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Archeological Implications of Traditional House Construction among the Nchumuru of Northern Ghana

by E. Kofi Agorsah

The understanding and explanation of the spatial consequences of human behavior have become important subjects of study in archeology. No serious archeological reconstruction takes place that does not require a comprehensive knowledge of the way man perceived, valued, and used the spaces and places available to him. Geographers have examined various aspects of this subject for well over a century, and archeologists, by association, have gradually adopted some of their approaches. Using data from settlements of the Nchumuru of northern Ghana, this paper examines the importance to the archeologist of the cultural and natural processes that contribute to the manner in which earth-walled house structures are transferred from the systemic into the archeological record. An attempt is made to demonstrate that knowledge of the mechanisms of construction and maintenance of earth-walled structures and of their deterioration and collapse is essential for identifying the spatial nature of the settlements of past societies. I shall begin by providing a brief introduction to the area and to Nchumuru society.

My research focused on the Nchumuru, a Guang-speaking people that in prehistoric times inhabited large areas of Ghana and still maintains its traditional social system and subsistence practices. My first direct contact with the archeology of the area was in 1972, when I selected the Banda-Wiae area for an ethnographic study as part of my M.A. program at the University of Ghana. My aim was to study the location and distribution of visible material remains within the village as a basis for speculation about what would have become part of the archeological record after its abandonment. Since both ethnographic and archeological data were essential to this task, it was important to select a village that had not been resettled under Ghana's Lake Volta resettlement scheme and one whose traditional economic, political, and social life had suffered little impact from industrial activity. Further, it was important to select a village of manageable size and accessibility relative to the time and resources I had available. A final factor in my choice was my general knowledge of the area; I had been brought up in the adjoining Kete-Krachi area and spoke the Nchumuru dialect fairly well.

Wiae is located about 9 km west of the town of Banda (lat. 8°15'N, long. 0°10'W). Administratively, it is in the Northern Region of Ghana, but culturally it is in the Volta Region. The people of Wiae speak Nchumuru (Nchomobolog), a dialect of North Guang, one of the languages of the Kwa branch of Niger-Congo (Greenberg 1966, Painter 1967). Nchumuru is spoken mainly by communities along the River Daka (locally called Lakg) near where it flows into Lake Volta. "Nchumuru" is the most common written designation for the ethnic group as a whole, and it is used for groups located in the Atebubu area of the Brong-Ahafo Region and in the Nkonya area of Kpando District in the Volta Region. My study concerns the Nchumuru located north of Kete-Krachi. Their traditional paramount village is Nanjuro, about 7 km north of Wiae, but their current center of commercial activity is Banda.

Modern, or New, Wiae (fig. 1) dates to about two decades ago. Located within a loop of the Daka, which forms its southern and western physical boundaries, it is divided into northern and southern halves by the road from Banda. This road becomes a footpath that descends to the riverbank. To the north of the settlement are the Kaaben and many other streams flowing into the Daka, most of which are dry during the greater part of the year. Wiae consists of 91 houses distributed over a total area of about 18 hectares (45 acres). Of this number, 8 are owned by immigrant non-Nchumuru settlers. About a quarter of the area of the village is occupied by a recently built Catholic chapel and the primary-school compound. Generally, Wiae houses are rectangular and have open courtyards.

1 This article is derived from my doctoral dissertation research at the University of California, Los Angeles. I would like to thank my professors Merrick Posansky (History and Anthropology), chairman of my Ph.D. committee, and Timothy Earle (Anthropology), Christopher Ehret (History), James Hill (Anthropology), and William Knapp (Engineering) for their support, criticism, and contributions to the success of my research as a whole and the clarity of the particular portion of my dissertation on which this article is based.

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On the southern outskirts of the village, south and east of the school compound, are the burial ground, an abandoned communally owned cattle kraal, two latrine pits, and the community shrine of the god Dente. On the northwestern outskirts are a latrine pit and a community shrine dedicated to the popular god Sonko.

Old Wiae is located about 250 m west of the modern settlement and covers an area of about 3.7 hectares (9.2 acres). It was destroyed by fire about two decades ago, but its relocation was already in progress at the time. The site presented a good opportunity for observing the noncultural transformation processes that take place in an abandoned traditional settlement. Its walls, shrines, rubbish dumps, potsherds, grinding stones, and other features are still undergoing transformation. People’s memories of the old village are a valuable source of data for speculation about the cultural processes that occurred there. Information about the time of founding of Old Wiae comes from oral traditions (Kumah 1964), colonial travellers’ records (Klose 1899), and records of legal proceedings and colonial administrative reports (Cardinall 1931). The available evidence suggests that the Nchumuru have been in the area probably since the mid-17th century (Wilks 1974, Tait 1961). The traditions of the five clans in new Wiae are unanimous that they originally lived separately in various parts of the Banda-Wiae area and came together to found Wiae sometime before the Gonja wars, which ended around 1713.

Nchumuru society consists of six family groupings, traditionally called nsuro (sing. kasuro)—Aduana, Banda, Chachai, Nchenke, Kpentanai, and Sunwiae. The village of Bagyamso has recently been considered a sixth (Lumsden 1975), but according to tradition Bagyamso and its satellite villages (among them Buafri, Chenderi, Kwadwofo and Kradente) are part of the Banda group, to which Wiae also belongs. Tradition also has it that Wiae is among the lineages that have the right of succession to the stool of the paramount village, Nanjuro. Each of these major groups has its own stool and principal village. A Nchumuru village or town consists essentially of one or more core minor family groups (or patriclans) called mbuno (sing. kabuno), each of which has a male head and its own residential area, ancestral shrine, land, and inter- and intravillage relationships. Generally, a kabuno identifies itself with a particular kasuro. Among the Nchumuru, as with other Guang-speakers, inheritance of property, position, or religious power is by homogeneous transmission (male to the next oldest male, female to the next oldest female) and occurs within the kabuno. There are five mbuno in Wiae: Breniase, Dapoeta, Kpenwiae, Ntrapo, and Tarieso. The kabuno is the most important social unit in the Nchumuru village. Membership in society is determined by membership in a kabuno, which includes not only the living but also, and primarily, the dead. Traditionally, kabuno members are required to live around the ancestral shrine, usually located in the kabuno head’s house.

The concept of the household (lonno) refers to the location and extension of the kabuno. It is also an assertion by a family that a particular space is under its influence or control. Apart from the household head and other family members who eat and sleep in the house, there are some who eat but do not sleep in the house and others who sleep but do not eat there. Of 83 households only 17 (21%) consist entirely of persons who regularly eat and sleep in the house. (That Lumsden [in Goody 1975] provides similar figures seems to indicate similar patterns in other Nchumuru villages.) This situation is not only a reflection of the ordinary flow of persons for reasons of friendship and relationships, but a result of what might be called a “social osmosis” generated by the kabuno system. The tendency in the placement of houses in Wiae, therefore, is toward facilitating access to the kabuno.

