Megalithic monumentality in Africa: from graves to stone circles at Wanar, Senegal

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The World Heritage Site of Wanar in Senegal features 21 stone circles, remarkable not least because they were erected in the twelfth and thirteenth century AD, when Islam ruled the Indian Ocean and Europe was in its Middle Ages. The state of preservation has benefited the exemplary investigation currently carried out by a French-Senegalese team, which we are pleased to report here. The site began as a burial ground to which monumental stones were added, perhaps echoing the form of original funerary houses. Found in a neighbouring field were scoops left from the cutting out of the cylindrical monoliths from surface rock. While the origins of Wanar lie in a period of state formation, the monuments are shown to have had a long ritual use. The investigation not only provides a new context for one of the most important sites in West Africa but the precise determination of the sequence and techniques used at Wanar offers key pointers for the understanding of megalithic structures everywhere.

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Introduction

The megalithic phenomenon in Senegambia belongs to the protohistoric period, early second millennium AD, which is closely linked to the context of emerging states (Bocoum 2000). Megaliths were erected in association with the establishment of state structures in West Africa, first in the area delimited by the Niger and then as far as the Atlantic coast (Gallay 2011). Even today these monuments signal strong identity values, as the megaliths symbolise an ancient history that is specifically African.

The megaliths of the Senegambian area near the Atlantic coast are characterised by upright blocks or pillars of laterite, carefully worked to a smooth surface. Most are set in a circle, others are isolated, and yet others, dubbed frontal stones, were erected east of the stone circles, as single blocks or in one or more rows of parallel stones. Among the frontal stones, those that exhibit two upright parallel branches, sometimes held together by a tenon, have been called lyre-stones (see below); there are no parallels for them in the African megalithic tradition. All the stone formations seem to mark underlying burials.

In this region, some 29 000 upright stones making up close to 17 000 monuments are known from some 2000 sites (Martin & Becker 1974). Delimited in the south by the river Gambia and in the north by the Saloum, the complex occupies an area of c. 30 000km², from the Bao Bolon basin in the west to the Sandougou in the east; this corresponds to one site per 15km², and this density is even greater in the western part of the distribution area. The megaliths of Senegambia were drawn to the attention of the academic community from the end of the nineteenth century onwards (Todd & Wolbach 1911; Jouenne 1918). Old glass slides recently rediscovered in the archives of the Institut Fondamental d’Afrique Noire (IFAN) in Dakar show that the megalithic sites were once located in wooded areas, in a landscape very different from that of today, although not necessarily representing any earlier period (Figure 1). The phenomenon is generally ascribed to a period between the seventh and fifteenth century AD, but secure dating evidence has remained sparse.

In the 1970s, an accurate inventory of these monuments was prompted by increased agricultural activity that opened up the landscape and allowed greater access. The monuments, which have been compared, erroneously, to African mini-Stonehenges, are still largely unexplored; in Senegal, the work carried out by Thilmans and Descamps remains essential (Thilmans et al. 1980) as is that carried out around the same time by Alain Gallay (Gallay et al. 1982, 2010). Four megalithic sites, Wassu and Kerbach in Gambia, and Sine Ngayen and Wanar in Senegal, were listed in 2006 as UNESCO World Heritage Sites. New excavations, directed by Holl and Bocoum, have been carried out since 2002 on the site of Sine Ngayen (Holl & Bocoum 2006; Holl et al. 2007).

Investigation of Wanar

The site of Wanar in the district of Kaffrine in Senegal (coordinates: 28 P/X–433 215/Y–1 531 930) has not been investigated previously (Figure 2). It contains some 20 megalithic monuments, including a double circle as well as another circle accompanied by two frontal lines, and is characterised by numerous lyre-stones. Following some exploratory sondages in 2005, a French-Senegalese cooperative project was started in 2008 to undertake research in
advance of a mise en valeur of the monument (Laporte et al. 2009). The intervention required careful planning. During the dry season the clay sediments dry out, become uniform and have the consistency of powder, so that stratigraphic excavation is impeded. Excavation campaigns were therefore programmed at the end of the rainy season, with the dry season reserved for survey work.

