le dernier millénaire'. Doctoral thesis, Université libre de Bruxelles.
- Reid, A. & Lane, P. 2004. 'African Historical Archaeologies: An introductory consideration of scope and potential'. In Reid, A. & Lane, P. (eds), *African Historical Archaeologies*. New York: Kluwer Academic/Plenum Publishers, pp. 1-32.
- Stahl, A.B. 1993. 'Concepts of time and approaches to analogical reasoning in historical perspective'. *American Antiquity* 58 (2): 235-260.
- Stahl, A. 2005. 'Introduction: Changing perspectives in Africa's past'. In A.B. Stahl (ed.), *African archaeology*. Oxford: Blackwell Publishing (series 'Blackwell Studies in Global Archaeology'), pp. 1-23.
- Wylie, A. 1988. "'Simple" analogy and the role of relevance assumptions: Implications of archaeological practice'. *International Studies in the Philosophy of Science* 2 (2): 134-150.

ARCHITECTURE

Victor Brunfaut & Jean-François Pinet¹

We will attempt to provide a summary of the conceptual and methodological bases for approaching African urban architecture and urbanism from a historical perspective. We will pay particular attention to the material dimension of architecture that can be seen, touched and measured today: existing built structures. We will consider this material as the evidence of a long-term historical process.

I. GENERAL FRAMEWORK

'[Architecture] means the moulding and altering to human needs of the very face of the earth itself...'

William Morris, 1881

A. Architecture is a complex cultural fact

Architecture is a complex cultural fact, the result of the activity of multiple actors, including the builder, the carpenter, the mason and (particularly in Africa) the inhabitant: it is a collective creation governed by a series of norms that codify its forms. These norms are passed from generation to generation.

B. Architecture is an object

A construction, whether it is a house, mosque or granary, is completely anchored in time and space (**fig. 1**). It is the expression of its time and of the society that created it. It is as impregnated with 'traditions' as any other man-made object. This 'bundle of traditions' includes architectural forms, building styles and techniques as well as references to elements beyond the sphere of building construction. For example, house decoration can evoke patterns found on fabric or pottery (see, among others, Huffman, this volume, pp. 180-186). Since built forms are the framework of human social life, they can become actual mental prisons: they become *structures* that are both supports and obstacles. Present-day architecture often reproduces that of the past, and perpetuates it.

C. Architecture is a language

Architectural space as well as the space within which the city, village or territory is located are charged with meaning: like a language, the spaces speak to us. Their

meanings are organised in layers that sometimes are superimposed upon, or contradict one another: this is the case, for example, with buildings that maintain an architectural form linked to a specific building technique when the latter has been replaced by another, more modern one.

Beyond the primary purposes of protection and shelter, architecture translates into built forms the aspirations of individuals and those of the society in general: lifestyles and forms of housing are expressions of these aspirations (for example, of the inhabitant's desire to 'belong' to a certain social class or group or to a certain 'modernity', and so on.). In other words, architecture also expresses its creator's status or that of their sponsor: it 'speaks' of power, of social position, of belonging to a 'group'...

D. Architecture is an instrument of power

Architecture, and built structures in general, are in this sense particularly sensitive to acculturation; they also constitute one of its vectors, through the impact they exert on lifestyles. These phenomena are fed by the transfer of ways of doing things, of 'models', from one social group to another – whether by simple commercial contact or by military or political domination. In Africa, colonisation was a particularly massive and destabilising 'transfer'. This historical process, through which architecture was used as an instrument of domination and power-projection in a 'territory' considered untouched, was also marked, for the agents of colonialism, by a process of discovering the 'colonised'. Like many other social realities, the architecture previously produced by the 'colonised' was very diverse and long described as 'immutable', primitive, timeless, outside of history. Today, African architecture and the African city are beginning to be considered objects of study in their own right. They are acquiring a history.

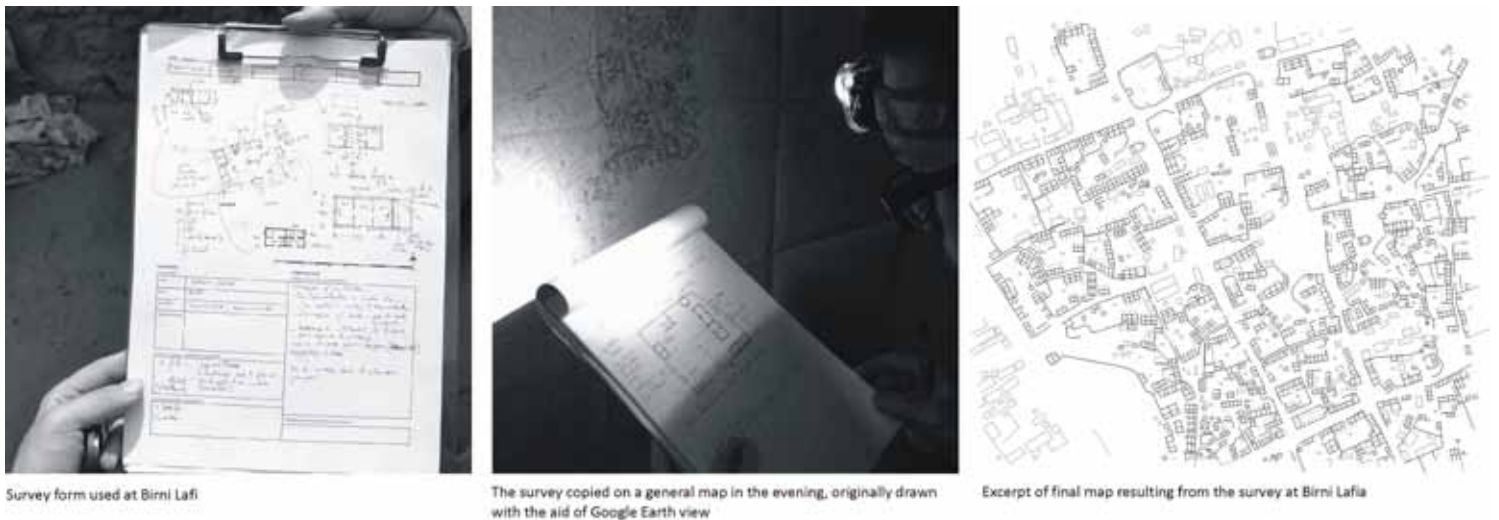
II. ELEMENTS OF METHOD: ARCHITECTURE AS PRODUCT OF HISTORY

Beyond the analysis of relevant literature on which all research is based (in our case, it covers historical, geographical, social and political aspects of the spaces that interest us), we will pay particular attention to analysing built structures from a historical perspective: how does a

¹ HABITER Study Center, Faculty of Architecture La Cambre-Horta, Université libre de Bruxelles, Belgium.



Fig. 1. 'Kouroukoutou' circular house at Birni Lafia, northern Benin. (Photo © J.-F. Pinet.)



Survey form used at Birni Lafia

The survey copied on a general map in the evening, originally drawn with the aid of Google Earth view

Excerpt of final map resulting from the survey at Birni Lafia

Fig. 2. Survey stages at Birni Lafia in 2013. (Photo © J.-F. Pinet et V. Brunfaut, plan © J.-F. Pinet.)

structure as it is currently observed in a given region provide clues to understanding the region's history and the contexts of its settlement? We will rely on a method analogous to that of reading. Like other categories of material culture, architecture can be considered as a language. It is composed of elements whose arrangement or combination is governed by rules, by a grammar: for example, how houses are grouped, or how the area in front of the entrance is used to prepare food... To this extent, studying the built structures of a village and the architecture of its houses improves our understanding of the history of the village and of its inhabitants .

A. Architecture is a spatial fact

Keep in mind the quotation of William Morris that opened this chapter: architecture is not just the built structure but

all the transformations to which humans subject their environment in order to adapt it to their needs (this is why we speak of 'anthropogenic' land or territory, transformed by humans). If our object of study will in most cases be the space of the town or the village – the ultimate anthropogenic terrain – we must always keep in mind that the village is linked to the fields and surrounding areas: they form a whole. From a historical perspective, anthropogenic territory over time becomes 'the environment' itself to which Morris refers; that is, the place of future transformations: the town or village becomes the 'nature' that humans transform. The town or village grows on itself, by building on what is already there; thus we can read in the urban fabric the persistence of structuring elements (a road, a built element of which the form persists) that shapes it.



Fig. 3. Interview with the imam of Birni Lafia, Suley Guero (94 years old). (Photo © V. Brunfaut.)

B. Reading urban facts

Reading the built environment (that is, anything ‘built or constructed’ by humans: houses, granaries, walls, etc.) may be performed according to two approaches, synchronic and diachronic. The first addresses the description of the contemporary built structure at the moment when it is described; the second considers the temporal dimension of the feature, across time. These two approaches are complementary and require specific tools and methods that can be adapted to specific realities in the field.

1. Synchronic analysis and its tools

Synchronic analysis involves describing the built ensemble in its current state. In a synthetic manner, this can be described as being composed of regular or ‘common’ elements (houses, compounds, etc.) and particular or specific ones (e.g. buildings having a public, symbolic or religious function). All these elements are arranged according to a system of open spaces: streets, avenues, squares, etc.² In general, the analytical scale is the neighbourhood, or that residential part of the town where housing or habitation predominates.

a) First tool: architectural survey

The architect’s main tool for describing built structures is the urban plan, which can be based on available documents such as aerial photographs, National Geographic Institute maps, land registers, and so on. (fig. 2). Today, aerial views with a precision that allows for the observation of a village’s built structures are freely accessible on the Internet. Analytical ambitions must be adapted to (human and material) means, available time, and of course to the possibilities of accessing buildings (access to habitation in particular requires tact and careful attention: one must introduce oneself and explain one’s goal without ever being overbearing). The survey aims at representing what is built: walls, poles, roofing, etc. It is carried out by drawing – plans, cross-sections, construction details – and measuring (even using makeshift units such as one’s own body, stride or arm span to measure, say, a house; this is sometimes less invasive and faster than alternative methods). The survey will later be transcribed to represent the structures themselves and/or the principles guiding their composition:

- construction materials and techniques;
- principles of composition: basic dimensional units, housing/habitation typologies, room layouts, etc.;
- classification of structures by typological series.

b) Second tool: ‘habitation survey’

The habitation survey complements the survey of architectural elements with regard to the use of spaces, in an attempt to represent furniture, utensils, and so on. It especially allows for an understanding of how people live in the space, the relationship between constructed spaces and family structures, and the use of objects.

c) Third tool: oral history

The survey will be usefully complemented by oral history (told by the people themselves) about the inhabitants and events, or what interests us more directly: the history of the house (fig. 3). Often tied to family history and personal trajectories, it teaches us a lot about migrations and reasons for settlement. Oral history also provides access to an essential element for understanding the dynamics of territorial transformation: the transmission of construction knowledge. This is a question of identifying the means and carriers (the builders) of knowledge, but above all the continuities and ruptures in this transmission (the impact of colonisation, for example). Here, architecture as a material object quite clearly supports a dialogue that covers a much larger field.

