NIGERIA

Outline of a New Research Project on the Nok Culture of Central Nigeria, West Africa

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Introduction

Textbooks on African archaeology and African art consider the so-called Nok Culture of central Nigeria for its early sophisticated anthropomorphic and zoomorphic terracotta figurines (Figures 1 and 2), and usually they emphasize the absence of contextual information and thus their social and cultural purpose (Garlake 2002; Phillipson 2005; Willett 2002). The first figurine was found in 1928. But to science they became known only around the middle of the 20th century, when more accidental discoveries, initiated by the British archaeologist Bernard Fagg, were made in open-air tin mines in the surroundings of the village of Nok (Figure 3). After some years of field activities, Bernard Fagg presented a considerable collection of about 150 individual objects (Fagg 1977). Notably, all figurines were found fragmented but uniform enough in style to motivate Bernard Fagg to talk about a "culture" – a term regarded more critically today, but retained here as common practice.

Early radiocarbon dates of associated charcoal, and later thermo-luminescence measurements of the sculptures themselves, resulted in unexpectedly late ages of up to 2500 years. Thereby, the Nok terracotta figurines became the earliest large-sized figurative art objects of Africa outside Egypt. The questions that arose concerned the nature of a community, which existed in an area that was not conspicuously different from other West African environs, but which was different from any other contemporaneous complex in the production of abundant and beautiful clay figurines. Its enigmatic character was underlined by the lack of any known precursor or successors leaving the Nok Culture as a flourishing but totally isolated phenomenon in the archaeological sequence of the region.

Another surprise was the discovery of iron-smelting furnaces in Nok contexts, and at that time amongst the earliest evidence of metallurgy in sub-Saharan Africa (Fagg 1968; Tylecote 1975). The combination of early iron and elaborated art – in our western understanding – demonstrated the potential of the Nok Culture with regard to metallurgical origins and the emergence of complex societies.

However, no one continued with the work of Bernard Fagg. Instead of scientific exploration, the Nok Culture became a victim of illegal diggings and internationally operating art dealers. The result was the systematic destruction of numerous sites and an immense loss for science. Most Africanist archaeologists are confronted with damage caused by unauthorized diggings for prehistoric art, but it appears as if Nok was hit the hardest. Based on the extent of damage at numerous sites that we have seen in Nigeria, and according to the reports of those who had been involved in the damage, many hundreds if not thousands of Nok terracotta figurines were wrested from undisturbed contexts in cultural deposits and sold to museums and private collectors in Europe and America. The activities have diminished because dealers are afraid of the increasing numbers of fakes. But villagers almost everywhere in the Nok Culture area are still digging to sell their findings for next to nothing. However, in our research area located near the village of Janjala, many villagers have joined our team since the beginning of initial fieldwork in 2005 and they have contributed their knowledge about Nok sites. Consequently the Janjala region has become a key area with an unexpected high density of sites (Figure 3).

Exploratory work between 2005 and 2009 demonstrated that the scientific potential of the Nok Culture is immense but also that a long-term, interdisciplinary approach is required to look beyond its art. A respective project dedicated to the *"Development of complex societies in sub-Saharan Africa: The Nigerian Nok Culture"*, scheduled for a duration of up to 12 years, was granted by the German Research Foundation (DFG) in 2009.

Figure 1: Head of a human Nok terracotta figurine with elaborate hairstyle or headgear, excavated in spring 2010 at a site called Kushe in the central distribution area of the Nok Culture.