Our results are based on a detailed examination of the stratigraphy combined with open area excavation of the monumental structures which in the past have mainly been studied through the burial assemblages. Concerning the latter, we have benefited from the presence on site of a physical anthropologist, which allowed us to develop methods of recording and understanding burials that have now been widely accepted (Duday 2005). The interpretation of the structural sequence has also benefited from experience acquired in other contexts and for other forms of megalithic structures (Joussaume 2003).

The burial pits: funerary structures of varied types

Excavation confirmed that the burials had preceded the erection of the standing stones, and at least two types of grave were identified: large pits sealed by a mound and deep pits with
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Figure 2. Plan of the cemetery of Wanar, Senegal: A) microtopography, view from the south-east (plan: R. Bernard); B) bipartite organisation of the cemetery with monuments made of short and squat monoliths in the north, taller ones in the south (graphics: F. Bertin, L. Quesnel & L. Laporte).
a narrow mouth, similar to storage pits. The first type was originally described by Gallay at Sinthiou Kohel (Gallay et al. 1982). Elsewhere, as for example at Sarré Dioulédé (Thilmans et al. 1980; Gallay 2006a) a similar arrangement is suggested by the distribution of human bones in the soil under the monumental structure. Elsewhere again, the arrangement of human bones suggests that they were constricted within a deep, narrow cylindrical feature, as is the case, for example, at Monument 28 at Sine Ngayen (Thilmans et al. 1980).

At Wanar it has been possible to define the contours and edges of funerary pits of both types. The burial pit under Monument XIX was dug to a depth of more than 80cm from the surface of the ground, which is 40cm below the present ground level. This 4.5 × 4.5m quadrangular pit with rounded corners had vertical sides. The 3m-diameter perimeter of the megalithic monument is similar in plan and was erected over the south-western corner of the pit, sealing part of its backfill (Figure 3). A few mainly disarticulated human bones seem to have been thrown into the lower part of this backfill. A few long bones were found associated with a set of three metal bracelets, two made of iron and one of copper alloy, set vertically and next to each other (Figure 4).

The burial pit found in the centre of Monument I is very different. It had an oval mouth, just over 1.5m in length and the sides expanded downwards as the fill was removed (Figure 5). The upper part of this fill, at least, contained numerous human bones that had previously been carefully arranged within a container made of perishable material. Some of these bones belong to an individual whose mandible was radiocarbon-dated to between AD 1047 and 1255 (Lyon-7138 (GrA): 865 ± 35 BP), with the greatest probability lying between AD 1150 and 1230 (Centre de Datation par le RadioCarbone). Three samples, most probably belonging to three individuals, were submitted for dating but only one contained sufficient collagen. Further results are awaited. A small gold ring and an iron buckle were recovered, associated with further human bones. This pit was partly cut by a second feature, 1m in diameter, which only contained very fragmented human bones. As can be expected, it cannot be deduced a posteriori from the distribution of bones or skeletal parts alone whether these were actually deposited at the same time.

The management of the bodies: the contribution of field anthropology

The hypotheses about human sacrifice put forward by Thilmans (Thilmans et al. 1980) created much interest in the Senegambian megalithic phenomenon among the academic community. However, the evidence seems to show all the characteristics of what the ethnologist Testart (2004) describes as accompanying burials. Gallay (2006b) uses this aspect of social anthropology to paint a broad panorama of recent megalithism in the world, in which the Senegambian phenomenon plays a significant role. This author returns to the subject in a more recent work, a well-documented and extremely detailed presentation of the protohistoric communities of western Africa (Gallay 2010b).

New fieldwork has however refined a classification that was somewhat too systematic: the renewed excavations of the cemetery of Sine Ngayen have shown greater variation in the funerary rituals than had first been put forward, for example the presence of secondary deposits (Holl & Bocoum 2006). A re-examination of the published evidence
Figure 3. Monument XIX at Wanar: superimposed megalithic structure and burial pit: 1) collapsed megalithic structure during first investigation; 2) deeper burial pit and human bones (photographs: L. Laporte; plan: A. Delvoye & V. Dartois; graphics: F. Bertin, L. Quesnel & L. Laporte).
and of the data preserved in excavation archives has allowed us to better understand the nature of funerary rituals conducted there (Cros et al. in press). The body of the individual buried in the centre of Circle 1 at Tieké Boussara, which has a frontal lyre-stone, probably decomposed in a void within two lateral rows made of four or five reused monolithic fragments; this suggests that there had been a structure made of perishable materials built above the ground surface on which the body was laid. At Mbolop Tobé the body of one of three individuals recovered in a similar stratigraphic position seems to have been introduced into the grave when the other two bodies were already in advanced stages of decomposition; this suggests that the structures made of perishable materials were still accessible before the first backfill and construction of the mound.