² See <http://unesdoc.unesco.org/images/0006/000623/062310fb.pdf>

SURVEYED HOUSE MARIAM WINDI (MAISON KULLÉ)

0. *kata*, an entry system ensuring the privacy of the members of the compound. This is where the head of the family receives guests. Historically, the *kata* was built in the houses of chiefs, warriors and the wealthy. Today, it is also used for religious reasons;

1. *werenda*, Meïdawa's former room, now a 'shop';

2. *cheroga*, room of Assia + children;

3. *cheroga*, room of Imaïma + children;

4. *cheroga*, room rented to 'foreigners'.

Open to men or women, but up to now rented by women only: Biba, a nurse from Karimama, and Kalidou, a merchant from Niger. Both already knew the family. It is common for *alfas* to rent rooms to 'foreigners', who work (including in the fields) in exchange for their lodging. Children of 'foreigners' help with domestic chores;

5 *cheroga*, abandoned room. Imaïma had been living here;

6. *werenda*, a pigeon house in 2013, a rabbit hutch in 2014;

7. *granary*, 'collapsed' in 2014.

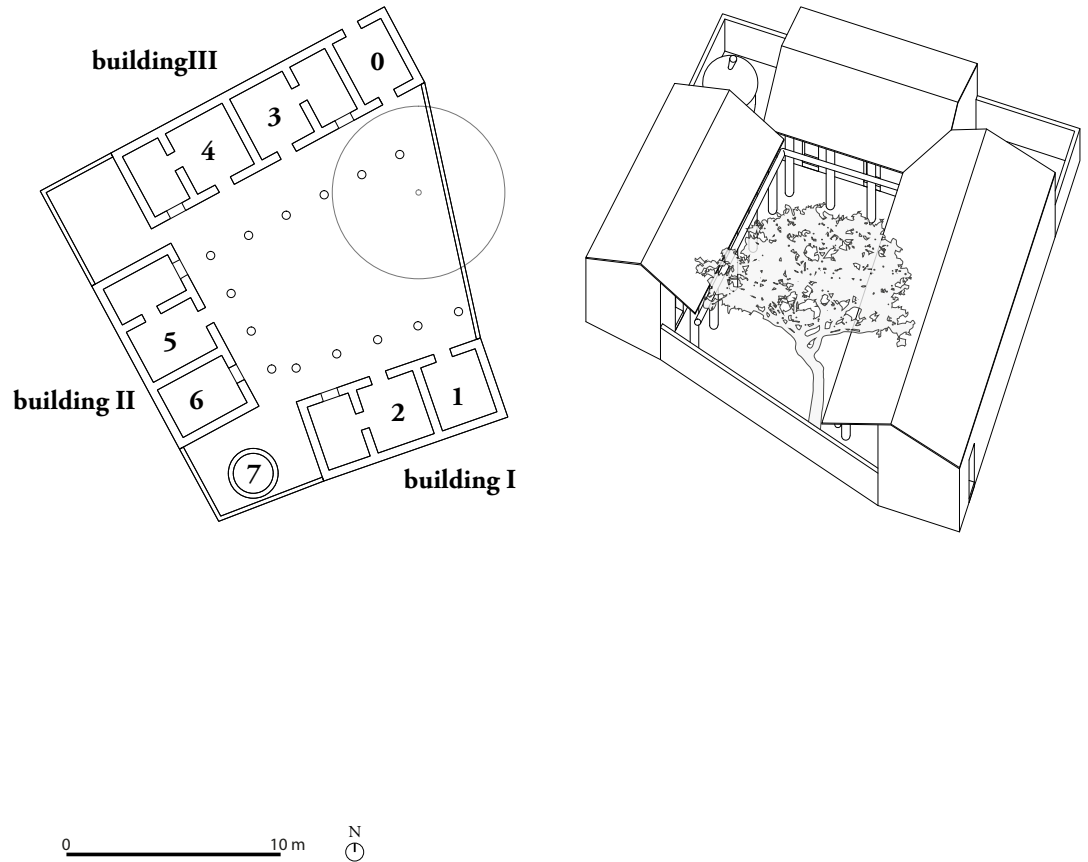


Fig. 4. Example of habitation surveyed at Birni Lafia. The right-hand text includes vernacular terms used by inhabitants to name their houses. (Drawing © J.-F. Pinet.)

d) Name the elements!

A fundamental dimension of survey as discussed here is the terminology that inhabitants use for elements of construction and/or places (fig. 4). Vernacular terms often indicate the relative importance of an element, or its connexion with a specific semantic field, which leads to a better understanding of its origin or forgotten usage -(see this volume, Bostoen, pp. 257-260 and Ricquier, pp. 261-263). If the interviews are conducted via an interpreter, their role is vital.

e) Chance

Beyond the necessary collection of information, *in situ* surveys allow the researcher to 'get into' the field: a lot of information is obtained by chance, or indirectly, while drinking tea, chatting with children curious about what we are drawing, or accepting an invitation to a wedding.

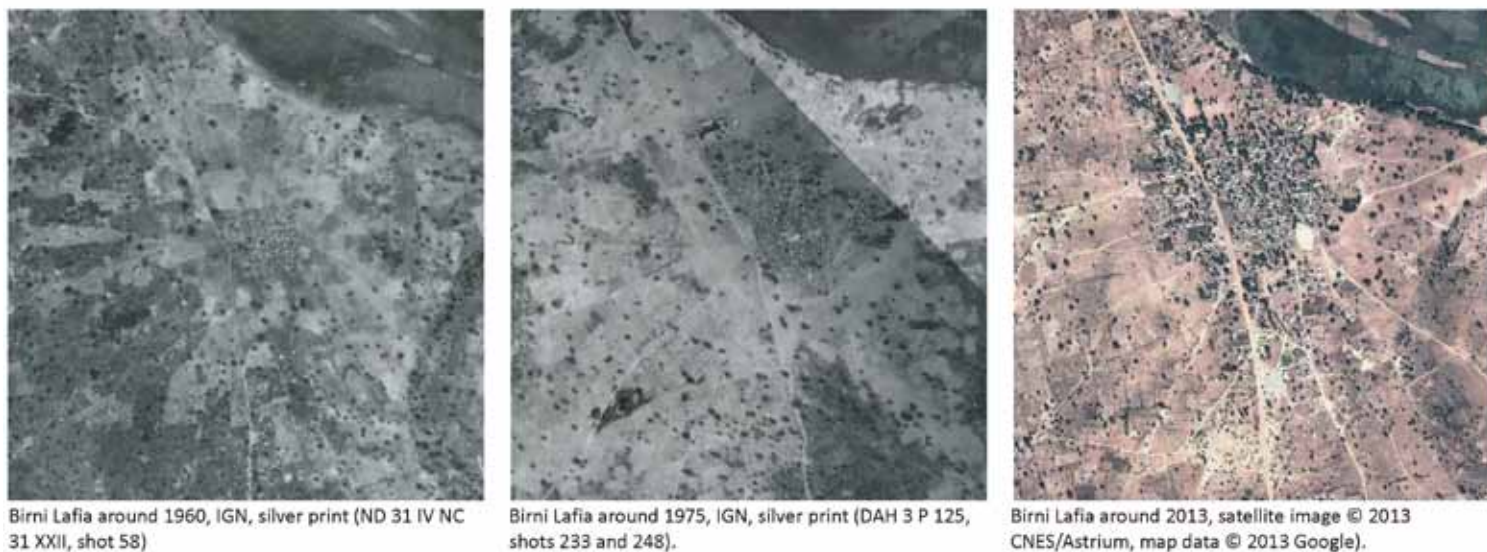
This intensive fieldwork is just as important as the survey work itself. Both are based on confidence established according to certain rules of respect: asking permission to enter places or to take photographs (as a general rule, drawing is far preferable to photography, which is often perceived as intrusive).

2. Diachronic analysis and its tools

Diachronic ('across time') analysis is used to describe the process of growth, rupture and continuity of the built space. Pertaining generally to urban contexts, its main tools are geographical maps and historical aerial photographs (fig. 5).

Tools: historical maps

Diachronic reading must be done at different scales: that of a building, a village or a broader area. In general, this work is performed on a larger scale than for synchronic



Birni Lafia around 1960, IGN, silver print (ND 31 IV NC 31 XXII, shot 58)

Birni Lafia around 1975, IGN, silver print (DAH 3 P 125, shots 233 and 248).

Birni Lafia around 2013, satellite image © 2013 CNES/Astrium, map data © 2013 Google).

Fig. 5. Evolution of Birni Lafia, northern Benin. (Photos © IGN / Google.)

