

Aspects of Ancient African Archaeology:
Methods and Techniques Used in the Study of the
Cultures and Civilizations of Ancient Northern Africa
A Paper Presented to Dr. Susan Belangee and Adler Graduate School

In Partial Fulfillment of the Requirements for
500 Principles of Research

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January 2014

Abstract

This paper looks at the importance of research to the study and teaching of Archaeology, focusing particularly on the study of Northern Ancient Africa. It looks at the wide variety of potential sources of information that are available for study and samples five diverse articles that focus on different methods of study; ranging from archaeological reports to radio carbon dating, astronomy, bone and DNA studies, and game diffusion. It concludes with a review of various types of potential sources that should be viewed by those studying the period and region.

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The study and teaching of archaeology requires ongoing research and study in a variety of fields related to the topic. With regard to the study of the archaeology of ancient northern Africa this is especially true, as there are overlapping influences and sources from the disciplines of Egyptology, Classical and Near Eastern Archaeology as well as Anthropological Archaeology and one must be familiar with a variety of sources and methods to remain current with most recent discoveries and findings.

Methods and Techniques

There are a variety of different fields that can contribute to the study of the ancient past (of northern Africa or elsewhere). Chief among these are archaeological reports and radiocarbon dating, but fields such as Genetics and Biology, Astronomy and even the study of ancient games and their spread over time can contribute to the understanding of past civilizations.

Archaeological Reports

The 2013 article in *Antiquity* by Kemp, Stevens, Dabbs, Zabecki and Rose is an example of an archaeological report where they discuss six years work at the site of el Amarna in central Egypt, capital of the 18th Dynasty “heretic” Pharaoh Akhenaten. The site has been worked by a variety of archaeologists over the past century and this report deals with the current exploration of the South Tombs cemetery, a burial place for the non-royal inhabitants of the new (and short-lived) city. Rather than excavating just one portion of the site, three areas were excavated to get a better picture of the burial practices used in this settlement that existed only for about twenty years, being abandoned by Akhenaten’s son Tutankhamen, who ruled for ten years shortly after

his father's death. Their excavation of these graves reveals that those buried there, of whom there is a surprisingly large number in such a short period, were accompanied by few, if any grave goods and were not subject to mummification. That these were primarily working-class burials is attested by the analysis of 159 mostly complete skeletons, which revealed a high percentage of anemia (42.7%) as well as a high level of degenerative joint disease (65.9% upper limbs, 47.7% lower limbs, 56.75% spine) and a significant level of trauma to the trunk (55.8%) (Kemp, et al., Table 1, p. 71). All of this likely reflects the rapid construction of Akhenaten's new capital from nothing to a thriving metropolis of around 30,000 people, with ongoing work in expansion, refinement and tomb construction for the entirety of its short existence. Although the site has been extensively looted in both antiquity and more recent times, there was little interest for thieves amongst these working-class burials.

Radiocarbon Dating

Quiles et al.'s 2013 article in *Journal of Archaeological Science* uses multiple methods (radiocarbon and astrophysics) to attempt to develop a reliable chronology for Egypt's 18th Dynasty, which lasted approximately 250 years. They utilized already excavated materials held in museums, but the results, as are typical for radiocarbon, had a variance, but in this case it was between 25 and 45 years (Quiles, et al., 2013, Table 1 p. 428). The researchers engaged in extensive computer modeling of the radiocarbon data in conjunction with recorded lunar activity and the rising of the star Sothis (which occurred in conjunction with the commencement of the annual Nile flooding) to create their results. However, despite the claim in their title to "absolute" dates, the ranges they developed for the ascension of the various rulers of the 18th Dynasty (for some reason they omit the female Pharaoh, Hatshepsut) are several decades long, which is hardly "absolute". It is possible their methods and results could be combined with other

data to obtain a more precise dating, but the range they have for the start (earliest 1564 BC; latest 1528 BC) of the 18th Dynasty to its end (earliest 1340 BC; latest 1292 BC), both being almost half a century do not contribute much to a more precise dating of these rulers.