Wiae traditional practice requires that a married person have his own house. Many villagers begin to consider building
their own houses in their early twenties. The first house has a minimum of two rooms and is built in one's kabuno area. The location of the house depends upon the occupational priorities of the owner builder and other members of his or her household, how much social proximity to the kabuno head, the ancestral shrine, and relatives is required, conformity with traditional norms, and other factors, economic or political. The building of the first house requires the blessing of the kabuno head, who is the embodiment of the powers of the ancestral spirits.

HOUSE BUILDING IN WIAE

In Wiae the owner of a house is his own architect, designer, and builder. He not only determines the house's original form, but, as he lives in it, constantly alters and improves upon it. He has at his disposal a local supply of labor and materials. Members of his kabuno form his crew for the most part, but other members of the village usually help. The women and girls supply water from the river, and the men provide timber, rope, puddled earth, and thatch and other roofing materials, depending on what each can afford at the time. A few villagers have developed skills in building and are often invited to help in exchange for a few days' free labor on their farms or some kind of extra reward beyond the party usually held for all who help after each day's work.

Most of the building materials are natural and locally obtained. Laterite earth (kyiyiria) is used for the walls and floors of the house and the courtyard. Timber and rope for the framework of the roof and the doorways are obtained from trees such as Entanda africana (kaboya), Lannea acida (kama), Butyrospermum parkii (krenku), and Pilostigma thornii (bowfany). Local grasses provide thatch and materials for mats for the doorways. The accumulation of building materials takes months and is done little by little. The materials are initially stored in or near the huts on the farms and are later transported gradually in head-loads for eventual storage in the backyard of the house or at the building site. Once sufficient materials have been accumulated, construction can proceed, its pace depending on the builder. Materials continue to be accumulated throughout the period of construction.

The verb "to build" in Nchumuru is poe, and poe obu literally means "to mold a house." The same word is used for pottery making. The men "mold" buildings and the women "mold" pots. Both involve approved standards of traditional craftsmanship. The construction process begins with the digging up of laterite earth, usually resulting in a large borrow pit; sometimes the earth is taken from previous borrow pits located adjacent or close to the building site. If the source of the earth is fairly distant (usually not the case), the earth is carried to the site in pans and wooden bowls. There it is heaped 60-70 cm high and then broken up. Water is added, and the earth is trodden under foot until it has the consistency of mortar. Up to this point, the main implements used are the hoe (the same as the one used in farming), water-storage pots, and the matchet. The earth is molded into balls about the size of a rugby or soccer ball. Meanwhile, the plan of the house is marked out by pacing.

The wall is begun with an earth layer 35-45 cm thick and 40-50 cm high. No foundations are used, but blocks of laterite stones are later lined up against the bases of the walls to prevent erosion by daily sweeping and rapid rainwater runoff, which may produce gullies a couple of centimeters deep. This layer is left to dry for several weeks before the next one is added so that the shrinkage cracks will be distributed throughout the walls. Openings spanned by wooden lintels are left for doors and sometimes windows. In five observed cases of house construction in Wiae in 1981, one made room for windows during construction. In the other cases the windows, 45-80 cm wide, were carved out after the completion of the building. This delayed opening of windows, which seems to be associated with the immediate unavailability of window frames, weakens the walls and sometimes generates cracks.

The number of layers depends on the owner. Five to seven layers are usual, the resulting walls being 2-3 m high. The joints in a laterite wall can be easily recognized even several years after construction unless, of course, the walls are plastered. Very little plastering is done on the outside of Wiae walls. The texture of the wall layers may vary considerably, especially where the material comes from different depths in a pit. Sometimes pieces of collapsed walls show different colors and textures.

Only three houses in Wiae were roofed with metal in 1981; the rest were thatched. The frame of the roof is constructed of wood and palm branches (pepane) or Guinea corn stalks. The thatch (kitapa) is tied into bundles that can be easily gripped and thrown up onto the roof. The bundles are then unrolled and the thatch spread over the framework layer by layer until it is covered. Finally, the layers of kitapa are secured to the frame with a web of local rope. A heavy-duty mat of local grass is used to cover the doorway, some 65-75 cm wide and 2 m high. Doorposts and often a crossbar hold the mat in place (fig. 2).

The laying of floors is mainly a female affair and usually a cooperative undertaking. It is also an opportunity for socializing. The main materials used are gravel, cow dung, and a reddish concoction made from a tree bark called kpangya. The main equipment is a wooden container for collecting and depositing gravel and a wooden floor-pounder (kebenben). The same construction process is used for the floors of both houses and courtyards. First the ground is covered with gravel to a thickness of 5-8 cm. (The floor of the courtyard is usually thicker, sometimes 10 cm.) Then it is beaten hard with the kebenben. Recently, cow dung is mixed with the gravel to give it some plasticity. Next, kpangya roots are cooked to make a sticky reddish concoction that is sprinkled on the floor once a day for about eight days. Finally, it is given another, less vigorous pounding. The pounding is usually done in rhythm to the accompaniment of love songs. Earth platforms for beds and smaller platforms to hold large pots and other utensils and personal belongings are built along the bases of the walls. The men's rooms normally have only the bed platform. Today young adults prefer to buy beds instead of building the traditional earth-platform ones. The floor-making process produces a surface that is compact at the top and becomes less so toward the bottom. The durability of the floor depends on how much it has been pounded. The floor of the courtyard gradually crum-

**FIG. 2.** Heavy-duty mat used to cover the doorway of a house; doorposts and crossbar hold the mat in place.
bles at the edges, retreating toward the house walls. Potholes may appear over time. When a floor has developed too many potholes, it is completely stripped off and rebuilt.

**IMPLICATIONS OF THE CONSTRUCTION PROCESS FOR THE STUDY OF PREHISTORIC SITES**

The summary of the construction process just provided has a number of implications for the study of spatial behavior patterns in prehistoric sites. First, the borrow pits from which the laterite earth is taken for the walls eventually become rubbish dumps or storage areas for the households within or near which they are located. Two such borrow pits have been dumps since my visit in 1972, and earth continues to be taken from the unfilled part of one of them. Further, since posts are used only for doorways, postholes cannot be used to determine the location of a wall.

The susceptibility of earth to rainfall erosion and general loss of stability with increase in water content provides the archeologist with an opportunity to study its use-life and the noncultural processes that affect it in the course of its transfer from the systemic into the archeological context. The durability of earth walls may be assessed by laboratory testing, construction and evaluation of a test house, or field evaluation of houses that are under construction, occupied, or abandoned. The field evaluation approach was chosen here because it provides almost the same information as the others at far less cost and in a much shorter time. Study of residential house structures that are under construction or abandoned is advantageous in that there is no need to intrude upon an occupant's privacy. Since builders are often aware of the limitations of their basic constructions, they tend to experiment with various methods of increasing wall durability, the effectiveness of which can also be evaluated. Two such methods employed in Wiae are laying stones along the bases of the walls and supporting walls by placing forked poles obliquely against them (fig. 3).