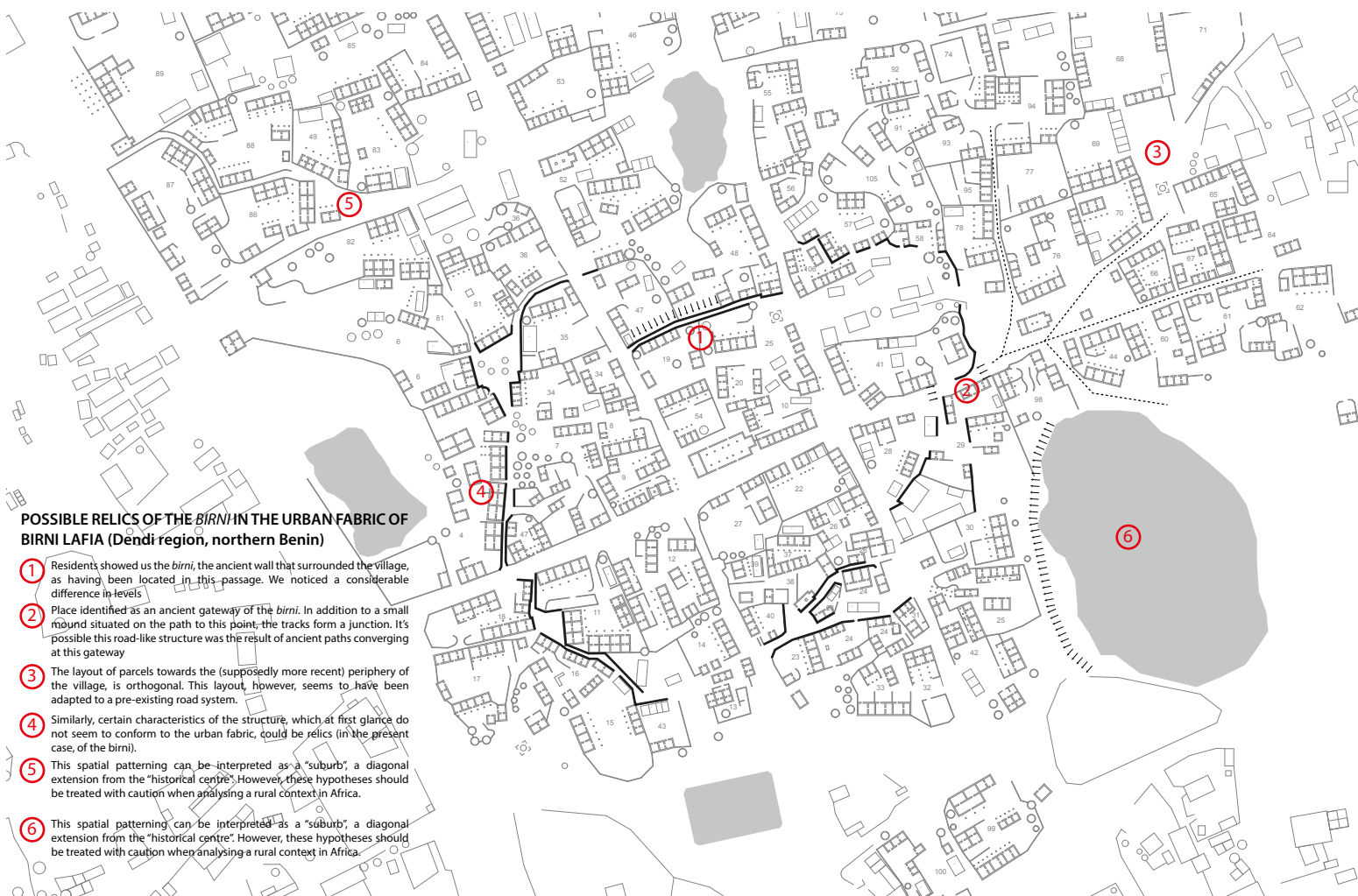


Fig. 6. Analysis of certain elements of the urban fabric of Birni Lafia, which may indicate traces of a *birni* (surrounding wall). (Drawing © J-F. Pinet.)

reading, depending on available maps. Starting with a scaling of the documents, the method consists of comparing maps of different eras. The simplest way is to perform a 'deconstruction' of what is visible today, going back in time, by type of element (built structure, road network, land plotting, vegetation, etc.). The reading is morphological in nature: one tries to classify elements by their shape, size, etc. Diachronic reading reveals structuring elements (fig. 6) that endure over time, and the patterns of growth of the town or village (by urban agglomeration, densification, etc.).

CONCLUSION

In conclusion, it is important to distinguish in the elements of method presented above a primary 'documentary' dimension, and a secondary 'interpretive' dimension. We would like to stress here the necessity, in the case of Africa, of developing the first, without aspiring to interpretation: a work of documentation, an inventory of built realities, remains indispensable to a thorough comparative approach and an analysis of the processes of transfer (technical or cultural in the broadest sense) in space and time. One of the strengths of this research design is that it makes such comparisons possible.

REFERENCES

- Borie, A. & Denieul, F. 1984. *Méthode d'analyse morphologique des tissus urbains traditionnels*. Paris: Unesco. <http://unesdoc.unesco.org/images/0006/000623/062310fb.pdf> (consulted on 05/05/16).
- Castex, J., Cohen, J.-L., Depaule, J.-Ch. & Le Couédic, D. 1995. *Histoire urbaine, anthropologie de l'espace*. Paris: CNRS Éditions, 135 p.
- Rudofsky, B. 1964. *Architecture without Architects: A Short Introduction to Non-pedigreed Architecture*. Albuquerque: University of New Mexico Press, 128 p.
- Bourdier, J.-P. & Minh-Ha, T.T. 2005. *Habiter un monde : architectures de l'Afrique de l'Ouest*. Paris: Éditions Alternatives (series 'Anarchitectures'), 191 p.
- Seignobos, C. & Jamin, F. 2003. *La Case obus, histoire et reconstitution*. Marseille: Éditions Parenthèses, 210 p.

CERAMIC TECHNOLOGY BETWEEN PAST AND PRESENT: A STUDY OF MALIAN TRADITIONS

Anne Mayor¹

INTRODUCTION

Ceramic studies in archaeology have long focussed only on the stylistic classification of artefacts, through space and in time, based on morphological and decorative criteria. Few researchers were interested in the technical and functional aspects. It is now accepted that a set of stylistic traits does not necessarily coincide with a certain population. Many studies have demonstrated that technical aspects, on the other hand, are closely correlated to the identity of the producer group, as they often result from an early apprenticeship within the ethno-linguistic group. The transmission of technical knowledge can also follow other social configurations, such as clan, socio-professional class, or gender. Technical elements therefore provide essential information, even if they seem difficult to access. Furthermore, all pottery is produced in a particular context and is made to be used. The artisan will therefore make technical choices that take into account environmental and cultural constraints, as well as intended use. Studying the technical variability of ceramic assemblages thus aims at understanding the artisans' technical choices and their meanings. The technological analysis of archaeological ceramics involves a reconstruction of the different manufacturing steps following a *chaîne opératoire* framework (see Gosselain, this volume, pp. 292-295). The main stages are clay processing, shaping, finishing, and firing.

In archaeology, the interpretation of ceramics usually refers to – explicitly or not – a series of knowledge built by different approaches. Ethnoarchaeology (see Lyons, this volume, pp. 270-274) provides explicit references that are useful for interpreting the past by studying systematically, in the present, the links between ceramics and their various meanings, as well as the mechanisms behind observed regularities. Technological analyses therefore often rely on ethnoarchaeology (fig. 1), and other approaches such as experimental archaeology or archaeometry. These methods are varied and borrow elements from cultural anthropology as well as analytical tools from the natural sciences (see Livingstone Smith and de Francquen, this volume, pp. 173-179).

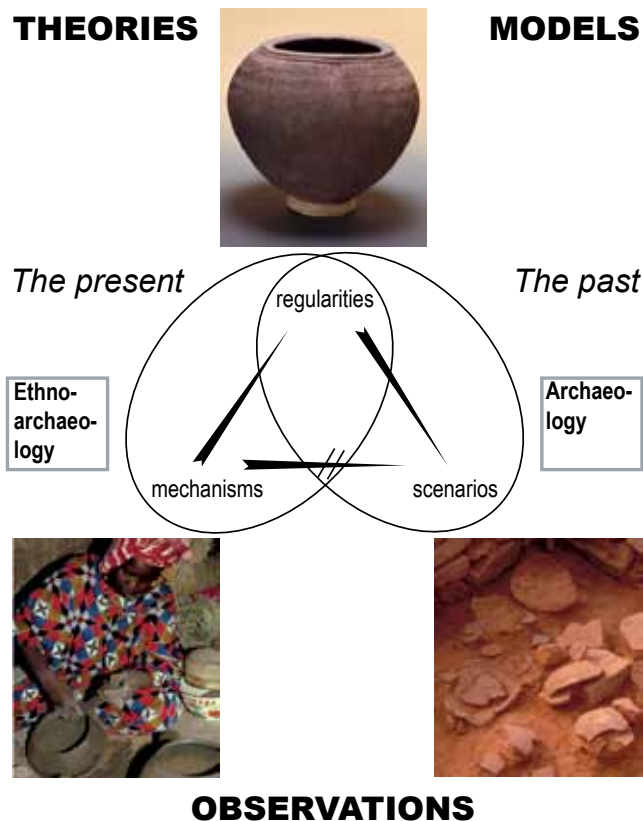


Fig. 1. The ethnoarchaeological approach, applied to the study of ceramics (Mayor 2011: fig. 1).

I. AN ETHNOARCHAEOLOGICAL STUDY OF THE CERAMIC TRADITIONS OF MALI

As a case study, we will examine ethnoarchaeological research conducted by a team from the University of Geneva and devoted to Malian ceramic traditions. It contributed to a renewal of our understanding of the history of technical systems and populations in the Niger Bend.

Following a theoretical analysis that acknowledged the impasse faced by archaeologists when interpreting ancient artefacts, due to a lack of understanding of ethnographic realities, the MAESAO team from the University of Geneva, led by Alain Gally and Eric Huysecom, launched a broad ethnoarchaeological project in Mali to understand the relationships between ceramic traditions and ethnic groups (Gally *et al.* 1998). We will summarize what was learned through this research, which was carried out from 1988 to 2011, in order to explain how to obtain data that can renew our understanding of the past.

¹ University of Geneva, Switzerland.