Conceptual Framework of the Research Program

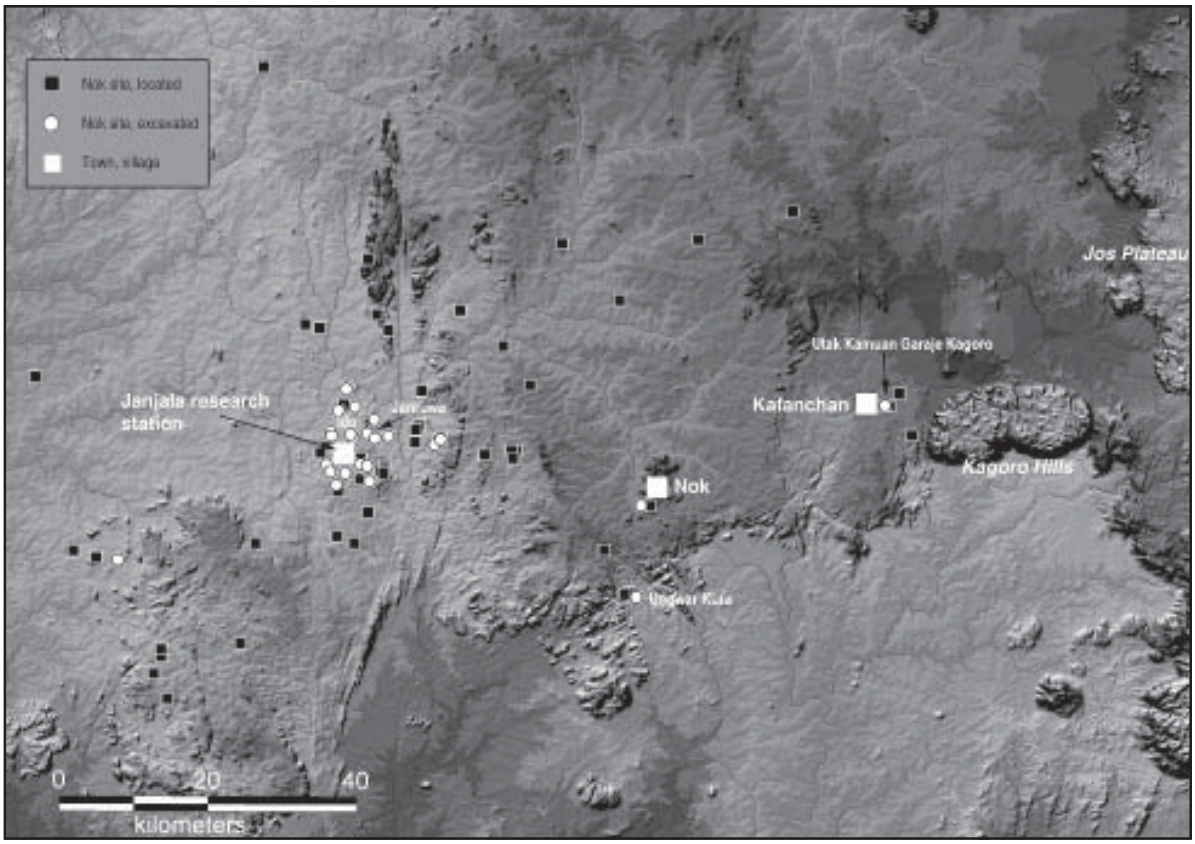
The project has the challenging task of investigating an archaeological complex which existed for several centuries in an area of approximately 100,000 km², and which, until recently, was known only by its terracotta figurines and sparse evidence of iron metallurgy. To increase our knowledge of the Nok Culture, new data obtained by archaeological prospection and excavation are necessary. Data were procured to describe the material culture (pottery, stone industry, iron objects), economy (on the basis of charred botanical remains), and social organization (particular focus on specialization through analysis of artifacts as well as identification and interpretation of site structures and settlement patterns). Further focus is directed toward ritual aspects (in particular, functional interpretation of the terracotta figurines through contextual analysis), environment (analysis of ecofacts and exploitation of geoscience archives), and finally the study of modern social aspects including current local knowledge about the Nok Culture, and the sociology of local and international art markets in terms of both original terracotta figurines and fakes. In addition to the constant acquisition of relevant data, the program is divided into four phases of main thematic emphases, each of three years duration.