For successful earth-wall construction, the soil must have sufficient dry strength but be plastic enough to be molded. It should not contain too much clay; if the clay colloids in it expand markedly, it will be difficult to mold and subject to cracking and distortion (Anon 1972). This type of soil is easily recognized by the people of Wiae and usually avoided. The general thickness and height of walls in Wiae houses are those considered suitable for climates with relatively large diurnal temperature fluctuations (Givoni 1974). Therefore, on the basis of its materials and dimensions a house wall in Wiae may crack or warp but is unlikely to collapse. Durability, then, not strength, is the main problem with Wiae earth walls. With a minimum of maintenance the earth-walled building may have a longer life than has been thought. Despite limited resources and a seemingly low level of technology, Wiae houses are efficient natural-resource converters and climatic filters. This observation has strong support from a practical and comprehensive study of mud-wall construction and decay in Ghana by McIntosh (1974), although that study was made in a somewhat different environmental situation.

The characteristics of the individual rainstorms occurring in an area have usually not been considered by archeologists in evaluating the influence of climate on the durability of earth walls, but my study indicates that these require attention. Rainfall in the Banda-Wiae area usually occurs in medium- to high-intensity storms (Wills 1962). In storms of this kind the raindrops are larger than average in diameter and thus have correspondingly higher terminal velocity. The total kinetic energy of such rain has the potential for causing severe erosion (Hudson 1971). No matter how intense, however, rain can cause the deterioration of earth walls only by striking the wall surface directly or by splashing on it from a saturated ground surface. Since house walls in Wiae are normally well sheltered by thick layers of thatch, rain must be wind-driven to cause wall erosion. Further, erosion is likely to be concentrated at the bases of the walls, especially through saturation by capillary action.

The extent of erosion of house walls in Wiae seems to depend in a general way upon the ratio of wall height to eave width, the distance from the ground, and the orientation of the wall face in relation to wind-borne rain. Erosion is often found at the top of walls, indicating that at least some wind-borne rain is inclined to the vertical wall. On abandoned earth walls, the impact of rain is readily observed. Estimating the length of time it would take for earth walls to be completely washed away is a difficult task. If 1,800 kg/m³ is taken as a typical value for soil-unit weight (Givoni 1974), a meter's length of wall may contain two tons of earth. This would allow a rough estimation of the amount of earth involved in a two-room house and of how much rain over how long a period would be required to erode the house away.

Prolonged rainfall during the wettest months seems to cause a rise in the water table, and in low-lying or poorly drained areas moisture is taken up into the walls by capillary action and some seeping through the thatch of abandoned structures. The increase in water content weakens walls, especially at the base, where compression stresses and the dead weight of the wall are greatest, and they may collapse, usually outward.

Consideration of the durability of earth walls provided data that contributed to the formulation of predictions about the prehistoric situation. Not all structural features lend themselves to this task; roofing material, for example, is obviously too perishable to do so.

**ARCHEOLOGICAL CONSIDERATIONS**

The archeological survey and excavations conducted in connection with my study were aimed at the discovery of spatial patterning in early traditional village sites of the Nchumuru. In view of this, emphasis was placed on the locations and distributions of structural features and objects, but considerable attention was also given to the archeological data from which these locations and distributions could be reconstructed. Five main sites were located in the Wiae area (for a map of these sites and a description of their characteristics, see Agorsah 1983a). The predictions of my study were concerned with the Old Wiae settlement as a whole, house forms, the location...
of structural features, artifacts, occupational activities, and the archeological context. The main concern of this paper is the last of these—specifically, the cultural and natural processes affecting the archeological record. Of the five sites located, two—Old Wiae and Oseiaye I—were excavated, and the following discussion leans heavily on the evidence from these sites.

Having observed the settlement of modern Wiae grow, I was able to observe the site of Old Wiae and others in the area gradually decaying. Information on the development of individual houses and structures was obtained from the present inhabitants of modern Wiae, some of whom provided help in tracing the positions of some of the features of the earlier sites. That material remains are not instantaneously produced or hermetically sealed is a fact of archeological research. Even if I had arrived at Old Wiae a few days after it had been evacuated in the wake of the fire, I could not have counted the predicted 57 houses and 350 inhabitants or recorded the locations of all the features of the settlement. However, with adequate background information and understanding of the natural and cultural processes that affected the structures and objects of the past settlement it has been possible to reconstruct it with some accuracy (fig. 4).

Abandoned kabuno and personal shrines continued to be maintained. Even after the spirits had been ritually transferred to the new settlement, the shrine mounds were left intact. This behavior is consonant with the Nchumuru tradition of maintaining permanent relationships with the ancestral spirits and the tabu on removal of anything connected with a shrine. The result was continued accumulation of sacrifice materials—bottles, chicken bones, and cowries. The old site, however, had also become a dumping ground. Even before a settlement is abandoned, a collapsed house is likely to become a dump, and unless a new structure is erected in its place it tends to remain so. Thus the deposition of cultural material from a new settlement represented continuity with the old one, and this was expected to have occurred between Old Wiae and earlier settlements as well.

General processes of site formation and disturbance I expected to find included animal burrowing, plant root growth and tree fall, and the swelling and shrinking of expansive clays in the soil of the site or the soil used for the walls of structural features. The most important consideration was earth-wall decay. First, low mounds made up of collapsed wall material, perhaps mixed with rapidly buried cultural and other organic material, were expected to characterize the site. This combination of organic matter with carbon and heat was expected to result in coalification. As most of the buried material was wood, and assuming that the wood was free from termite attack, blackened wood found in the stratigraphy of the mounds was expected to have been due not to fire but to rapid burial. This prediction was partly confirmed in the Dapoeta quarter at Old Wiae. Secondly, exposed walls were expected to have been subjected to heavy weathering that would produce concentrations of lateritic concretions on their surface. The uniformity of thickness of the beaten floor and the association of the original walls of a room with a single floor level would help to distinguish floors from such wall-surface concretions. A thin layer of light and texturally homogeneous soil material was probably to be considered the result of erosion of lighter clays from the wall of the structure. Material mixed with the earth before construction, such as sherds, was expected to be observable immediately at the base of an earth wall. This was clearly observed at Old Wiae.

Earth obtained for a structure from different locations was expected to show color differences in the stratigraphy that did not distinguish occupation levels. Burnt and stained areas were expected to mark floors, especially of rooms with hearths. These predictions were confirmed at Old Wiae. In brief, the site formation processes predicted depended upon the situation and the structural features or objects involved. Building placement, disposal of the dead, and formation of trash mounds are the results of different but interrelated processes. Predictions regarding the archeological context were difficult to make because it was impossible to identify all the factors interacting at any point in time. Although my predictions as to earth walls, floors, mounds, and other features were confirmed, I recognize the need for more definitive evidence.

Some, if not all, of the above predictions appear obvious and may be considered trivial. This is not the case. Our ability to understand human behavior has been limited by the persistent belief that the way societies behave and think is obvious. Because of it, researchers have learned to ignore many ideas that are both fascinating and important, and useful basic principles have been missed. Research arguments must be clearly laid out, and the aim should be to explain rather than to describe.