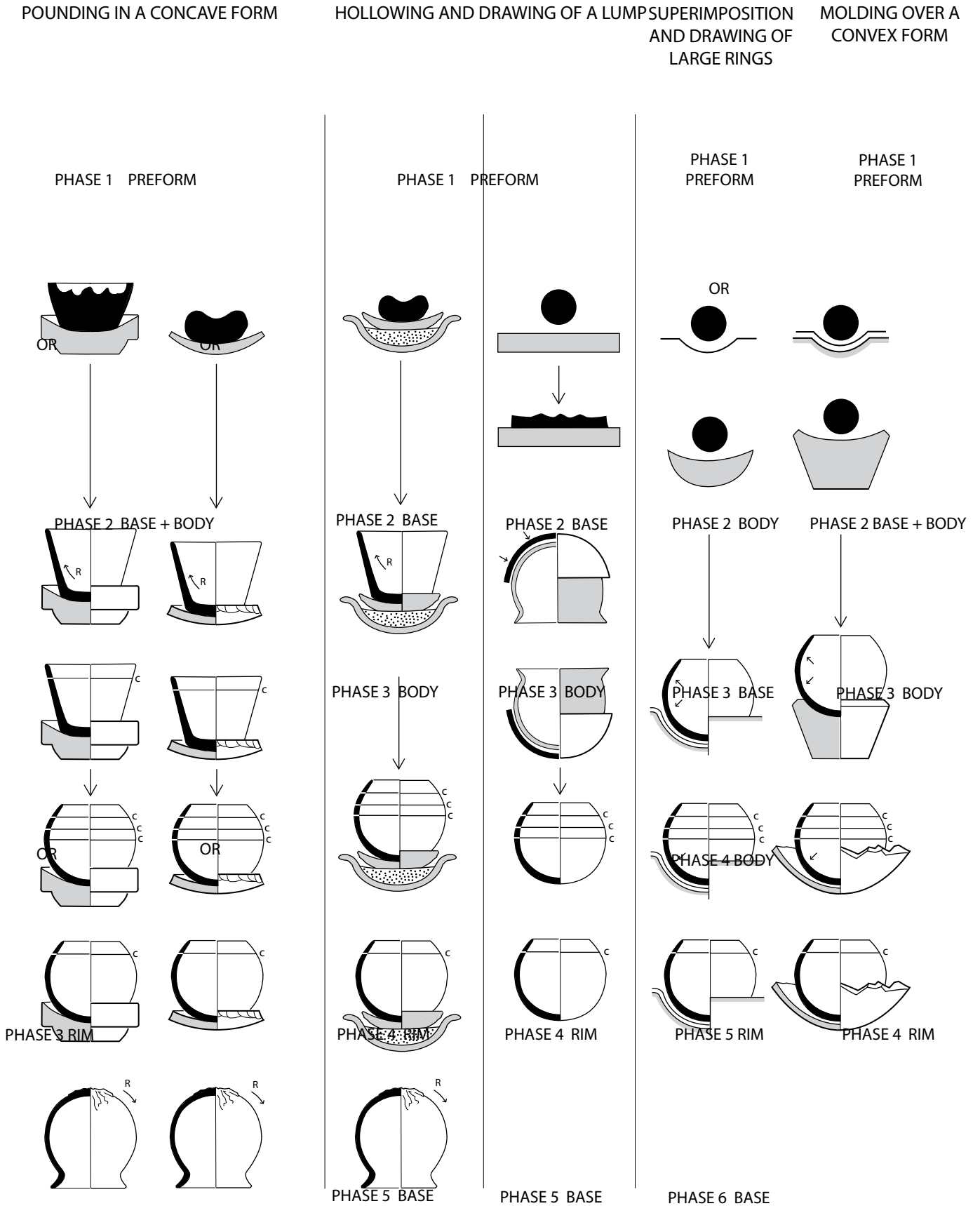


Fig. 2. Schematic 'chaines opératoires' for the four main shaping techniques practiced in the Niger Bend (Mayor 2011: fig. 3).

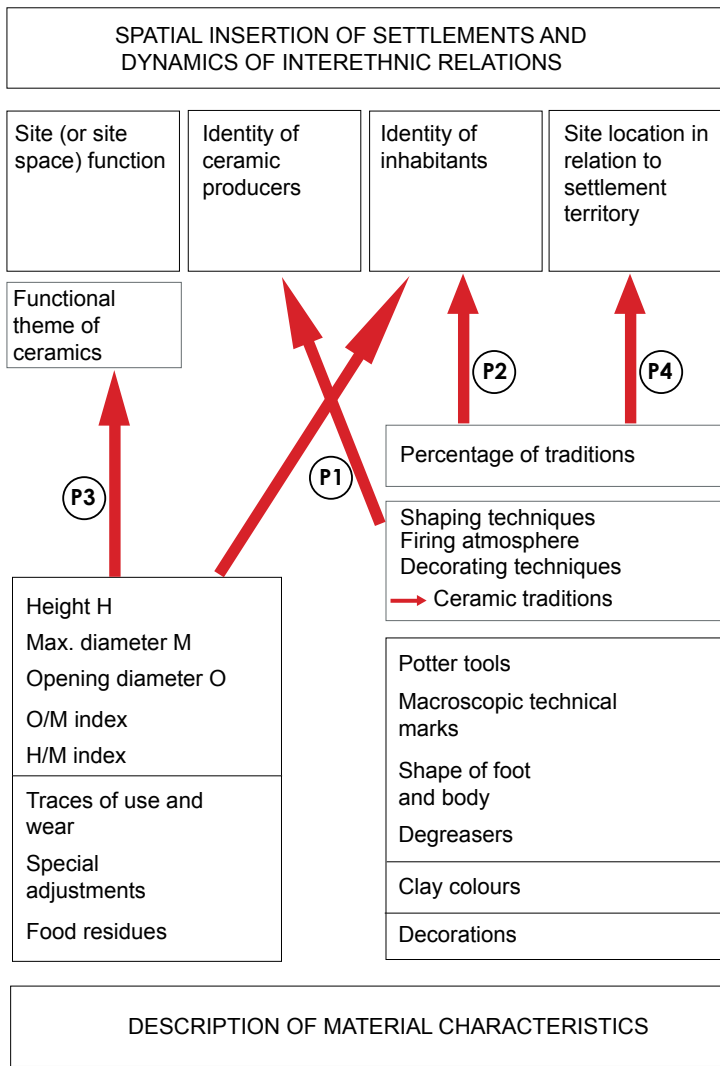


Fig. 3a. Diagram showing the links between selected relevant descriptive features and interpretations in terms of the spatial integration of settlements and the dynamics of inter-ethnic relations (Mayor 2011: fig. 59.)

Production of ceramics	
P1	Certain ceramic traditions are characterised by a manner of working and aesthetic properties that reflect the ethnolinguistic identity of producers
Consumption of ceramics	
P2	Recipients in a dwelling unit reflect the identity of the inhabitants
P3	Dimensions of recipients reflect their function
Spread of ceramics	
P4	The spatial distribution of a ceramic tradition reflects the structure of the producer group's population

Fig. 3b. Examples of regularities linking material facts with interpretation, and structuring the research.

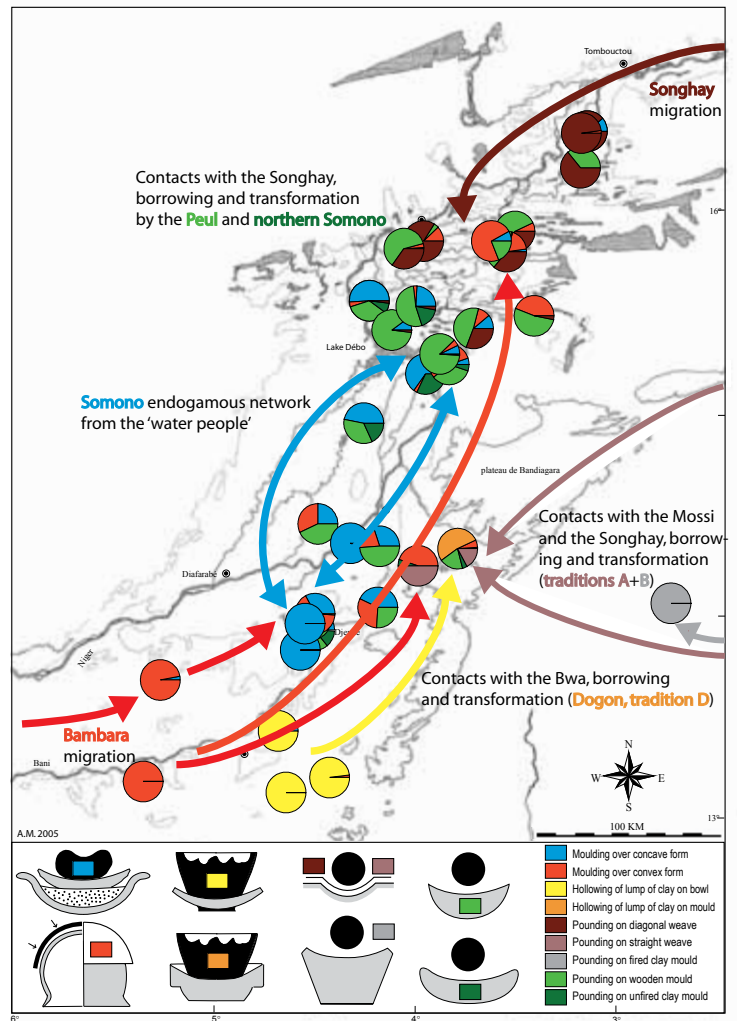


Fig. 4. Current distribution of shaping techniques and historical movements of populations responsible for their development (Mayor 2011: pl. 5 modified.)

Such a goal demands that specific methodological requirements be observed during field surveys:

- **An extensive strategy:** in order to understand the ceramic traditions of a region a wide geographical area must be covered, and enquiries must be made in many villages, with potters and customers from diverse socio-cultural backgrounds. The idea is to approach the complexity of reality and to get an accurate picture of technical boundaries.

- **A restricted objective:** with limited time and resources, a consequence of the previous requirement is that one must restrict oneself to the study of ceramics and of the elements that contribute to their understanding. This requires discipline, in order to put aside other exciting topics encountered in the field.