Phase 1: Chronology of the Nok Culture

Phase 1 is focused on the chronology as a fundamental prerequisite for any further consideration of the culture. Early dates clustered between 500 BCE to 200 AD (Fagg 1959; Jemkur 1992). Recent radiocarbon measurements of charcoal particles from the interior of terracotta figurines point to earlier dates of 800 to 900 BCE (Boullier et al. 2002). However, most of these dates are less reliable because of contextual uncertainties including the unclear relation between the dated sample and the archaeological material or the old wood problem of dating charcoal. This situation has changed because samples now derive from scientifically documented contexts of original sites. Further, archaeobotanical sampling, carried out on all excavations to achieve economic and environmental information, in most cases avoids the old wood

Figure 2: Terracotta of a double-headed lizard, excavated 2007 from the Nok settlement of Ungwar Kura. (Restored by the Römisch-Germanisches Zentralmuseum Mainz, Germany).

Figure 3: Map of the central distribution area of the Nok Culture with sites mentioned in the text.



problem by dating charred remains of annual plants. Thermo-luminescence dating on the figurines is used to cross-check the radiocarbon results.

Most existing dates so far, point to the duration of the Nok Culture from 500 BCE to 200 BCE. A continuation into the 1st millennium CE – formerly postulated on the basis of one single radiocarbon date from Taruga (Fagg 1965: 212) – has been confirmed by dating charred seeds of an annual plant from the site of Janruwa C into the 2nd century AD. Due to fluctuations in the atmospheric production of radiocarbon and a plateau in the calibration curve, organic materials produced between 800 BCE and 400 BCE cannot be separated by their radiocarbon content. This hampers the consideration of some important questions: Was the Nok Culture a brief occurrence of a few centuries with a climax between 500 BCE and 200 BCE and a gradual disappearance until 200 AD? Or did it encompass a development of up to 1000 years or more, beginning in the early 1st millennium BCE, and thus should be considered the inventor of iron metallurgy in sub-Saharan Africa? The crucial question is whether the plateau absorbs only the beginning of the Nok Culture (ca. 500 BCE to 400 BCE) or whether its duration covers the whole plateau period? Recently, samples from a site named Ido excavated in 2009 were dated prior to the plateau into the 9th century BCE. If all of these dates are confirmed by cross-checks currently in process, it appears quite certain that the Nok Culture existed for about one millennium at the minimum.

In addition to thermo-luminescence dating, the hypothesis of a one-millennium-duration will be tested through either the homogeneity or heterogeneity of the excavated ceramic inventories. These ceramic inventories also will be the basis for a sub-division of the Nok Culture and will help to identify Nok sites without depending solely on terracotta figurines. Terracottas constitute the only diagnostic finds so far, a fact that might have created the possibly wrong impression that all Nok sites contain terracottas. Sites without terracotta simply have not been identified as

belonging to Nok. According to the current state of analysis, ceramic finds from excavated sites differ particularly in their decoration. As long as this has no functional purpose (differences between ordinary pottery for daily use, pottery for ritual purpose, or use as grave goods), changes over time are a reasonable explanation and a promising precondition for chronological sub-divisions. Particular attention will be directed at the initial and final phase of the Nok Culture. To identify its beginning and end is the first step in determining its origin and disappearance.

We have started with initial investigations into the sedimentation processes and post-sedimentary alterations on Nok sites. In the future particular attention will be paid to the formation of cultural deposits and the reasons for the lack of specific find categories such as bones. Other aspects concern the erosion of cultural deposits, or the increasing accumulation of deposits in valleys or depressions as a hypothetical consequence of the ecological change triggered by dense occupation during the Nok period. These contributions from the geosciences, which will help understand the nature of Nok sites, are planned as the focus of research during the next phase of the project.

Phase 2: Functional and Structural Analysis of Nok Sites

During the second phase, Nok sites will be analyzed from three perspectives: 1. Structure of sites; 2. Interpretation and classification of sites; and 3. Patterns of occupation.