OVERVIEW OF THE ARCHEOLOGICAL EVIDENCE

The following overview of the archeological evidence at Old Wiae and related sites indicates a real past but cannot be considered exhaustive of the available evidence for the reconstruction of that past. There is a clear bias toward the reconstruction of the spatial arrangement at the sites. The availability of
local information contributed considerably to the success of the reconstruction.

Old Wiae reconstructed sharply differs in appearance from New Wiae. It has structural features with both rectangular and circular floor plans, and the house structures are in general very compact, becoming less so only at the northern edges of the site. Although clan areas were identified from ethnographic information, no demarcating structural features were discernible. Many shrines, located in the centers of houses, were uncovered. Only four storage structures were recorded, all on the outskirts of the site. It is not clear whether these were for group use or belonged to individual families. Tradition seems to support the view that they belonged to clan heads, who may periodically have stored food belonging to members of their clans. If so, then one can associate the practice with the maintenance of family or clan identities and consider the present-day kabuno system in New Wiae and among other Nchumuru as representing continuity with the past. The identification of this practice may therefore be viewed as supporting one of the conclusions of my study: that the location and distribution of structural features and activities in modern Wiae are a recapitulation of aspects of its past. However, this is only a single test case and cannot be taken as final.

The presence of rubbish dumps on the outskirts of Old Wiae is a feature shared with New Wiae and other Nchumuru sites in the area. The growth rate of dumps at New Wiae suggests that huge dumps would be produced if the site were occupied for a very long period of time. The dumps are useful indicators of the residential area of the settlement.

There are important links between the archeological evidence and the evidence of the construction process obtained at New Wiae. The deposition of the house-wall materials and the cultural objects associated with them is consonant with the earth-wall decay processes observed for structural features at modern Wiae. Another significant link between modern Wiae and the archeological sites is indicated by the results of petrographic analysis of potsherds from the sites surveyed (Agorsah 1983a), in which sherds from earlier sites are found to have been crushed and mixed with clay to manufacture vessels used at Old and New Wiae. The stratigraphic location of sherds in the excavated areas confirms this observation. The observed link between modern Wiae and the earlier sites is important for the discussion of Nchumuru continuity in the study area.

The discussion of this paper deals with a very limited aspect of my research in the Wiae area. However, it demonstrates that the material characterization and identification that are becoming popular in archeology must include the study of the formation and decay of structural features. We need to understand how traditional groups construct their environments, how the structures generated by their cultural behavior stand up to use, and how the nature of the structural features dictates the particular way in which they decay. This aspect of archeological study has only just been initiated in West African archeology (McIntosh 1974, Posansky 1973–76). Although it remains an asset in most archeological endeavors, “common sense”—which is nothing more than our particular set of deeply instilled cultural prejudices—can be disastrous when studying archeological materials. What is needed is a very “uncommon sense” which can be developed from horizon-broadening insights from ethnographic and ethnoarchaeological studies such as the present one.

1. Agorsah is quite right in emphasizing the danger of “obvious” conclusions. Most of us were brought up with the “hard work and common sense” philosophy; while “hard work” is an asset in most scientific endeavors, “common sense”—which is nothing more than our particular set of deeply instilled cultural prejudices—can be disastrous when studying archeological materials. What is needed is a very “uncommon sense” which can be developed from horizon-broadening insights from ethnographic and ethnoarchaeological studies such as the present one.

2. The paper shows that in the Wiae case, as in many other cases documented in West Africa and elsewhere, a site is usually not abandoned suddenly and that certain structures may retain their original function after abandonment while others change function. Even while the site is occupied, there can be functional changes in structures. The importance of this to prehistorians is that many—perhaps most—of the social units in a site may not be determinable. Thus, while very large-scale features (such as relationships of villages to the environment and to each other) and many small-scale features (such as individual shelter or storage or religious structures) may be reconstructed, most of the details of things such as family units and relationships between these units may never be able to be reconstructed.

3. Agorsah’s study also points toward many ways of identifying archeological traces of villages. In tropical West Africa, this is most important: erosion, decay, and heavy vegetation obliterate most traces within a short period of time. Although not mentioned in this paper, there are other ways of locating villages in tropical areas, mainly through changes in vegetation—either deliberate, as in slash-and-burn agriculture or the planting of trees for food, defense, shade, or other purposes, or accidental, as in the changes in flora due to the various cultural rearrangements of the landscape involved in building a village. Also not mentioned specifically but very important in archeological reconstructions are the features of the village area as contrasted with other activity areas. In much of West Africa, impishable artifacts may be found mainly outside of villages. Among some groups these may be ancestral shrines, among others, secret-society meeting places, cattle camps, hunting camps, farm shelters, or burial areas.

Studies such as this one should help prehistorians develop the flexibility of outlook necessary to develop meaningful and testable hypotheses rather than following the sterile path of common sense.

Comments
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Agorsah’s paper is a welcome addition to a growing number of careful ethnoarchaeological studies, the most useful of which are the result of long-term research. Although he “deals with a very limited aspect” of his research in this paper, several interesting lessons emerge from his discussions.

1. Agorsah is quite right in emphasizing the danger of “obvious” conclusions. Most of us were brought up with the “hard work and common sense” philosophy; while “hard work” is an asset in most scientific endeavors, “common sense”—which is nothing more than our particular set of deeply instilled cultural prejudices—can be disastrous when studying archeological materials. What is needed is a very “uncommon sense” which can be developed from horizon-broadening insights from ethnographic and ethnoarchaeological studies such as the present one.

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In recent years I have become convinced that ethnographic research ought to have priority over archeological research in those many parts of Africa in which traditional ways of life are changing so quickly. Already it is too late in many areas to observe material culture that is unaffected by extraneous influences from industrialized societies. Increasingly, I have found myself thinking that if only someone had recorded this or that agricultural system, or building technology, or potting technique, or blacksmithing process, or whatever, in the 1950s...
or 1960s, then the information would be now be invaluable. For too long, anthropologists have given little attention to such things, and archaeologists, such as myself, have thought that it was not their business. Thus I was pleased to see this paper, with its evidence that sound ethnographic recording might be coming back into fashion, and I was particularly delighted to see that the observer was himself a person who belonged to the general region that he was writing about.

The author's description of coursed-mud construction techniques and his discussion of the process of decay of mud structures so constructed is a useful addition to the slender literature on this subject. I for one would have liked to see more details on this aspect of his work. When it comes to the archaeological implications of this evidence, which is what the paper is principally concerned with, Agorsah seems less sure of himself. Ethnoarchaeology is, of course, afad at the moment amongst archaeologists, as also is anything to do with spatial analysis. Agorsah's attempt to contribute to these fields is over-generalized and insufficiently clear in its message. It is a great pity that he did not provide us with some detailed plans and stratigraphic sections to compare the excavated archaeological phenomena observable at Old Wiae with the ethnoarchaeologic phenomena observable at New Wiae. Over 20 years ago, struggling with the very difficult archaeological deposits of Benin City, I wrote a tentative description of how coursed-mud walling could indeed be excavated (Connah 1963:407-11), although some had doubted this possibility. Since then, McIntosh (1974) has added to our understanding of this subject, but Agorsah does not really take us much farther with this nitty-gritty problem of excavation. I hope that he continues his studies of mud-wall decay, but I would urge him to give us some solid ethnoarchaeological data that we can get our teeth into: for instance, a collection of large-scale plans and sections of a series of structures at different stages of decay would be very helpful for excavators faced with the task of identifying and isolating the buried remains of prehistoric coursed-mud structures.