- **Numerous data:** Obtaining statistically relevant information requires that enquiries be both sufficiently numerous and systematized. Each location must be geo-located (see Ozainne, this volume, pp. 157-162), and researchers should work with standardized forms (village, compound, potter, pottery, market), completed by semi-structured interviews and observations, recorded in notes, photographs and/or videos. Ceramic production can be documented by interviewing potters, studying tools, making detailed recording of various operational systems (**fig. 2**), observing of different ceramic types, as well as through the observation of firing processes. This may be supplemented by a sampling of raw materials and finished products for laboratory analysis. Product distribution can be studied by surveying customers in markets and by comparing those observations to the data obtained from potters' and consumers' interviews. It can also be addressed by investigating (and drawing) pottery used in compounds.

- **Formulating the associations observed between material facts and their meanings in the form of rules:** in order to ensure that the results of ethnographic studies be easily exploited in the interpretation of archaeological remains, it is useful to adopt clear formulations in the form of proposals or 'regularities'. Also, to recognize shaping techniques used in the past, it is important to identify specific macro-traces left by present-day techniques, as did E. Huysecom (1994).

II. THE ESTABLISHMENT OF A MODEL OF INTERPRETATION OF THE PAST

After documenting and analysing current ceramic traditions, the final step is to assess the historical depth of these ceramic traditions and see if there are objective links between the archaeological past and the present. Here is, for example, how we proceeded in the Niger Bend.

Following the qualitative study of ethnographic data and the first implementation of archaeological testing on locations with a varying degree of temporal and spatial association, (e.g., Huysecom 1996), it was necessary to re-examine the archaeology of the Niger Bend in the light of information about current ceramic traditions. The idea was to develop a new understanding of the history of technology and populations (Mayor, 2011; Mayor et al. 2005). This involved the adoption of three complementary approaches (see Stahl, this volume, pp.250-252).

A. The ethnoarchaeological approach

Based on field data, we conducted a quantitative study of the current variability of ceramic traditions of the Inner Niger Delta and its surroundings, by mapping the ethnic groups and the spatial distribution of elements related to shaping and decoration techniques. This allowed us to select a number of criteria identified as culturally relevant: shaping and decorating techniques to identify producer groups; dimensions of containers to deduce function; percentage of traditions within the inhabited units to deduce the identity of the inhabitants (**fig. 3 a & b**). It is important to select the descriptive criteria carefully, according to the purpose of the study, because it is not possible to study everything. In our case, it turned out that the morphology of the vessel rims, a very popular criterion among archaeologists, had very little relevance in cultural terms.

B. The ethnohistorical approach

To address historical depth, we conducted a study of spoken and written sources to identify the dynamics underlying the settlement of various ethnic groups, their interactions and their transformations. We know that ethnic entities are not static and underwent recomposition over time. It is therefore important to collect traditions concerning myths of origin and migratory routes, conflicts or past alliances with neighboring groups, and/or changes in language, name, economic specialty, or religion. The terminology of current ethnic entities should be handled critically and cautiously when looking back in time.

C. The archaeological approach

We analyzed the archaeological documentation available for sites in the Niger Bend, focusing on chronological data, techno-economic characteristics, ceramics, and those settlement hypotheses proposed by researchers. A focus on central Mali meant that it was not possible to understand the significance of the spatial and temporal

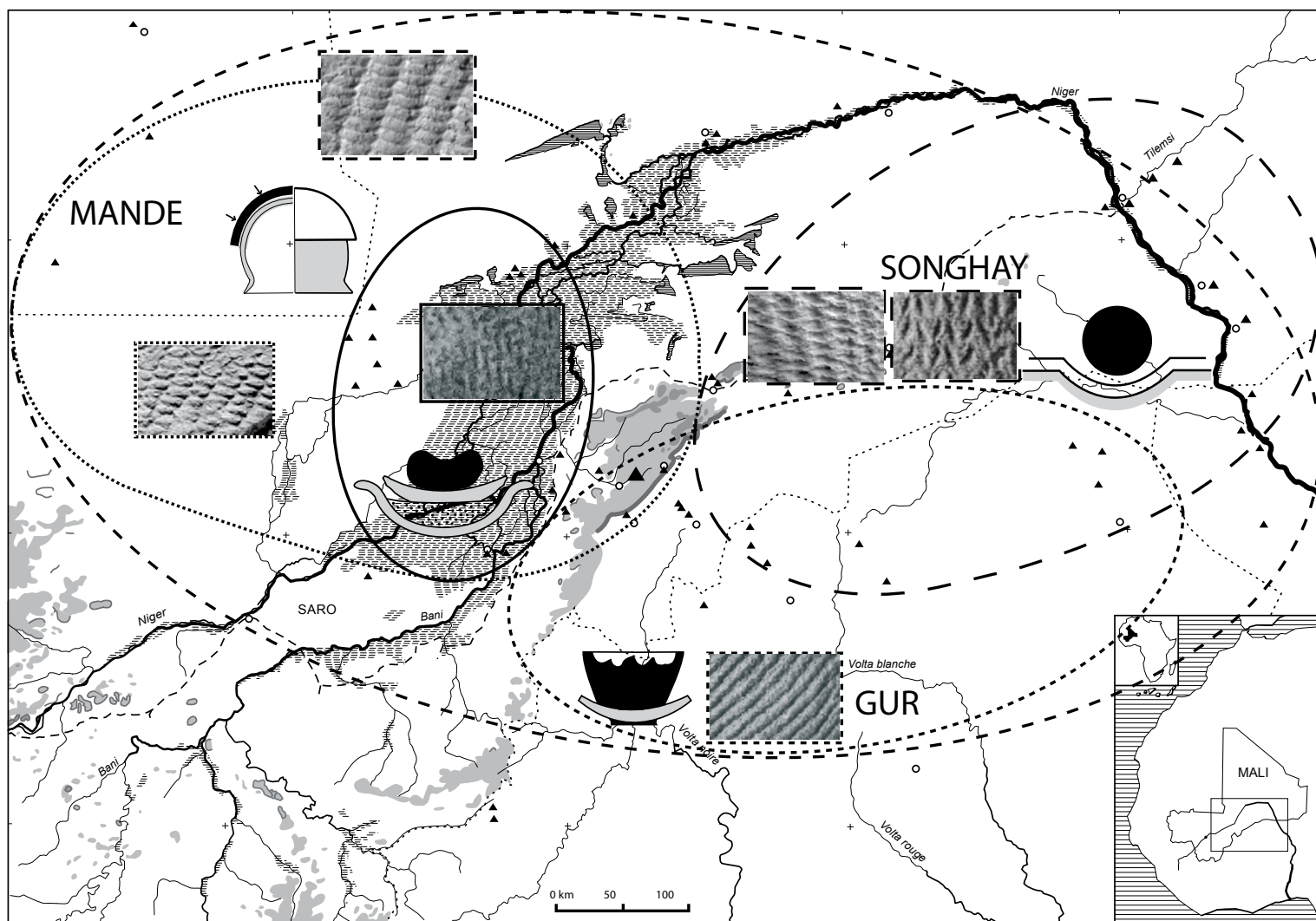


Fig. 5. Summary of relations between ceramic traditions and linguistic groups in the Niger Bend before the 15th century (Mayor 2011: fig. 88.)

distribution of selected descriptive criteria. We therefore expanded the spatial scale, which allowed us to examine contrasting areas. The careful choice of a spatial and temporal scale, neither too big nor too small, is important if we are to make sense of the data.

By comparing the synchronic and diachronic data on social dynamics and ceramic attributes, we developed a model of evolution of ceramic traditions in two phases: before and after the period between the 13th and 15th centuries AD, which is characterized by a significant historical and archaeological break in West Africa. For the period after this break, it is possible to correlate the historical migrations of some current populations with the distribution of present-day shaping techniques. For example, the Songhay went up the Niger river from the Gao area to Lake Debo at the height of their empire in the 16th century, and the installation of new populations in the northern Inland Niger Delta explains the use of

the technique of pounding on a diagonal mat in the delta north of Lake Debo (fig. 4). Before the 13th to 15th centuries, the large historical depth no longer allows us to speak in terms of current ethnic groups, but it is still possible to propose an overall correlation between certain pottery techniques and ethnolinguistic affiliations on the basis of their geographical distribution and historical evolution. For example, in the Niger Bend, the ‘drawing of a lump’ technique and rolled impressions with braided strop roulette can be associated with the Gur language family, while the molding technique on a concave mould and impressions with braided cord roulette are related to fishing groups within the Mande family from the Inland Niger Delta (fig. 5).

Geographically, the Dogon country is located at the intersection of Songhay, Gur and Mande cultural spheres, each characterised by different pottery techniques. Remains from new archaeological excavations undertaken

in the region using our model served to test this. In light of ethnoarchaeological patterns, the body of archaeological ceramics revealed exchanges between cultural spheres, local technical innovations, and hybridizations between traditions, which could not be analysed without references to the present. These new data thus confirmed the model, while refining its resolution for the period prior to the 13th and 15th centuries AD. The approach has therefore enabled us to interpret the Dogon country as a socio-economic hub influenced by the contributions from diverse populations in the first millennium AD, hence placing into question the previously established ‘Toloy–Tellem–Dogon’ chrono-cultural sequence (Mayor, 2011; Mayor *et al.* 2014).

CONCLUSION

The case study presented here shows that a rigorous approach anchored in the present can be effective for interpreting regional proto-historic sites and generating new understandings of the past. With a significant investment of time in gathering information, and rigour in the analysis and establishment of regularities, this approach to the cultural history of technology and peoples is likely to be replicated in other geographical contexts where ceramic technical knowledge still exists.