Our own work at Wanar confirms this variability (Figure 6). The burial rituals that are connected with deep pits seem to be more complex than the simple inhumation of a body in a principal burial pit; the link with the deposition of bodies or human bones in the upper fills of these pits does not always seem as straightforward as had been envisaged. Furthermore, the presence of structures made of perishable materials hints at the existence of funerary houses, built or transported to the grave at the time of the funeral. This practice is known from ancient texts over the whole of western Africa and belongs to a tradition that has survived practically down to the present, for example among the Serrer of Senegal (Becker & Martin 1982: fig. 5D). At Wanar, the numerous architectural fragments made of earth—bricks, joints, plaster and sometimes decorative elements—found in the upper fills of Monument XIX are one of the rare sources of information available about the settlement structures of the protohistoric communities who buried their dead on the site. A large ceramic object recovered in front of Monument I could be interpreted as a ceremonial vase support (Figure 7). In Cameroon and Nigeria some of these ceramic objects also sometimes serve, even today, as ridge tiles (Seignebos 1990).

Standing stones

Three varieties of stone architecture can be distinguished at Wanar: two types of stone circle and a scheme of frontal stones set in rows. The two types of circle, both also known at Sine Ngayen (Thilmans et al. 1980), are shown in Figure 8. One type (foreground) consists of tall and slender standing stones, cylindrical in shape and set close together. These are concentrated in the southern part of the cemetery, except for Monument XIX. The other type (Monument XX, in the background) uses shorter and squatter monoliths of trapezoidal section, more widely spaced. These latter circles also regularly feature a stone on the west side, shorter and squatter and sometimes with a pointed top, not standing but lying obliquely

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Figure 5. Burial pits in the shape of storage pits: A) two successive burial pits dug into the original ground surface located under the base of the internal monoliths of Monument I at Wanar (photograph: L. Laporte); B) Sine Ngaen, circle 28: the shape of the pit can be deduced from the volume of bones excavated (excavations by G. Thilmans & C. Descamps; photograph: Archives IFAN); C) detail of the western pit; D) western and eastern pits under excavation (photograph: L. Laporte).

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Figure 6. Monument I, pit 1, at Wanar: top of the backfill showing arrangement of the bones of at least two individuals in a container made of perishable material (photograph: J.P. Cros).

on top of what is left of the earth filling. The type 2 circles are all located in the northern part of the burial ground. By contrast, the stones of the frontal lines seem to be entirely at odds with their corresponding monuments, be it in disposition, dimension, shape or number. There are indications that these three types of structure represent chronological stages (see below).

Although the monumental arrangement that signals the presence of a grave as a positive feature is seen today as a circle of discrete upright stones, where one can circulate freely, this is the result of disruption to the original monument and does not correspond to the initial design (Laporte et al. 2009). Monument I at Wanar can serve as an example (Figure 9). It is the only double circle in the burial ground. The monoliths of the inner circle fan out, i.e. they are touching at their base but splay out towards their tops. This is probably the result of outward pressure from the collapse of a ring of vertical close-set monoliths constituting the revetment of an earth-filled interior and providing the external façade to a cylindrical or drum-like monument. The monoliths of the outer circle are squatter in shape and set less firmly into the ground. They are shaped all over, in contrast to those of the inner circle which are only shaped on their external façades. Spaced at wider intervals, some of them collapsed in random directions as not put under pressure from an inner fill. This outer circle could then be more precisely described by the term pérístalithe, surrounding a more classical monument.