In this connection, one wonders what happened to a project set up at the University of Ibadan, Nigeria, in the late 1960s in which the decay of an abandoned settlement was to be studied on a long-term basis. So far as I am aware, there has been no substantial publication of this work, but then it is often difficult for outsiders to know of local publications if their distribution is limited. Thus we should be particularly grateful to Agorsah for publishing his work in a leading international journal like this one. I trust that he will continue to do this, and I look forward to seeing more of his work. I would suggest, however, that future papers be supplied with an adequate location map, showing the area of study in relation to generally known geographical features that readers in other parts of the world can recognize. I would also urge that plans such as figures 1 and 4 in the present paper should have far more written information on them, just as photographs such as figures 2 and 3 should have clearly visible scales.

by Candice L. Goucher
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Agorsah holds the spatial consequences of human behavior to be basic to an archaeological understanding of past settlements. He is to be commended for a contribution which is provocative in both method and substance. His research recognized at Old and New Wiae an extraordinary opportunity for understanding the spatial patterning of Nchumuru society, in which both the living and the dead affect locational decision making, and the ways in which it might be applied to a demonstrably related archaeological context. Granting the importance of such classic ethnarchaeological studies as the one at hand, there is, at the same time, a need for parallel ecological or regional studies employing a larger scale of analysis. The implications of Agorsah's work for the understanding of spatial behavior on industrial sites in West Africa suggest the need to integrate evidence about settlement and residence with our emerging awareness of larger-scale, specialized communities (such as iron-smelting sites or urban trade centers) with the ability to affect profoundly a larger catchment and perhaps even alter locational "rules" of peripheral communities. Of particular relevance to my own research in one such neighboring industry region (Bassar, Togo, a few kilometers from the Ghana border) were observable similarities in house and iron-smelting furnace construction and maintenance (indeed, the furnaces attain or exceed the height of residences) and the use of identical forked poles for gaining access to and assisting in the support of both structures. Agorsah's work also suggests that considerations of the decay and durability of built residence structures may enable us to assess the possibility of dating and identifying industrial furnaces.

The study illustrates the axiom that meticulously executed research which stands on a sound theoretical and methodological basis contributes to wider scholarship, perhaps even beyond the stated boundaries of research design. I am bothered by a discernible internalist temptation in the ethnoarchaeological approach to avoid connections with a wider historical perspective. If, as Agorsah concludes, "the location and distribution of structural features and activities in modern Wiae are a recapitulation of aspects of its past," then surely the logical step would be to consider the historical setting of Old Wiae. It is equally clear that the built environment (architecture and settlement patterns) and the natural environment will have to be understood as dynamic and integrated in assessing the historical implications of both realms of spatial expression. I hope that the author will be able to extend his research both spatially and temporally.

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While traditional archaeology has been mainly concerned with the excavation and classification of material remains, the ultimate aim of archaeology is to discover (or reconstruct) the structure, institutions, symbols, and meanings of bygone societies from the material finds, and in this direction New World archaeology has stolen the lead from that of the Old World.

To reconstruct the life of an extinct society requires a great deal of informed imagination. In this task the corpus of ethnographic studies of contemporary societies at various levels of evolution can serve as sensitising collaborator. Agorsah's paper is a laudable attempt, though a tentative and exploratory one, at combining archaeological and anthropological perspectives.

In the case of Old Wiae, which is not very old, ethnographic information gathered from informants in New Wiae came in handy. Problems arise when one sets out to study past societies of greater time depth. Even here, however, a meaningful marriage between archaeological and anthropological perspectives has yielded unforeseen enlightenment about the least known societies of yore. Left to themselves, the two disciplines cannot scale sufficient heights or depths of understanding of human societies. For focussing our attention on the need for an interdisciplinary approach involving geography, archaeology, and anthropology in reconstructing past societies, Agorsah deserves our congratulations.
Agorsah's paper, in which he explores several factors involved in the transformation of an abandoned Ghanaian village into an archaeological site, allows anthropologists an appreciation of the processes related to construction and destruction of a habitation site. In particular, he cautions archaeologists against interpreting the spatial or cultural character of a site without understanding both depositional and postdepositional forces at work on it. It is my feeling that many of the issues discussed by Agorsah have already been made explicit in the archaeological literature over the last decade (e.g., Schiffer 1976). It also seems that many of the conclusions he draws from his observations of the relationship between the two villages are not accompanied by much archaeological evidence. This may in part be due to the fact that this paper is only a summary of his dissertation, in which the more substantial portions of his analysis are probably found. Nevertheless, this paper presents valuable information concerning traditional house construction by the Nchumuru and documents some relationships between abandoned and settled areas that affect the archaeological record.

I would like to comment on two aspects of this paper for which I have comparative observations based on ethnographic and archaeological research among another Guang-speaking group, the Gbanya of Daboya in northern Ghana. The first point concerns Agorsah's observation that the reconstructed buildings of Old Wiae were circular in plan while at present rectangular structures are much preferred. He unfortunately does not explore the significance of this change. At Daboya, a fairly balanced mixture of circular and rectangular structures continues, often within the same household. The chief's compound, for example, has over 20 round huts with thatched roofing for his wives, while his own dwelling is rectangular with a tin-zinc corrugated roof. Although there is an increasing preference for rectangular structures (perhaps, in part, to accommodate the metal roofing), the round plan is retained when more traditional values are to be emphasized.

The second aspect concerns Agorsah's comment that "sometimes pieces of collapsed walls show different colours and textures." Experience at Daboya has confirmed the difficulty, frequently noted by others in West Africa (Shinnie and Ozanne 1962, York 1973, Kense 1981), of discerning structural features. "Experience at Daboya has confirmed the difficulty, frequently noted by others in West Africa (Shinnie and Ozanne 1962, York 1973, Kense 1981), of discerning structural features and stratigraphy during excavation because of the uniform nature of the midden soils. Two significant structural features, however, were observed during archaeological work at Daboya. One was the clear indication of wattle-and-daub construction for dwellings during the Kintampo culture of the Terminal Late Stone Age period. The evidence consisted of burnt clay chunks containing the vertical impressions of branches. Although such structures still exist in some Ghanaian villages, the diagnostic clay fragments are not recovered from any period following the Kintampo at Daboya. This suggests a fundamental shift in construction technology. The second feature is the relatively late appearance in the stratigraphic record of the use of crushed red laterite as composted flooring, an innovation that seems to parallel the tree-bark concoction described by Agorsah. At Daboya, however, it is a technique that appears only within the past two centuries in the archaeological record and is even today only infrequently employed.