REFERENCES

- Gallay, A., Huysecom, E. & Mayor, A. 1998. ‘Peuples et céramiques du delta intérieur du Niger (Mali): un bilan de cinq années de missions 1988-1993’. In *Terra Archaeologica: monographies de la Fondation Suisse-Liechtenstein pour les recherches archéologiques à l'étranger*, no. 3. Mainz: P. von Zabern, 130 p.
- Huysecom, E. 1994. ‘Identification technique des céramiques africaines’. In D. Binder & J. Courtin (eds), *Terre cuite et société: la céramique, document technique, économique, culturel. Actes des XIV^e rencontres internationales d'archéologie et d'histoire d'Antibes, 21-23 octobre 1993*. Juan-les-Pins: APDCA, pp. 31-44.
- Huysecom, E. 1996. ‘Iron Age terracotta pestles in the Sahel area: an ethnoarchaeological approach’. In L. Krzyzaniak, K. Kroeper & M. Kobusiewicz (eds.), *Inter-regional contacts in the Later Prehistory of Northeastern Africa. (Studies in African archaeology no. 5)*. Poznan: Archaeological Museum, pp. 419-458.
- Mayor, A. 2011. *Traditions céramiques dans la boucle du Niger: ethnoarchéologie et histoire du peuplement au temps des empires précoloniaux. (Journal of African Archaeology Monograph Series no. 7)*. Frankfurt am Main: Africa Magna Verlag, 292 p.
- Mayor, A., Huysecom, E., Gallay, A., Rasse, M. & Balouche, A. 2005. ‘Population dynamics and paleoclimate over the past 3000 years in the Dogon Country, Mali’. *Journal of anthropological archaeology* 24: 25-61.
- Mayor, A., Huysecom, E., Ozainne, S. & Magnavita, S. 2014. ‘Early social complexity in the Dogon Country (Mali) as evidenced by a new chronology of funerary practices’. *Journal of Anthropological Archaeology* 34: 17-41.

COMPARATIVE TECHNOLOGY

Olivier P. Gosselain¹

As with objects, myths or lexicons, technical processes are cultural manifestations in their own right, capable of informing us about the social dynamics, worldviews and history of those who carry them out (Balfet 1991; Bartholeyns *et al.* 2010; Gosselain 2011; Lemonnier 1992). Here, I will focus on their exploitation as historical documents.

The historical approach to technical processes implies two stages of **comparison**. The first stage involves a comparison of the technical processes themselves, in order to identify similarities and differences. The second stage involves a mapping of the common and distinctive features, and a comparison of the resulting spatial distributions in order to identify their characteristics (the effects of aggregation or disintegration, borders, or interpenetrations, for example). Since the spatial distributions always stem from a series of relationships – between people themselves, and between people and their environments – it then remains to identify the social, historical and geographical factors that explain the configurations in question.

This approach has deep roots. In particular, it was developed by one of the founders of the cultural technology school in France, André-Georges Haudricourt (1955). Often associated with ‘diffusionism’, whose excesses and abuses have been rightly denounced since the first half of the 20th century, comparative technology studies still suffer from a negative image and remain under-exploited. The main weaknesses of this approach are a lack of method in the collection and ordering of technical facts, and a frequent lack of contextualization of the data. It is thus not sufficient to collect and map technical facts, in order to ‘let history emerge’; we must also understand the factors underlying their appearance and development.

I. CHOICE OF DATA FOR ANALYSIS

No field of activity can be neglected *a priori*: from the manufacture of artifacts to agriculture, and including food preparation and techniques of the body, any comparison of ways of doing things can provide an historical perspective on a population or region.

Analysis ideally involves first-hand data, collected from ethnographic contexts (see Lyons, this volume,

pp. 270-274) and following appropriate protocols. The increasing disappearance of particular techniques, the need to broaden the comparison to large geographical areas, and the time available do, however, force researchers to use secondary sources, gleaned from the literature. These display huge disparities in their content and level of detail. As the rigour of a comparative approach lies in its systematic nature, the analysis must be adjusted by limiting it to the most commonly mentioned elements in the descriptions, and/or by adopting a level of detail that allows the inclusion of all or most of the available data.

II. DOCUMENTING AND ORDERING THE DATA

Technical processes are documented through an analysis of *chaînes opératoires* (Balfet 1991, Lemonnier 1992). In its canonical definition, this term refers to any sequence of operations aiming at transforming one or more primary materials into a finished product (e.g. from clay to pottery or from ore to some metal object). The scope can be extended to any change of state that produces an effect, allowing the inclusion of techniques of the body. In an analytical perspective, the *chaîne opératoire* should particularly be understood as a checklist (or template) used to structure and systematize the study of technical activity.

The first imperative is to generate ‘meaningful observation units’ (Balfet 1991: 12). The most basic of these units is the ‘**operation**’, that is to say the isolated gesture or sequence of gestures. Above this, we find the ‘**sequence**’, which is an organized set of operations. Finally, the ‘**phase**’ is a set of sequences, corresponding to ‘the major “logical” stages of a technical action’ (ibid. 17). In a ceramic *chaîne opératoire*, for example, the phase of clay preparation may include a grog fabrication sequence, which itself includes the operations of grinding sherds and sorting by sieving.

This division into levels of analysis is essential, since it makes it possible to both associate comparable levels of information in different contexts, and to adjust the level of analysis based on the objectives and conditions of the research. If one is interested in the distinctive characteristics of individual production – the idiosyncrasies, so to speak – the attention will be focused on operations. Reversely, larger-scale comparisons will focus on sequences.

Each step – or ‘phase’ – in the technical process will be

1 Centre d’Anthropologie culturelle, Université libre de Bruxelles.

documented by means of a multiple-entry template: this is the ‘**checklist**’ aspect of the *chaîne opératoire*. This template is primarily aimed at collecting comparative data, to better understand the logic of technical behaviors and the factors affecting their spatial and temporal evolution. Here is a concise overview of the kind of information to be collected:

A. Location

- characteristics;
- relationship with other areas of activity;
- ownership (individual or collective);
- possible sharing (with whom? occasionally or regularly?);
- relocation opportunities.

B. Actors

- identity of the people involved (gender, age, affiliation);
- socioprofessional status (membership in a group of specialists [caste, clan]; economic importance of the income from the activity);
- social relations between actors (types of relationships, possible contracts, relationships of subordination or authority);
- role (central or peripheral, occasional or regular involvement);
- level of competence (position in the process of apprenticeship).

C. Knowledge and expertise

- origin of knowledge (who? how? where? when?);
- degree of specialization (is knowledge widely shared outside the particular domain of activity?);
- alternative knowledge (different forms of knowledge exist, but are not put into practice).

D. Raw materials

- physical characteristics (type, composition, condition);
- origin (natural or human, original form, by-product of another activity, recycling);
- selection (types of criteria and justifications, tolerance for variation);
- alternative choices (knowledge of other potentially-usable materials).

E. Actions

- nature (basic actions on the material [Leroi-Gourhan 1971: 43-113], type of energy);
- organization (single or repeated);
- objectives.

F. Tools

- structure (material, shape, dimensions, weight, method of attachment, etc.);
- origin (manufacturer, place of manufacture, previous users);
- status (specialist or non-specialist, personal or shared);
- way or functioning (how the tool is set in motion, effects on the material being worked).

G. Relation with other activities

- actors: associations through status (e.g. caste) or practice (e.g. blacksmith/circumciser; potter/midwife);
- location (other uses of the location; primary or secondary);
- raw materials (uses in other activities);
- tools and actions (potential borrowing from other spheres of activity; similarity of bodily postures and functions);
- knowledge and know-how (transfer from one activity to another).

H. Organisation

- placement in the *chaîne opératoire* (as an essential or elective task);
- placement in the calendric cycle of the actors (seasonality, subordination to other activities).

I. Beliefs and religious practices

- nature (prohibitions, rites);
- scope (people and components involved);
- temporality (initiation and duration of activity);
- purpose (for the manufacturing process, the products, the artisan, the ‘natural order’...).

J. Specialized vocabulary

(see Riquier, this volume, pp. 261-263).

III. SELECTION AND COMPARISON

The first imperative is to define a framework for comparison. Does the analysis involve examination of the history of a particular population? That of a set of populations? That of a particular region or a portion of a continent? In each case, the analyst must take care to document the technical processes within the targeted social or geographical unit, and among the surrounding communities or regions as well; it is through this process that relevant boundaries and historical relationships are liable to be identified.

Another imperative is the selection of the contributing elements for comparisons. If the *chaînes opératoires* are potential ‘reservoirs of difference’ (Hennion 2007), it remains necessary to identify the elements that can

generate meaningful differences in a given comparative framework. Here, one should pay particular attention to changes in the nature and treatment of raw materials, in the structure and operation of tools, and in the actions or sequences of actions on materials. Among the variations, one should select those that reoccur with sufficient regularity (an isolated occurrence is rarely useful) and that seem to display contrasting distributions. One should also endeavour to identify elements that propagate and evolve along different trajectories (Gosselain 2016).

The status of similarities and differences between the *chaînes opératoires* must also be examined. Could these involve loans or innovations? Do they involve simple convergences in technical processes, without historical roots? A solid knowledge of technical processes on a continental or subcontinental scale can help the researcher evaluate these possibilities. Faced with a very specific modification to a more widespread technique, the metaphors of a ‘grammar’ and ‘vocabulary’ of technical processes may be relevant: for example, by substituting a hair roller for a cord roulette in order to produce designs on pottery, a potter follows the grammar of roulette impression, but changes the vocabulary. In contrast, technical processes that produce results very similar in appearance – as with divergent and convergent pounding in the shaping of pottery – sometimes reflect distinct operational grammars and can therefore indicate independent origins.

IV. MAPPING AND COMPARING

Three basic rules are to be followed in mapping the data. First, locate each information collection point as precisely as possible, ideally at the level of the village or neighbourhood. Second, do not place all of the information on a single map, in order to preserve its legibility. (The easiest method is to create a map for each category of data under study.) Third, if the objective is to map the presence of an element (rather than its variants), indicate the places where that element is absent, in such a way that it is easy to tell whether a blank space on a map indicates (the lack of) a particular technical process or simply a lack of data.

On the map, the spatial configuration of elements takes the form of a random distribution of points, dispersed (more or less regularly) or aggregated (in which case we speak of ‘discrete distributions’). Rarely informative on their own, these distributions must be linked with other elements to make sense. The researcher must particularly seek to detect the potential effects of spatial dependence.

These can include structuring elements in the landscape (lines of communication, physical barriers, ecological contrasts, variations in the density of human settlement, the presence of urban centres or of markets...) liable to affect the distribution of data being analyzed. Another form of dependence concerns social boundaries: languages, ethnic and geographical affiliation, social status, gender, and/or age groups. Finally, these distributions may be affected by political and administrative boundaries, both modern and ancient (Bromberger & Morel 2001).