1. Structure of Nok sites

According to the fieldwork carried out up to now, recognition of the structures of Nok sites, no matter whether they are settlement, graveyard, ritual site or something else, becomes a methodological challenge. Excavation as the traditional method to identify structures or to reveal features from houses or huts or other settlement components has proved to be unproductive. Although the excavations had a maximum extension of no more than 200m², it is obvious that the Nok people did not use stone for construction, but most probably they used organic materials like wood or thatch which left no visible traces, not even a discoloration of postholes, provided that they had existed at all. Some small circular stone arrangements and shallow pits with stones, potsherds, fragments of terracotta and abundant charred botanical remains, mostly charcoal, constitute most of the complete repertoire of structural elements exposed on Nok sites so far.

In addition, there are numerous finds, in particular potsherds, whose spatial distribution bears structural information. For this reason the position of all finds is regularly documented by digital systems in a three-dimensional coordinate system. Identifying the structure of archaeological sites through the spread of cultural materials requires large-sized or, at best, total excavation of sites, which are intact or not too disturbed. These will be conducted during phase 2. The intention is to separate domestic areas from courtyards, stables, refuse dumps, or areas of ritual activities, and thus to distinguish different types of sites. Extensive excavation also delivers data to approach other topics such as the enigmatic fragmented condition of the terracotta. Refitting the fragments possibly can clarify what happened to them either during their use in cultural or in post-sedimentary contexts. Furthermore, this can test our hypothesis that destruction usually was the final purpose of the sculptures (with the consequence that many complete specimens in museums and collections are fakes).

Another efficient method to detect structures is magnetic prospection. However, a test has shown that it is less useable in the Nok Culture area. Dense vegetation, in particular trees, prevents scanning the ground to the degree required for this technique, and the proximity of crystalline bedrock in the ground causes interference between geological and archaeological magnetic signals. More information on structures we expect to determine from X-ray fluorescence analysis. For instance, new technologies allow measuring soil samples in large quantities along close-meshed grids to map phosphate concentrations. Such concentrations point to former places of accumulation of organic materials, in particular bones, which are totally absent in the archaeological record due to the acidity of soils. With this technique we intend to localize graves. Together with the archaeobotanical classification of plant macro-remains and phytoliths, these methods will allow identification of structural markers and the distinction of settlements from other sites.

Figure 4: Fragments of one or more terracotta figurines embedded in a pit-like structure at the site of Utak Kamuan Garaje Kagoro.

2. Distinction and classification of sites

Our previous investigations have shown that Nok sites differ considerably with regard to size, environmental position, features, and patterns among the spread and composition of cultural materials. The theoretical range of sites comprises settlements, ritual sites, burial sites, iron-smelting sites and isolated finds. Terracotta apparently appears everywhere and possibly has a key position for the classification of sites. Pottery might also prove to be useful in differentiating sites if the impression is confirmed that a difference in design and quality exists between vessels from domestic contexts and those from burials or ritual activities.

Iron smelting sites and isolated finds are easy to identify. Smelting sites are recognizable through furnaces and a specific kind of slag. Isolated finds from a Nok Culture context consists only of terracotta and comprises the bulk of discoveries from Bernard Fagg's times. They derive from alluvial deposits, partly from a depth of several meters. Either they were washed down from other sites situated close by (however no spatial relation has been discovered yet), or the objects were deposited there intentionally.

More difficult is the differentiation of settlement and ritual sites. Both categories are represented in the archaeological record. A clear ritual site has been found in Utak Kamuan Garaje Kagoro, where a set of highly fragmented terracotta figurines, embedded separately in pit-like structures together with stones that were used possibly to smash the figurines, were recovered (Figure 4). In contrast, there are other sites with large quantities of potsherds and heavy grinding stones, as well as charcoal and plant remains from crops, which undoubtedly represent a settlement. It is not clear whether this two-fold division of sites is correct, or whether all kinds of transitional forms existed (pure ritual sites, ritual sites of settlement appearance, settlement with ritual areas, or pure settlements).