One way that dwellings may be identified archaeologically in habitation sites such as these relates to the removal of earth used for walls that comes from areas containing numerous potsherds. Since the process of wall building filters out most of the larger sherds, the eventual erosion and blending of the wall into the surrounding soil matrix results in a higher density, producing a discernible pattern outlining the original structures. Although this approach requires a slow excavation procedure, it may well be the only method to produce significant results. Such a strategy, amongst others, would not be considered if recognition of the construction process were not an important factor in archaeological research.

It is natural that anthropologists should favor such an approach. Scholars in our discipline and other social sciences have been drawn to behavioral and biosocial data because these are more readily quantifiable. In short, we have viewed shelter as an object which satisfies a primary need. Furthermore, most anthropologists feel that the investigation of shelter as an art is the task of the humanist, one we not only feel inadequately prepared to deal with but fail to see as having substantial anthropological value. While Agorsah has successfully pursued his own research goals, it is vital to recognize the importance of archaeology to the study of the humanistic elements of human construction. As Carpenter and Ackerman (1963:112–17) point out, the archaeologist is as much a humanist as is the anthropologist or art historian, and his domain overlaps that of the political and cultural historian, the anthropologist, and the historian of technology and science. Although anthropologists have made few direct efforts at an aesthetic analysis of traditional building, even the basic form of structures can be aesthetically pleasing to the viewer. In many cultures, skill in house building appears to qualify a structure as art regardless of decoration, special use, or rank of the owner. Style, therefore, is of considerable interest to architectural anthropology because it is an outward indication of artistic process and expression. Style analysis also has pragmatic applications to the understanding of social structure, proxemics, and change, and, as Wolf (1964:77) has pointed out, the study of style by anthropologists is no longer limited to its aesthetic or intellectual interest.

Agorsah's paper relates directly to ecology. Cultural ecology has a strong contribution to make to architectural research in permitting comparison of groups and their relationship and adaptations to the environment both at the transcultural level and within a single culture. Its importance to architectural analysis is most obvious in materials choice and usage, site locations, climatic effects on design and materials, and, of course, the comparative system these ingredients provide the anthropologist when viewing another people's construction practices. Agorsah deals with these elements but not with man's feelings and experiences as a creator of architectural meaning. Architectural form and embellishment and the creative process itself are structured, symbolic means of communication, a system of representations that corresponds to a system of social relations within a group and expresses the common values of members of the society.
In the last few years, the ethnoarchaeological table has groaned with the plenty of competing and vociferously argued paradigms. Binford (e.g., 1983) argues an adaptive approach to understanding the transformation from dynamic ethnographic behavior to archaeological statics. Gould (1980) devises a paramaterialist logic of interpretation based on "argument by anomaly." And Hodder (1982a, b) rejects both of these in favor of the "relational analogy," the ethnoarchaeological window on the meaning-laden frameworks created by material culture within which their makers work out social and ideological strategies. Debate on the relative merits of these paradigms by the principals and their disciples has only just begun. Meticulous, native-speaker field studies, such as the doctoral research by Agorsah, are the data bases upon which these debates ultimately must turn.

Many differences separate the aforementioned paradigms. Two general themes are, however, especially amenable to testing against observations made by the new ethnoarchaeologists, ably represented by Agorsah. The first theme concerns the quality of our inferences about the social, political, or ideological systems of extinct preliterate cultures. Until very recently, prehistoric archaeologists dismissed as too speculative any substantive concern with the symbolic and ideological components in the prehistoric record. Consequently, we are just now developing the skills of observation by which these can be reliably identified. In a very real sense, the paradigmatic debates are premature (although stimulating and indispensable); first we must significantly expand the corpus of successful applications of ethnoarchaeological generalizations to archaeological specifics.

One of the most exciting recent directions in African archaeology is the initiation by native-speaking archaeologists of ethnoarchaeological projects in their own communities or culture areas. Agorsah's study demonstrates that these new ethnoarchaeologists promise us novel discussions of the symbolic and ideological variables at work in the creation of an archaeological site. Prior ethnoarchaeological studies of Ghanaian community and dwelling evolution and devolution were inevitably crippled in this regard because they were conducted by foreigners. The single disappointment with the Agorsah paper is that he only briefly mentions the dynamics involving intra-kasuro wealth and status rankings and the location of the kabuno shrine or patriclan head's compound as these dynamics affect the spatial and material evolution and devolution of the two Wiaes.

The second theme of the paradigmatic debates concerns the validity of cross-cultural comparisons. Hodder, for example, rejects attempts to generate uniform laws of social change or to demonstrate the presence of cognitive universals. But can his argument against cross-cultural explanation be assessed? We simply lack a corpus of high-resolution ethnoarchaeological case-studies large and global enough to allow us to pronounce one way or another upon his claims. Agorsah has made a real contribution in this direction.

At the end of his paper Agorsah says, "In the course of my formal study I found out how little I really knew and how much more I had to learn." There is a tendency by some to claim that native-speaking archaeologists from the study community have a monopoly on ethnoarchaeological truth. As well as being disingenuous, this claim denies the principal interpretive power of archaeology as anthropology: new insights are gained by free debate among those representing a plurality of perspectives. Agorsah would be the last to claim that he has written the final word on Nchumuru settlement patterns.
will be observable. Experience at Daboya suggests that the normal picture will be a build-up of undifferentiated soil in which very few features of house construction can be observed. As Agorsah says, postholes are almost invisible, and my experience has been that almost no walls can be traced and that the only observable features—and these are nearly always very fragmentary—are floors made of a layer of gravel. In addition, lenses of charcoal can also be seen which may be due to rapid burial and not to fire, though I am not certain about the evidence for this.

Agorsah points out clearly the difficulties of interpreting the battered remains of mud structures in archaeological excavation and refers to the way in which borrow pits are subsequently used for dumping. What he does not mention is the continual recycling of soil that goes on over a long period of time, which results in a marked mixing of material remains, primarily potsherds. The mud from collapsed houses is frequently reused to build new ones, and the resulting inversion, or complete mixing, of stratified deposits makes interpretation very difficult. The results of this process can be clearly seen in the large number of potsherds to be seen in the walls of houses.

I find myself in disagreement with the last paragraph of the section “Archaeological Considerations” and cannot understand the statement that researchers have learned to ignore many ideas. And surely, research arguments should not aim at explanation before description. How can explanations be made intelligible if basic descriptions are not given?

Reply

by E. Kofi Agorsah

Lagon, Accra, Ghana. 14 IX 84

I am pleased with the reception of my paper, and I think the various comments add considerably to our knowledge and raise important issues. Although there are many points of agreement, the comments also present useful new ideas and problems that need further discussion.