The work of interpretation turns upon these phenomena of spatial dependence. It is first necessary to determine whether they directly or indirectly relate to technical factors. For example, an uneven distribution of raw materials or the existence of marked ecological contrasts can directly affect the distribution of particular technical behaviours. (Note, however, that environmental constraints often have less impact than we might think). At the same time, the micro-regional standardization of a practice may be directly linked to the presence of a commercial centre, where artisans from diverse backgrounds meet and interact with each other. However, in many cases, these relationships are indirect. One must thus identify those mechanisms that generate a correspondence between the spatial distribution of a technical trait, and a structural element of the landscape or a social or political boundary.

This is where the data collected by means of the *chaînes opératoires* are crucial, because they reveal the multiple logics underlying technical behaviour. Data on apprenticeship networks also enable us to retrace the genealogy of technical traditions. And it is through these genealogies that we can explore a multitude of socio-historical phenomena, including individual and collective mobility, marriage strategies, cultural exchanges, political developments, inter-regional relationships, and so on. (See Gosselain 2016 for a detailed development of these ideas).

Note, finally, that any technical tradition will usually appear as a heterogeneous aggregate: its components often have different origins, evolving under different conditions and at different speeds and with different distributions in space. But since they all tell us of different histories, they are necessarily complementary. It is crucial, therefore, to include the largest possible number of elements in the analytical comparison, and to augment the number of the distribution maps. Ideally, a comparative approach to technical processes should also take place simultaneously in different domains of activity.

REFERENCES

- Balfet, H. (ed.). 1991. *Observer l'action technique. Des chaînes opératoires pour quoi faire ?* Paris: Éditions du CNRS.
- Bartholeyns, G., Govoroff, N. & Joulian, F. (eds). 2010. *Cultures matérielles. Anthologie raisonnée* (special edition of *Techniques & Culture* 54-55, in two volumes). Paris: Éditions de la Maison des Sciences de l'homme.
- Bromberger, C. & Morel, A. (ed.). 2001. *Limites floues, frontières vives. Des variations culturelles en France et en Europe*. Paris: Éditions de la Maison des Sciences de l'homme.
- Gosselain, O.P. 2011. 'Technology'. In T. Insoll (ed.) *The Oxford Handbook of the Archaeology of Ritual and Religion*. Oxford: Oxford University Press, pp. 243-260.
- Gosselain, O.P. 2016. 'The world is like a beanstalk : Historicizing potting practice and social relations in the Niger River area'. In A. Roddick & A. Brower Stahl (eds)? *Knowledge in motion. Constellations of learning across time and place*. Tucson: University of Arizona Press, pp. 36-66.
- Haudricourt, A.G. 1955. 'Biogéographie des araires et des charrues'. *Comptes Rendus de la Société de Biogéographie* 280: 77-83.
- Hennion, A. 2007. 'Those things that hold us together: taste and sociology'. *Cultural Sociology* 1 (1): 97-114.
- Lemonnier, P. 1992. *Elements for an anthropology of technology (Anthropological Papers 88)*. Ann Arbor: Museum of Anthropology, University of Michigan.
- Leroi-Gourhan, A. 1971 [1943]. *L'Homme et la Matière*. Paris: Albin Michel.

GENETICS AND AFRICAN ARCHAEOLOGY

Scott MacEachern¹

INTRODUCTION

Genetic research in Africa has the potential to inform archaeology in a whole variety of ways, most obviously through comparisons of archaeological and genetic reconstructions of historical processes, like the Bantu Expansion or the development of the Swahili states. If such reconstructions agree, our confidence in our understandings of the past is strengthened. If they do not agree, at least we know that something more complex is going on. In many ways, the relationship between genetic research and archaeology now is similar to that between radiocarbon dating and archaeological research fifty years ago: we are trying to fit a powerful new technique into our discipline, and it is both transforming our knowledge of the past and generating challenges for researchers.

I. VARIETIES OF ANALYSES

There are many different kinds of analyses used by genetic researchers in historical studies, and archaeologists need to understand the differences between them. Since the 1990s, much of this work has involved **lineage-based analyses**, which study those parts of the genome that do not undergo recombination and are thus passed down untransformed from one generation to the next. The best known such system is mitochondrial DNA (mtDNA), which is inherited maternally: all of us have inherited mtDNA from our mothers, who have in turn inherited it from their mothers, and so on. Similarly, men inherit the Non-recombining Region of the Y-chromosome (NRY) from their fathers, who inherited it from their fathers and so on back through time. This lack of recombination between generations makes the definition of historical lineages relatively straightforward. Both mtDNA and NRY mutate fairly rapidly, which allows studies of human population history at scales that are useful archaeologically. Since mtDNA and NRY are passed down maternally and paternally, researchers can compare them to gain information on social processes that affect men and women differently, such as marriage patterns. However, lineage-based analyses only provide information on one single line of maternal or paternal descent, among the vast number of ancestors of any individual. This is a major limitation.

Analysis of **autosomal DNA** (i.e. DNA from the recombining portions of the human genome) avoids this disadvantage, since it reflects genetic contributions from all of our ancestors. The disadvantage of autosomal analysis is that definition of historical lineages is impossible over significant time periods; instead, the result is a biogeographic comparison of sampled modern populations. Such research has recently advanced with new analytical techniques, especially using *single-nucleotide polymorphisms* (SNPs or ‘snips’). These techniques allow simultaneous comparison of variation at tens or hundreds of thousands of genetic locations from thousands of individuals, in ‘genome-wide’ or ‘whole-genome’ scans. This allows a more complete examination of genetic similarities and differences, and more detailed analysis of the relationships between modern populations.

II. CHALLENGES OF DATA COMPARISON

Collaboration between geneticists and archaeologists can occur when comparable data sources deriving from the two fields can be tested against one another. Data from both fields must first exist for the area under study, which in Africa is by no means a given. For example, a great deal of genetic research has been undertaken on modern African forager groups, especially Khoisan and Pygmy/BaTwa populations (Tishkoff *et al.* 2007), and populations in certain geographical areas, like the southern Lake Chad Basin, are reasonably well known. On the other hand, genetic research on farming populations in most of central, southwestern and southern Africa is quite limited, little genetic research has been undertaken on Saharan populations, and in eastern Africa many Bantu-, Cushitic-, and Nilotic-speaking groups have never been studied. Archaeologically as well, some areas of Africa are far better known than are others, and few regions offer detailed archaeological and genetic data for the same populations.

Even if comparable genetic and archaeological data do exist, basic questions remain: how do we compare variation in genetic characteristics with variation in material culture? How can we tell, for example, that a particular distribution of material culture (pottery, let’s say) and particular kinds of genetic variation both refer to a historical phenomenon that we call the ‘Bantu Expansion’?

¹ Sociology and Anthropology Department, Bowdoin College, USA,

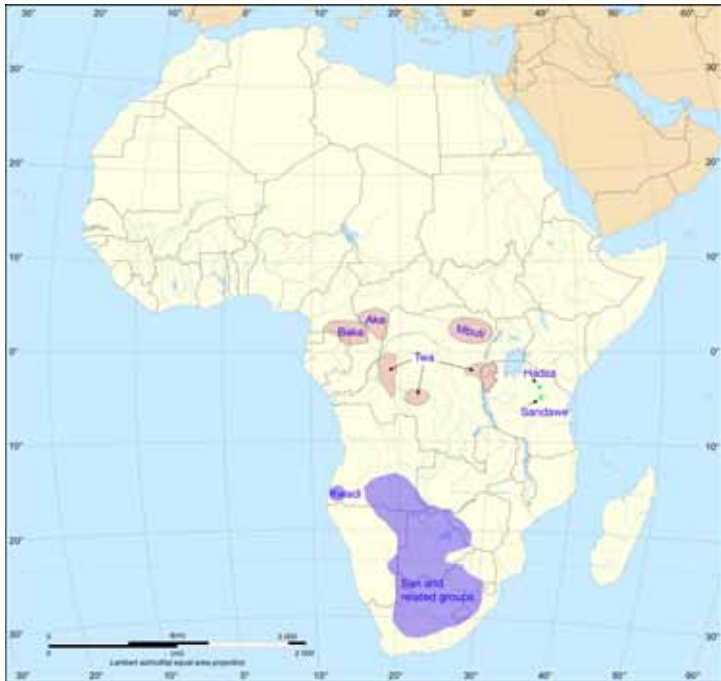


Fig. 1. Approximate extents of Pygmy/BaTwa (orange), San (purple) and Sandawe and Hadza (green) populations.



Fig. 2. Approximate extent of the Bantu languages.

This is particularly a problem because techniques for estimating the age of genetic processes – the occurrence of a particular mutation, for example – are far less precise than radiocarbon dating. Significant issues of scale also exist. Genetic research in Africa has been concerned with historical reconstructions that operate over large areas and significant time-scales. Geneticists rarely recognise intermediate level of genetic identity between the individual and the ethnic group, even we know that many modern African populations include people with very diverse ancestries. Analysts therefore know little about the structuring of genetic variability within ethnic groups or the relationships between ethnic boundaries and ‘genetic boundaries’ – even though this is an important question historically.

Finally, researchers working in Africa – both archaeologists and geneticists – often do not take enough account of research perspectives outside their own disciplines. Archaeologists and other social scientists are often intimidated by the specialised terminologies and complex procedures associated with genetic research. Geneticists often do not appear to appreciate the scope of research in the social sciences, including African archaeology, and in some cases employ inadequate or dated sources in formulating their own historical constructions. At the same time, effective collaboration does occur.

III. EXAMPLES OF RESEARCH

A. Origins of modern humans.

Some of the best-known genetic research in Africa involves the study of maternal and paternal lineages that link modern peoples around the world to the earliest populations of *Homo sapiens* (Cann *et al.* 1987). Current estimates for the most recent common ancestor of modern humans based on mtDNA data yield a date of approximately 160,000 years, in good agreement with skeletal evidence for the appearance of *Homo sapiens idaltu*, with a subsequent expansion of modern humans out of Africa approximately 70-50,000 years ago.