3. Settlement patterns

Based on the data of sites located so far, it appears as if their position in the landscape was not a matter of accident, but strongly correlated with specific environmental settings. For instance, Nok sites commonly cover the surrounding and top of low inselbergs. However, sites also appear along mountain slopes, next to rivers, or in flat plains thus showing differences in topographic position that possibly reflect functional variation. Applying Geographic Information Systems (GIS), we intend to analyze ascertained data on topography, hydrology, soil type, vegetation cover, visibility, microclimate etc. from sites in the research area around Janjala with the objective to model the Nok settlement system. In a subsequent step the model will be tested inside and outside the current research area and, if necessary, modified.

Phase 3: Regional Diversification

In the third phase, the by then known appearance and development of the Nok Culture in its central area of distribution will be examined in a wider geographical context in order to assess the extent that regional differences existed and how far the Nok Culture actually spread. Apparently the only clear borderline was running in the east along the western fringes of the Jos plateau. No Nok sites are known from the top of the plateau. The occurrence south of the Benue is based on just one single terracotta find spot at Katsina Ala. To the west some maps indicate a spread of the Nok Culture up to the Kainji-dam, where some terracotta figurines were found and are supposed to represent a local, somehow different style on the western periphery of the Nok Culture (Priddy 1970; Willett 1986). Most confusing is the spread to the north. Other terracotta traditions, only known from the art market and called Sokoto or Katsina according to information from two large cities in northern Nigeria, follow the spread of the Nok Culture but no distinct transitional zones have been localized so far. Some attributes of the Katsina and Sokoto terracotta figurines are similar to Nok, but others show a clear stylistic difference. With the exception of initial test excavations carried out by our Nigerian partner (Hambolu 2005), nothing is known about the context and the age of these art traditions. As in the case of the Nok Culture, commercial diggings in the past have seriously damaged Katsina and Sokoto figurine sites. A final phase of the project is dedicated to concluding investigations which are difficult to determine at the moment.

Conclusion

Research on the Nok Culture means to search for the origins of complex societies in sub-Saharan Africa. Some centuries after the disappearance of the Nok Culture, e.g. by the end of the 1st millennium AD, the first states and empires emerged in West Africa. Of course, there is no evidence to relate one development with the other directly. However, from a general point of view it is undeniable that between the family-based agricultural beginnings in the 2nd millennium BCE and the complexity of empires 2000 or 3000 years later, social and economic prerequisites for the latter must have developed somehow and somewhere. The central Nigerian Nok Culture is one of the West African candidates, existing in key areas where this might have taken place in the course of the 1st millennium BCE (Breunig 2009). This does not mean that the kingdoms of Kanem-Borno, Ife, or Igbo Ukwu have roots going back to the Nok Culture, but that Nok provided the conditions once being in the world, and constituted a basis for developments of more complex systems in neighboring regions during subsequent times. These conditions concern population growth, accompanied by social change, as indicated by the high density of known sites, and facilitated through a productive economical system based on the cultivation of pearl millet *(Pennisetum glaucum)* and cow pea *(Vigna unguiculata)* as well as the exploitation of certain wild species including *Canarium schweinfurthii* and *Vitex* sp. (Kahlheber et al. 2009). Further, the technological innovation of iron metallurgy must have had a considerable social significance by creating valuable status symbols and totally new tools, as well as triggering the required specialization needed to maintain the production and processing of iron. Specialists also must have existed to manufacture the thousands of elaborate terracotta figurines and possibly to maintain the ritual or religious system behind them.

The project outlined here has twelve years time to explore these aspects. It has a regular team of scientists and Nigerian partners carrying out the fieldwork and focusing on the main research topics. Specific aspects will be pursued by various Masters and

Ph.D. theses. Beside this, the project is open for external scientists, who want to participate either on the mentioned fields of activity or with their own new ideas.

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