In evaluating the implications of the construction or reduction processes of a traditional society for the reconstruction of the past, the first requirement is a basic theoretical or methodological approach. This approach must incorporate, if not resolve, the problem of the relation between man’s internal state and his external behavior and must, therefore, deal with the observer-observer gap. Some of the points raised by Atherton, Goucher, Lehmann, McIntosh, and Shinnie address this problem. The recent review of trends in ethnoarchaeological research in Africa by Atherton (1983) indicates some attempts to bridge this gap. Since this problem lies at the very foundation of any interpretation of human behavior, it is difficult at this stage of the development of ethnoarchaeology to achieve even expert agreement upon a basic orientation. Some steps forward would be the use of the horizon-broadening insights for archaeological explanation and interpretation called for by Atherton and the more serious consideration suggested by McIntosh of paradigms that would permit effective cross-cultural comparison. Ethnoarchaeology is no longer the mere study of hunter-gatherer societies or an exercise in the collection of ethnographic information on traditional societies that are foreign to us. It has become a means of describing and explaining the unobservable behavior of past societies on the basis of observed phenomena of living societies, traditional or other.

The call by Connah, Kense, and Shinnie for more data on the archeological aspect of my study comes as no surprise. It was impossible to present the detailed archeological evidence collected in connection with my study in a paper discussing only one aspect of it. This is not to suggest, however, that what has been done archeologically is adequate for the testing of my predictions. I had to choose between excavating the sites in which I was observing processes of decay, thereby reducing the amount of material available to confirm or disconfirm my predictions, and undertaking an exploratory study that would leave most of the archeological evidence intact. I decided in favor of the latter for obvious reasons. Although more archeological data are available in my dissertation, I do not want to claim that they are adequate. Ethnoarchaeological study of the type discussed in this paper takes time, care, and patience. Archeology is, to a great extent, detective work, and unless we are content to rely on hunches, we must adopt a logical, objective approach. Logic recognizes the truth values of “true” (acceptable) and “false” (unacceptable) or perhaps rejectable and not rejectable. Although the establishment of logical relations is instantaneous, their use to answer questions and formulate and test propositions takes time and requires a rather large amount of evidence.

A similar ethnoarchaeological project, perhaps a revival of the one Connah mentions, is mentioned in Nyame Akuma, no. 22 (June 1983), p. 16, as being undertaken at the University of Ibadan. Bassey Andah, who is its head, would be the best person to provide information on it.

Goucher raises two important issues. The first is the need for parallel ecological studies. The first practical concern of my research was the environmental factors and resources (natural and social) that were potentially available to and exploited by a traditional community in the study area. The results constituted a basis for determining its spatial dimensions. Thanks to a generous one-year grant from the National Geographic Society, supplemented by the University of Ghana, the study area is being expanded to include areas occupied by other ethnic groups, such as the Nawuri, Krachi, Gonja, and Konkomba. As more sites are located, it will be possible to examine processes of decay processes in settlements in differing environments and with different traditions. The second issue is that of historical setting. On this aspect, my study has so far relied on linguistic evidence, historical documents, and oral traditions. Results on the radiocarbon samples so far collected from the most recent excavations have not yet been received. The location of more sites, many of which, according to oral traditions, may be older than Old and New Wiae, seem to promise material for a clearer and deeper temporal dimension. This should make it possible to place the settlement history of the area in a more refined chronological perspective. I am aware that as the evidence extends back in time, problems of identification of walled structures increase.

Explaining the depositional and postdepositional processes affecting archeological material is a problem for field archeologists everywhere. For the archeologist working in Africa, as Shinnie confirms, or in other tropical regions the problem is even greater. Kense’s field experience in Ghana attests to this. It is, therefore, not unexpected that he should rephrase my call for caution. I do not, however, agree with him that Schiffer’s (1976) “synthetic model of archaeological inference” has been fully discussed. For example, its practical applications have not yet been demonstrated in any ethnoarchaeological research I know of in Africa.

In the social sciences, analysis of cultural data and the logical requirements of explanation in terms of deductive models are virtually the same, but there are certain differences in the modes of justification. It is for this reason that, although the theoretical orientation of my study borrowed considerably from Schiffer’s synthetic model, I thought it important to be explicit about the methodological framework being applied to my particular data. My flow model for explanation of cultural and noncultural formation and transformation processes (Agorsah 1983a) was specifically useful for studying structural features in my research area. This flow model (fig. 5) incorporates rates of Schiffer’s flow models for both durable and
consumable objects and some practical aspects of McIntosh’s study of mud-walled structures in a village in Brong Ahafo Region. It is also generally applicable to the study of archeological structures anywhere. Taking a structure such as an earth-walled house and running through the model, one realizes at each stage that several locational, constructive, and reduction processes are concurrently taking place and that potential archeological features are being created. A considerable amount of recycling is also going on, as Shinnie mentions. It may also be observed that as structural features move from the systemic into the archeological record, noncultural transformation processes take over from cultural formation processes, though, as Shinnie points out, not entirely.

My flow model is a practical tool particularly well suited to a systems approach in ethnoarcheology. Although systems analysis originated in biology and engineering, its proponents think that its highly general approach to phenomena allows it to cut across disciplines. In fact, this approach seeks to reintegrate the natural and social sciences. The basic considerations in systems analysis include the system as a whole, its objectives, the environmental and social resource constraints and their dynamics, the interaction of the component parts, activities, and measures of performance. What I have, in my study, characterized as the “situational approach” is systems analysis from the social science perspective.

The “situational approach” proposes that human behavior occurs in situations and that the unit of analysis is the situation that combines the society and its environment in a typical scheme. Neither the society nor the environment can be considered separately. It is this aspect of ethnoarcheology that needs to be emphasized to make it more practical, and my flow model provides a basis for this. As one uses the model, new ideas present themselves for its refinement.

Circular huts continue to be popular in certain parts of the area of my study. However, in the Nchumuru villages circular houses are used by Konkomba. In New Wiae only one house belonging to an Nchumuru has circular as well as rectangular huts. The main prediction about house forms at Old Wiae and earlier sites was that the houses would be circular. Floor plans were expected to show a shift from circular to rectangular. This prediction was an attempt to build a generalization that the earliest Nchumuru house structures were round and that adoption of rectangular floor plans at New Wiae was an adaptive measure that may have developed after the relocation of Old Wiae. It was based partly on the fact that survey of the sites of earlier settlements of the people of Wiae (Oseiaye and Ntrapose Krayir) indicated structural features suggesting that the houses were circular.

Why the shift from circular to rectangular? From a scientific perspective, the circle seems to be the shape that encloses the largest area with the smallest perimeter. This property and the need for compact settlement probably made it the most efficient for the ancestors of the people of Wiae to use. Whether by coincidence or not, the grouping of the huts on round floor plans made it easier for each person’s hut to be surrounded by the huts of members of his kabuno as custom required and to ensure the protection of the kabuno by its leader. Although there is support for Prussin’s argument about the efficiency of circular huts, I am not sure whether it could be shown that they last longer. Prussin has since 1969 undertaken considerable research on the architectural consequences of human social behavior, and I am certain she would not be very emphatic on that issue today. The connection between Prussin’s early work, referred to by Ottenberg, and mine is clearly stated elsewhere (Agorsah 1983a). It may also be argued that the round shape provided for minimum heat transfer in a con-
gested settlement such as Old Wiae or Oseiaye. In addition, a circular settlement allowed for both ready access to the center and an efficient defensive perimeter, especially important given the prevalence of war among the early settlements in the area.