Research on the origins of modern humans in Africa mostly uses data from modern African forager populations. San and Pygmy/BaTwa populations (**fig. 1**) tend to exhibit mtDNA and NRY lineages that exist close to the roots of phylogenetic trees for these genetic systems, with evidence that these lineages were isolated in Africa during much of the Middle/Upper Pleistocene. Even the Sandawe and Hadza, living only about 150 km apart, are claimed to have been genetically isolated for 15-20,000 years, with such isolation ending only within perhaps the last 4000 years (Tishkoff *et al.* 2007).

Such data have implications for how archaeologists view the cultural evolution of modern humans during the Pleistocene. They are especially significant for un-

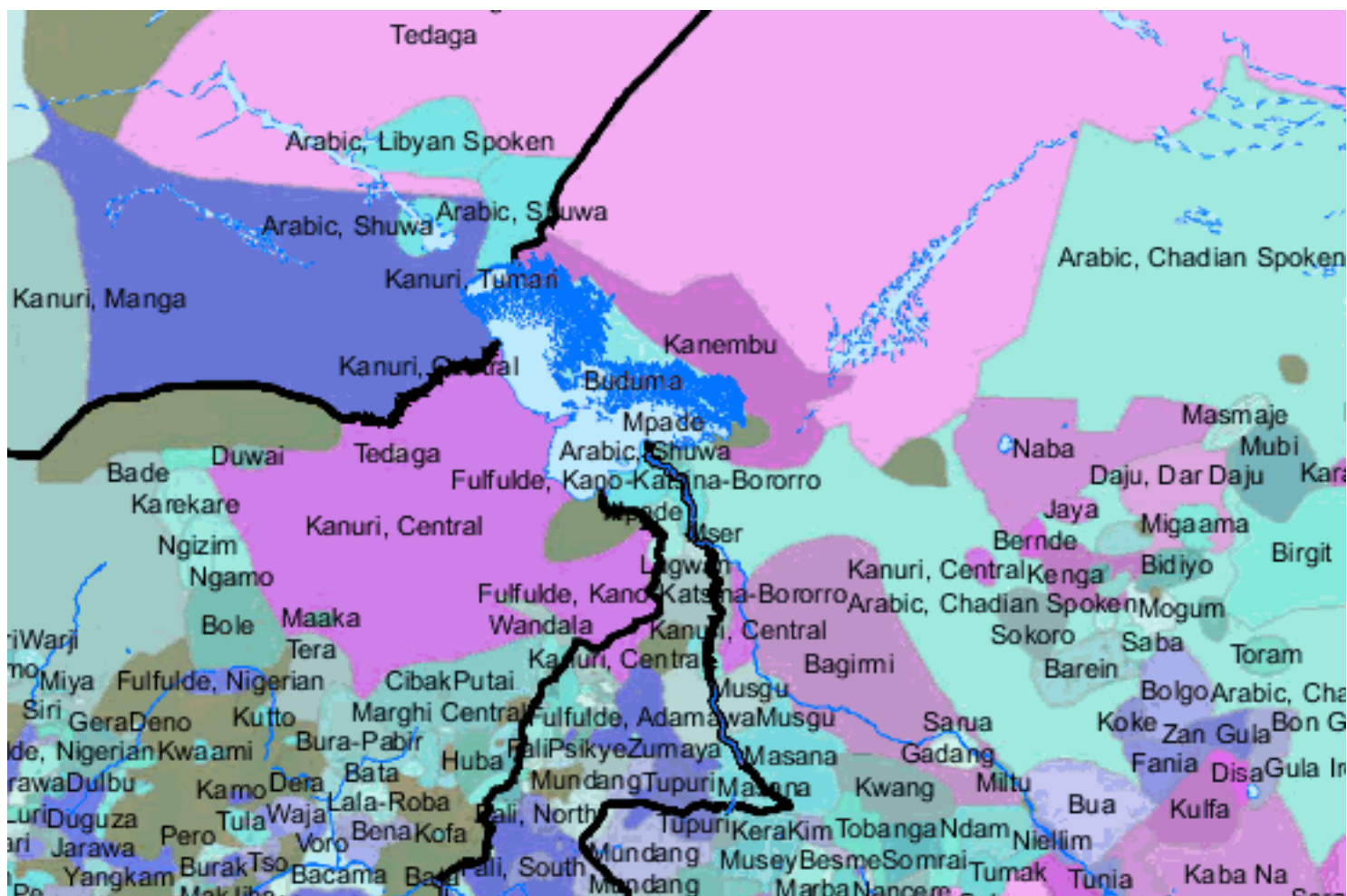


Fig. 3. Some representative ethnic groups of the Lake Chad Basin.

derstanding widespread Middle Stone Age industrial traditions since they imply the existence of only small and isolated human populations in eastern and southern Africa over much of the period of modern human evolution. Archaeological evidence does not, however, seem to support the isolation of these populations for tens of millennia for the late Pleistocene, although that might partly be due to assumptions that archaeologists have brought to their data. It is difficult to understand how environmental change could have enforced population separations on the order of 50-100,000 years, as interpreted from the mtDNA data.

B. The 'Bantu expansion'

Genetic analyses in Africa are often used to generate evidence for prehistoric population expansions and migrations in different parts of the continent, often with the assumption that such population expansions occur as well-integrated 'packages' as farmers spread into a region. Thus, the most intensively studied phenomenon in African genetic research is the 'Bantu Expansion' (Bos-

toen *et al.* 2009; Berniell-Lee *et al.* 2009). There is of course also a large linguistic, archaeological, and ethnographic literature on the processes through which Bantu languages came to be spoken over large areas of Africa (fig. 2), which can be compared to the genetic data. One of the most important contributions of genetic research to this point has been in analysis of migration of Bantu populations in southwestern Africa, an area little known archaeologically.

Genetic evidence indicates that the Bantu expansion was indeed a demographic phenomenon, involving migrations of people as well as a spread of language and culture. At this point, genetic data are not sufficiently fine-grained to inform us about the origins of these population movements, and so geneticists and archaeologists use linguistic reconstructions to locate their origins in the southern borderlands between Nigeria and Cameroon. Genetic data can also provide us with information about the demography of the Bantu expansion. Diversity in NRY (paternal) lineages among modern Bantu-speaking populations is

Chad Basin populations as *paléonigritique*, an obsolete designation dating to before World War Two implying unchanged remnants of an ancient stratum of African humanity, isolated in refuge areas by more advanced societies. At more or less the same time, however, other researchers used NRY data to posit long-range connections between some of these ‘isolated’ Chadic-speaking groups and West Asian/North African populations, a connection which might be associated with early Holocene human movement across a ‘Green Sahara’.

Ten years later, genetic understandings are much richer. We have data on mtDNA, NRY, and autosomal genetic variation for many Lake Chad Basin populations (Coia *et al.* 2005; Cerny *et al.* 2009; Cruciani *et al.* 2010), making possible interesting, albeit preliminary, reconstructions of population relationships and migrations over the last 7-8000 years. These involve an early Holocene movement into the region from the Nile Valley of ancestral Nilo-Saharan speakers, and their subsequent interactions with ancestral Chadic-speaking groups moving out of a drying Sahara (Tishkoff *et al.* 2009). One contribution of genetic research to these issues lies in its identification of significant east-west migrations and interactions south of the Sahara, between East Africa, the Nile and Lake Chad. Archaeologists working in this area have tended not to consider such east-west connections, because of the lack of archaeological data available east of Lake Chad and in southern Sudan. The genetic research thus provides valuable correctives for future archaeological fieldwork.

IV. AN INTERDISCIPLINARY FUTURE

Across the continent, there are still challenges in comparing archaeological and genetic data. How can researchers establish linkages between patterns in these different kinds of data? How do geneticists best account for different historical results when different genetic systems are being studied, just as archaeologists may get different results when comparing different realms of material culture? How do researchers reconcile anthropological evidence that African populations often have very diverse origins, with frequent genetic assumptions that groups are homogeneous? These challenges are significant, but archaeologists should not let these difficulties obscure

the tremendous capabilities that exist in genetic studies of African history. The development of truly interdisciplinary research initiatives, involving genetics, archaeology, historical linguistics, and related disciplines, has the potential to transform our understanding of the African past.

REFERENCES

- Berniell-Lee, G., Calafell, F., Bosch, E. *et al.* 2009. ‘Genetic and demographic implications of the Bantu Expansion: insights from human paternal lineages’. *Molecular Biology and Evolution* 26(7): 1581-1589.
- Bostoen, K., de Filippo, C. & Pakendorf, B. 2009. ‘Molecular anthropological perspectives on the Bantu expansion: facts and fiction’. Paper presented at the Annual meeting of the African Studies Association, New Orleans, LA.
- Cann, R., Stoneking, M. & Wilson, A. 1987. ‘Mitochondrial DNA and human evolution’. *Nature* 325: 31-36.
- Cerny, V., Fernandes, V., Costa, M. *et al.* 2009. ‘Migration of Chadic speaking pastoralists within Africa based on population structure of Chad Basin and phylogeography of mitochondrial L3f haplogroup’. *BMC Evolutionary Biology* 9: 63.
- Coia, V., Destro-Bisol, G., Verginelli, F. *et al.* 2005. ‘mtDNA variation in north Cameroon: lack of Asian lineages and implications for back migration from Asia to sub-Saharan Africa’. *American Journal of Physical Anthropology* 128: 678-681.
- Cruciani, F., Trombetta, B., Sellitto, D. *et al.* 2010. ‘Human Y chromosome haplogroup R-V88: a paternal genetic record of early mid Holocene trans-Saharan connections and the spread of Chadic languages’. *European Journal of Human Genetics* 18: 800-807.
- Tishkoff, S. A., Gonder, M.K., Henn, B.M. *et al.* 2007. ‘History of click-speaking populations of Africa inferred from mtDNA and Y chromosome genetic variation’. *Molecular Biology and Evolution* 24(10): 2180-2195.
- Tishkoff, S. A., Reed, F.A., Friedlaender, F.R. *et al.* 2009. ‘The genetic structure and history of Africans and African Americans’. *Science*: 1172257. <http://www.sciencemag.org/cgi/content/abstract/1172257v1>