

Far-travelled fragments

Archaeology wants to trace intra-African connections by analysing pottery

By Sonja Magnavita and Oumarou Amadou Idé

Travelling tradesmen, pilgrimages and visits to relatives, medical tourism and labour migration: Africa is extremely mobile. That is, however, far from new. With the help of inconspicuous sherds of pottery, African archaeology researchers at Goethe University Frankfurt are tracing the travel routes of earlier millennia.

People in Africa connect. Constantly, everywhere and over various distances. The local weekly market lures traders and customers from the wider region, the service area on the motorway invites people in transit to take a relaxing break. The place of pilgrimage is a strong magnet for believers from near and far, and wedding celebrations entice relatives even from other parts of the country. The reasons for

travelling are many and can be economic, religious, social or political. What is found everywhere today may also have been important to human society in times long past. When history handed down in writing or by word of mouth falls silent, it is archaeology's task to make purely material legacies speak too.

Similarly to the present day, we can assume that there were very wide-ranging motives for people or things moving from one place to another. As a rule, looking at purely material sources does not disclose a lot about these motives – this especially applies for the legacies of our consumer society: if a broken plate from a well-known Swedish company ends up in our household rubbish, it reveals nothing about whether the owner had purchased it in the furniture shop close to home, received it as a gift from a third party, or even brought it himself



To date, archaeological studies of interregional contacts within Africa have mainly concentrated on the analysis of rare items such as prestige goods. For example, a number of copper alloy and glass artefacts examined in the past appear to corroborate suggestions from written sources that various major, early historical places in West Africa and the Sahara were once connected via trade routes to and from North Africa. For example, glass beads from the West Asian region and brass from the Mediterranean, among others, have been discovered during excavations at various early historical sites between Mali, Niger and Burkina Faso, that is, far apart from each other. However, since such finds are extremely rare, it is difficult to make general statements about distribution mode, trade networks and flow of goods. The number of glass artefacts from the time before 400 CE lies in the single-digit (!) range for the entire greater West African region and that

The fragment originates from the early medieval site of Marandet in today's Niger and was once part of a bottle-shaped vessel that had been transported across the Sahara from North Africa. Certain manufacturing features already corroborate its distant origin, but this can also be proven by means of chemical methods.

of non-ferrous metal artefacts is not much larger. Little is known about the interaction of such places with others in the wider region from other sources either: there is no written evidence for this, and comparable unique finds are lacking or have not been analysed.

from the region where it was made – whereby quite other constellations would also be conceivable. Even if speculation might sometimes be appealing – when looking at almost exclusively material sources, like in prehistorical and early historical archaeology, first of all reliable evidence is called for.

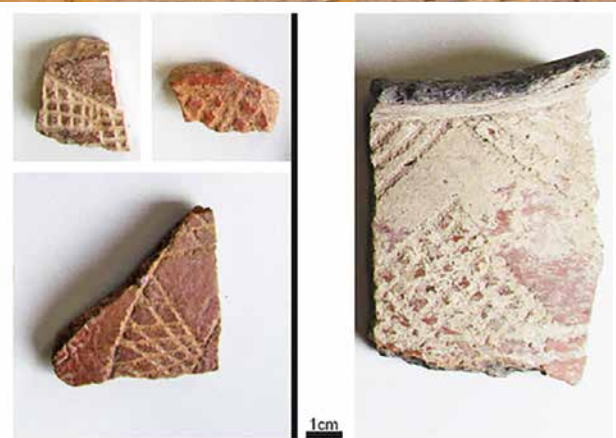
Evidence for the mobility of objects

The fact that an object has moved from one place to another can soonest be laid bare if it is provable that it clearly originates from a different place than where it was found. Was a special material used, for example, that does not exist in the wider area where it was found, such as a seashell far from the coast or an exotic rock? Special manufacturing techniques or styles, which are proven only to have occurred in a specific region but not near the site where the object was found, also often indicate directly via the object itself that the region of origin and the region where it was found are perhaps not identical. But this is where things can already start getting difficult: What if specialists from that known production region worked at the later site where the object was found and applied their special traditions and techniques there? It is impossible to see that from an artefact with the naked eye. To find out whether an artefact is of local origin or not, archaeology can today, however, draw on increasingly sophisticated scientific analysis methods.

Making sherds speak

A new research project on the prehistoric and early historic archaeology of Africa at the Institute for Archaeological Sciences of Goethe University Frankfurt will now pursue an entirely different path – and prove that the study of archaeological pottery, which is available in large quantities, ideally complements rare objects. As the most common find in archaeological sites of recent prehistory and early history, sherds are a suitable instrument for revealing connections between places and areas in neighbouring regions. Similar to other human-made objects, in the case of pottery, evidence obtained through scientific provenance analyses can also be included, in addition to evidence regarding style and manufacturing technique.