Where the stones that revetted the circular mounds were not closely spaced, the gaps between them could be found filled with laterite rubble, which denotes a preceding drystone wall jacketing the mound. An example is Monument XIV (Figure 10). A similar wall, excavated at the site of monument 17 at Kodiam in Senegal, survived to a height of ten courses (Thilmans et al. 1980: fig. 62). Thus the earth monument—either a raised platform or a filled-in cylinder—could have originally been provided with a façade, either in the form of a drystone wall, a ring of upright shaped blocks or a combination of drystone walls and upright blocks. The pressure exerted by the backfill accumulated inside the cylinder explains the breakage at ground level or the fanning out of monoliths that were not set deeply enough into the ground. After abandonment, the soil accumulated inside the monument was spread over the surface, through surface water run-off. A micro-topographic survey of the entire Wanar cemetery shows such erosion cones around each monument (Laporte et al. 2009). Stratigraphically, the collapse of the upper parts of the intercalated drystone walls

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is marked by a layer of laterite nodules, which sometimes forms a halo around the circle (Thilmans et al. 1980: fig. 59).

The quarries where the stones were extracted are less than 300m to the north-east of the cemetery of Wanar. They are the only lyre-stone quarries so far discovered (Figure 11). Wanar alone accounts for a third of all the lyre-stones catalogued in the Senegambian area (Figure 12); elsewhere cemeteries rarely contain more than one or two lyre-stones (Laporte et al. in press).

**Stratified levels: elements of a relative chronology**

A few instances of activity around the frontal stones or the façades of the monuments have been mentioned in the literature (Hill 1980; Thilmans et al. 1980; Holl et al. 2007; Gallay 2010b) but none has been defined in their whole extent. At Wanar an area of laterite gravel was found spread around the frontal arrangement associated with Monument XIV (Figure 13). This patch was quadrangular, with rounded corners, and its long axis is oriented north-south, aligned with the adjacent monument. A deposit of four vessels, of which three were upside-down and had pierced bases, was found in the west, while in the east there was another deposit made up of large sherds of substantial vessels whose bodies carried impressed decorations. Some sherds appear to underlie the laterite gravel spread, which has yet to be totally excavated.

The collapse of the drystone walls intercalated between the monoliths of Monument XIV also shows a deposit all around the monument, as is the case for the surroundings of Monument XIX; here the roll of the laterite nodules appears to have been interrupted by a north-south linear feature, later and distinct from the edge of the underlying burial pit (Figure 14). The intercalated drystone walls of nearby Monument XX to the south also collapsed, but at a time when the ground level was already several tens of centimetres higher; it is on this surface that the carinated vessels were deposited in front of Monument XIX. Such deposits were made when the monument was in ruins: they postdate the collapse of the intercalated drystone walls but predate the collapse of the monoliths, some of which overlie the pottery. Finally, the monoliths of Monument XIX are much more deeply set into the ground than those of Monument XX.

We can deduce that the current aspect of the monuments is not the result of a single deliberate destruction but of a slow disintegration over time. Monument XX, with short and
Figure 8. Spatial relationship between Monument XIX under excavation and Monument XX (photograph: L. Laporte).

Figure 9. Monument I consists of an internal circle of upright stones initially joined together and of an external circle of kerbstones made of separate and regularly spaced uprights (photograph: L. Laporte).
Figure 10. Monument XIV at Wanar: façade of a cylindrical monument showing, in elevation, the intercalated drystone walls and proposed reconstruction (drawing: A. Delvoye & V. Dartois; graphics: F. Bertin, L. Quesnel & L. Laporte).
squat monoliths, was built well after Monument XIX, which has slender and tall monoliths, a trend that may perhaps extend over the whole of the cemetery (Figure 8). The deposition of ceramic vessels, one of the most iconic elements of Senegambian megalithism, can happen after the total or partial abandonment of the monuments. Our interpretation will take into account all these elements of a relative chronology, also integrating the results of a seriation of the pottery recovered at Wanar, currently the object of a university-based study. This will then allow us to confront the results with those obtained at Mbolop Tobé (Gallay 2010a).

**Discussion**

In spite of poorly preserved collagen, a dating programme has begun which is likely to place the funeral activity of the cemetery in the twelfth or thirteenth century AD. The sequence can be interpreted as having three distinct functional phases. First, graves were cut into the subsoil with attendant and varied funerary rites, including mounds. Second, standing stones were raised around mounds, subsequently collapsing. And third, frontal stones were erected and became the sites of various ritual activities, for example the deposition of ceramic vessels. These three phases are obviously not unconnected and can be combined in multiple ways. A grave that was never marked by anything more substantial than the slight mound of its backfill can be associated only with a few frontal stones.