But the circular houses may be attributable, as Ottenberg speculates, to factors other than their compactness. In Nchumuru belief, the center of the society is the kabuno shrine. Making houses circular not only symbolized that belief but also made the tradition more concrete. In the circular form, therefore, the pattern of the building operation and daily life were fused, giving it a dual coherence—contextual and physical. This dual coherence is based on the fact that physical clarity of form could not have been achieved without an initial pragmatic clarity in the traditional designer's mind and actions. For this to be possible, in turn, the Waie builders had to trace their earliest functional origins and, after finding some patterns in them, create a fit between two entities: the form, which was the solution to the problem of space facing the growing Waie, and the context, which we have understood to be the Nchumuru traditional society, based on the kabuno system.

The shift from circular to rectangular floor plans begins to appear here and there in Old Waie, but its completion is seen in New Waie, where the basic L- and U-shaped arrangements may be observed. The archeological evidence indicates not only a clear shift in the geometric form of residential structures but also a change in the location of associated features such as shrines, reception rooms, and hearths. A tendency toward an enclosed arrangement of house structures based on circular floor plans has been recorded for traditional groups such as the Tallensi (Prussin 1969), the Konkomba (Tait 1961), and many others. However, the circular arrangement is less flexible and cannot be combined with other forms to define a variety of spaces. Since it is mainly inward-oriented, it seems more suitable for small family groups such as may have existed in early Waie settlements. It is thus not hard to understand why, with the expansion of Nchumuru villages as several family groups came together, the shift should have occurred. The evidence seems to suggest that while the enclosed houses of Old Waie and earlier settlements provided spatial continuity for kabuno members (smaller groups of families), the open houses of New Waie, with a population consisting of several mbuno, provide both visual and spatial continuity between kabuno houses. The circular form of houses and house arrangements observed at early Nchumuru sites may also be associated with nomadic life. This is a mere speculation that remains to be tested with evidence from other sites the excavation of which is being planned in the hope of obtaining funding.

A common residential form is the L configuration of rooms around an outdoor living space. In modern Waie houses, one wing of a house of this shape contains private spaces or utility and service areas. The advantages of this layout include the provision of a private but open outdoor space, sheltered by the building, to which the interior spaces can be directly related. The L arrangement is stable and self-supporting and can stand alone in space yet appear a part of the settlement. Because it is open-ended, it is flexible and can be used in combination with others of the same kind or with other geometric elements to define a wide variety of spaces. The L arrangement is usually transitional to the U.

The U configuration defines a field of space that has an inward focus as well as an outward orientation. Since the field is enclosed at the rear, houses open into one another. This was probably a way of avoiding the congestion of Old Waie and previous settlements while at the same time maintaining kabuno proximity. The why and how of the change from circular to rectangular need more consideration than they can be given here.

It is clear from the comments on my paper that the ethnoarchaeological enterprise has reached a stage where researchers must focus attention on the quality of inferences about past traditional societies and on the formulation of generalizations that can be effectively applied to ethnoarchaeological data (as McIntosh notes). Unfortunately, it is impossible to retrace here the history of the ethnoarchaeological enterprise as a backdrop against which to review the basic postulates and paradigms underlying its method. One point that is clear from the use of the study of construction or reduction processes of the past (Agorssah 1983b, Clark and Kurashina 1981, Gifford 1978, McIntosh 1977, Schmidt and Avery 1978) is the need for observations that go beyond mere description of processes and artifacts if we are to communicate across cultural boundaries about our methods and findings. This is what is meant, ideally, by a cross-cultural enterprise—one in which the norms of the scientific process can be readily understood and applied by scholars in a variety of cultural settings.

The importance of the kasuro and kabuno system for understanding the spatial and material transformation at both Old and New Waie has been discussed in greater detail elsewhere (Agorssah 1983c), though not much emphasis is given here to the distribution of wealth among the Nchumuru that McIntosh asks about because it was not a crucial factor in their decision making about house location and construction. Problems related to the identification, description, and explanation of structural features, especially earth-walled structures, are too well known to require further discussion. I am in total agreement with Shinnie on the magnitude of the problem in Ghana in particular. It is true that in most cases almost no walls can be traced. The crucial question, however, is what results or indications of cultural and noncultural transformation processes can help locate evidence relevant to the reconstruction of a site.

As regards the interpretation of archeological materials, my concern, and I am sure Shinnie will agree with me, is with the need for considerations that go beyond the description of artifacts and structures. The goal of behaviorally oriented ethnoarchaeological analysis is a synthesis of the derived facts that seeks to render a phenomenon intelligible by linking it with some stated condition. Certainly there can be no explanation without some kind of description, but what is important is the justification of the phenomenon being described. Explanation in this sense therefore requires that the archeologist not only identify events, structural features, or artifacts but also apply the logic that will reveal the mechanisms underlying them.

The study of the implications of construction processes is not the type of work that produces a base for drawing quick conclusions. The Akan of Ghana have a proverb which says "Ti kro nko agyina," literally "One head does not go to a conference." We need to compare and discuss our data. I thank all my colleagues for sharing their ideas. The main message of our exchange is that we must carry our studies a little bit beyond their "obvious" limits. Ethnoarchaeology is still in its infancy, but in its various guises it has begun to provide a fertile analytical framework for studying the past. As it moves beyond technical description and the unlimited accumulation of ethnographic material, it can be expected to yield increasingly significant interpretations and generalizations.

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Prizes

The McLuhan Teleglobel Canada Award, honouring the work of the late scholar and communications philosopher, Herbert Marshall McLuhan, is administered by the Canadian Commission for UNESCO with the assistance of other UNESCO national commissions and funded by Teleglobel Canada, the Crown corporation responsible for Canada's international telecommunications services. The award consists of Can. $50,000 and a commemorative medal and is offered every two years. It was established to recognize any work or action that will have contributed in an exceptional manner to furthering a better understanding of the influence exerted by communication media and technology on society in general and in particular on its cultural, artistic, and scientific activities. It is offered to nationals of any country, either as individuals or as teams. In 1983, 28 national commissions nominated 37 candidates, and the award was presented to the Bolivian journalist Luis Ramiro Beltrán. A jury of five independent Canadian specialists will select the laureate for 1985 from among candidates nominated by national commissions or recognized organizations of the 161 member states of UNESCO. A representative of the Director-General of UNESCO sits on the jury as an observer. The deadline for submission of nominations is May 31, 1985. For further information, write: Jacques Lemire, Chief, Information Section, Canadian Commission for UNESCO, P.O. Box 1047, Ottawa, Ont., Canada K1P 5V8.