With the help of extensive analyses of the chemical composition of pottery from known early historical sites in West Africa and the Sahara, it is possible to obtain new, tangible evidence for interregional contacts in the first and early second millennium CE. Preliminary work using portable X-ray fluorescence analysis (pXRFA) on pottery finds from Marandet, an



Snapshot of a caravan of dromedaries at the archaeological site near Marandet (above). It is here that the three sherds (left) were found.

However, they match specimens in type, make and chemical composition such as the one shown on the right from the Lake Chad region.

early medieval trading place near Agadez in the Republic of Niger, showed very promising results, especially regarding trace elements in the fired clay. In this way, locally produced pottery from Marandet, which is located on the edge of the Air Massif, could be distinguished from likewise locally produced pottery from neighbouring regions such as the inner Chad Basin or the eastern arc of the Niger River because the proportions of certain main constituents and trace elements in relation to one another produced a “fingerprint” characteristic of the respective region of origin.

This conjecture could be verified on the basis of such a chemical fingerprint of pottery assumed – due to its stylistic and technical characteristics – to have been imported from neighbouring regions. In some cases, the foreign-looking pottery could indeed be confirmed as chemically consistent with pottery from the presumed region of origin. However, some initial assumptions had to be corrected: pottery with characteristic stylistic features from contemporaneous cultures on the eastern arc of the Niger River was revealed as evidently made locally in Marandet.

The aim now is to corroborate the findings from the preliminary work. To this end, further pottery inventories will be incorporated, and the differences detected in the chemical fingerprint examined in more detail. Since no comprehensive “chemical maps” of potentially exploited clay deposits in Africa are available and cannot be compiled in the foreseeable future either, the project will deal exclusively with archaeological pottery. It will not be possible to

IN A NUTSHELL

- Extensive human mobility is characteristic of the African continent. Archaeology might provide insights as to whether this was also the case in earlier centuries.
- To date, archaeological studies on interregional contacts in Africa have concentrated on the analysis of rare items such as prestige goods.
- A German Research Foundation project at Goethe University Frankfurt is also using scientific methods to examine the large number of ceramic finds.
- Preliminary work in the Republic of Niger has yielded promising results: for example, it was possible to distinguish locally produced pottery from one region from likewise locally produced pottery from neighbouring regions on the basis of their proportions of certain main constituents and trace elements. Each region of origin evidently has its own characteristic “fingerprint”.

identify a specific production site in this way, but it will be possible to unveil connections between regions.

The finds used originate from sites in Mali, Chad and Niger that have already been archaeologically examined and will be studied in close collaboration with those responsible for the respective material. The project, which will be funded by the German Research Foundation for the next three years and includes a qualification position, is an integral part of the foundation's Priority Programme "Entangled Africa: Intra-African Relations between Rainforest and Mediterranean (approx. 6,000 to 500 years BP)" (SPP 2143), which has already been running since 2019 and is coordinated by the German Archaeological Institute. In a total of ten sub-projects, researchers are dealing systematically with questions about intra-African connections at very different levels and in various regions of Africa. ●

Project title

Tracing Connections:
Chemical composition analysis
of archaeological pottery as
indicator of interregional contacts
in Western and Saharan Africa
before AD 1300

Project Manager

Professor Sonja Magnavita

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The author

Sonja Magnavita, born in 1974, is Professor for Pre- and Protohistoric Archaeology of Africa at the Institute for Archaeological Sciences of Goethe University Frankfurt. Having studied and earned her doctoral degree in Frankfurt, she worked on different projects in West Africa and, as co-editor and publisher, developed the Journal of African Archaeology into an acknowledged peer-reviewed journal. She earned her postdoctoral degree (habilitation) at RUB (Ruhr-Universität Bochum); since 2020 she has taught and conducted research in Frankfurt.

s.magnavita@em.uni-frankfurt.de



The author

Oumarou Amadou Idé, born in 1964, is Research Director (CAMES) for Prehistory/ Archaeology at the Institut de Recherches en Sciences Humaines (IRSH) of the Université Abdou Moumouni de Niamey (UAM), where he currently heads the Art and Archaeology Department. He is President of the Scientific Council of the Centre National de Recherche Scientifique du Niger (CNRS-Niger) and a member of the Scientific and Pedagogical Council (CSP) of the Ecole Doctorale (ED)/ Lettres, Arts, Sciences de l'Homme et de la Société (LARSHS) of UAM.

oumarou.ide5@gmail.com