On the other hand, it seems that the presence of stone architecture is always linked to a single event, defined in time. No repair, no addition, no transformation of the architectural elements has been observed to date, if we make an exception for the double circles. Later,
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Figure 12. Lyre-stone in front of Monument XVIII at Wanar (photograph: L. Laporte).

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the degradation of their initial configuration will not be a hindrance to the continuation of ritual activities in the vicinity of the monuments. In particular, nothing prevents us from thinking that new frontal stones were added, sometimes during a long process of decay.

At Sine Ngayen, the phasing proposed for the double circle of the cemetery rests on the superposition of deep graves and of the internal circle; its excavators envisage that these deep graves were first made within the perimeter of the external circle (Holl et al. 2007). Each circle of upright stones would correspond to a distinct phase in the architectural sequence of the site, each stage associated with different funerary practices and even a change of function for the whole arrangement. An alternative hypothesis, that of a circular monument surrounded by a péristalithé, cannot be excluded: at Wânar, at least, the double circle of
Figure 14. Monument XIX at Wanar: collapse of the intercalated drystone walls. Note the presence of a north-south limit at the front, parallel to the axis of the frontal stones (plan: A. Delvoye & V. Dartois; graphics: F. Bertin, L. Quemel & L. Laporte).
Monument I corresponds to a circular monument surrounded by a kerb, while the elevation of Monument XIX only covers in part the burial pit that underlies it.

Within a single cemetery it seems, therefore, somewhat simplistic to oppose the burials that are marked above ground just by a slight mound, or sometimes by a few isolated frontal stones, to those which have had a megalithic monument erected over them. We have seen that the graves correspond to negative features of varied types, themselves associated with diverse funerary practices or treatment of the body. It is difficult, on current knowledge, to link this diversity to the presence or absence of above-ground features. Conversely, the categorising of types of stone architecture cannot, by itself, account for the whole: by opposing drystone circles to standing stone circles, it is only the aspect of the façade of the monuments that is being addressed, both of which, in any case, represent earth infill or a raised platform.

Does the spatial distribution of the megalithic monuments and the so-called *peripheral mounds* necessarily reflect the chronology of underlying graves? Or does it just reflect the will to concentrate in one place, today considered as the centre of a cemetery, architectural structures built of durable materials? The centripetal model, which has been at the core of the analysis of several cemeteries, as it has been for the seriation of the assemblages recovered (Gallay 2010a), needs to be revisited in this light.

**Conclusion**

We do not yet know where our continuing dissection of architectural elements above the protohistoric ground surface at Wanar will lead us. But we can be sure that they will find their place in the vast family of funerary platforms and stone cairns so frequently encountered over the whole of West Africa in different forms and probably built at different times. In the upper basin of the Senegal river there are for example some stone tumuli (cairns), called *plate-formes* or *bazinas*, such as the tumulus of Diakala, which overlay the remains of two contemporary burials of individuals who died probably sometime in the middle of the first millennium AD (Dupuis *et al.* 2006). Still in western Mali, but this time in the basin of the Niger, the cemetery of Ntondomo at Diarrabougou comprises nearly 150 barrows or above-ground stone circles; those that have been excavated had a stone cist in the centre that contained neither artefacts nor bodies (Raimbault 2006). This cemetery is only a few kilometres away from a dozen monoliths, some of which are still standing and which can be as high as 2m. We can also cite the circular platforms of northern Guinea, whose surrounding drystone walls are interrupted at regular intervals by large upright dressed stones; the platforms are supposed to be covering burials, according to oral tradition, but none has, to our knowledge, been excavated (Robert 1997). Conversely, considering the large burial pits, the term tumulus has been used merely to emphasise the difference between the only such structure ever to have been really excavated in the entire megalithic zone, at Sinthiou Kohel (Gallay *et al.* 2010), and the numerous mounds of central Senegal and the western coast (McIntosh & McIntosh 1993). Finally we must not forget that, in all cases, there are ceramics present that show affinities with those found on shell-middens in the Saloum delta or at the mouth of the river Gambia.
While the western part of the Senegambian megalithic area can currently claim to be the best known, the variety encountered within the single megalithic cemetery presented here is remarkable. Identifying even more precisely the choices in burial rite and monumentality that were made, as well as their exact sequence and date, will be necessary before general trends applicable over a wider area can be proposed.

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