Astronomy

Quiles et al. (2013) used astronomical data regarding lunar cycles and the rising of the star Sothis in their attempt to model the chronology of the Egyptian 18th Dynasty. Belmonte and Shaltout (2010) also employed astronomy in their study of the orientation of ancient Egyptian temples. They made measurements of the alignment of 330 temples, shrines and monuments in the Nile Valley (Upper, Lower and Middle Egypt) and the surrounding deserts and oases from throughout the ancient period (pre-Dynastic through Roman Periods; roughly 3100 BC to 300 AD), approximately 95% of temple remains that are measurable. They confirmed that temples in the Nile Valley were predominantly oriented with relationship to the river (entrances either facing towards or away from the river), but that other factors were in play as well, as was demonstrated at sites away from the river, which evidenced orientation based on astronomical observations. They found evidence that the orientation of certain sites were also influenced by alignment with the equinoxes, solstices, solar-related seasonal (roughly related to sunrise at the beginnings of the sowing and drought seasons), relation to the star Sopdet/Sirius/Sothis (brightest star in the Egyptian sky), possible relation to the star Canopus (second brightest star in the Egyptian sky), and cardinal points (i.e., North/South). They found that certain major religious sites, such as the Temple of Karnak at Thebes in Upper (Southern) Egypt were likely positioned because the alignment of the river and other astronomical factors coincided at those locations, making them of greater significance. While confirming the longstanding belief that the temples and monuments of Egypt were oriented by the course of the Nile River (the thing that made the

development of civilization in Egypt possible; i.e. “Egypt: Gift of the Nile”), this study adds a new dimension previously not addressed to the significance of astronomical observations to the ancient Egyptians.

Genetics and Biology

Godde’s 2009 article in *HOMO-Journal of Comparative Human Biology* is a comparative study of remains of six Egyptian and six Nubian groups from contemporary periods in an attempt to determine the degree of impact of contact with outside groups on the genetic makeup of the Nubian population. The unique burial practices and grave goods used by the two groups allowed for their differentiation even when burials were in the same general location. The objects studied were cranial facial traits that were collected by two different scholars, Godde and Tsunehiko Hanihara. This introduced the possibility of interobserver error into the study, as one person did not collect all the data measurements and observations. To attempt to address this Godde used the definitions previously published by Hanihara as the basis for his observations and measurements. The study found a high degree of heterogeneity among the Egyptian groups and among the Nubian groups, but also a significant similarity between the two groups. Hence the question of whether the population in Nubia was developed *in situ* or was subject to significant biological diffusion through trade, contact, migration and conquest remains and Goode calls for further study of these and other surrounding populations to obtain a better understanding of the situation.

Ancient Games

The de Voogt, Dunn-Vaturi and Eerkens 2013 article is a study of the diffusion of two ancient board games (Twenty Squares, aka the Royal Game of Ur; Fifty-Eight Holes, aka Hounds and Jackals) that changed little from place to place and over the millennia that they were

played. It is postulated that because more than one individual was involved in the production and use of these games (unlike artifacts such as tools, weapons, and pottery, which were typically made and used by one person), changes to these items were less likely to occur. This would be similar to the concept of playing a game such as Monopoly today. You would not expect to sit down for a game in Japan and find that the object and method of playing the game were different from what it is elsewhere (ex. winner being the first to lose all their money or being rewarded for going to Jail). The authors first note that many games are confined to the boundaries of a single entity or spread by it, such as the Egyptian, Roman or Arab Empires. The two games that they have chosen to study however spanned cultural, geographic and linguistic borders, being played for over a period of about 1400 years before dying out. These games “crossed the borders of empires and city states without undergoing major change in appearance or popularity” (de Voogt et al., 2013, p. 1717).

One game, Twenty Squares, as its alternate name suggests, began in Mesopotamia (modern Iraq) in c. 2500 BC, and is well understood, with complete sets being found, as well as tablets with the rules. The other, Fifty-Eight Holes, is thought to have been developed in Egypt during the Middle Kingdom (c. 2000 BC). Both are thought to simulate racing and to have been transmitted in part through trade and cultural contact as well as military conquest, alliances and diplomatic endeavors (i.e. marriages, hostage exchanges, etc.). The authors compared the changes evident in extant versions of these two games with relevant changes in pottery styles to determine that the games changed much less than pottery used at the sites. Comparing the two games, they felt that the complexity of Fifty-Eight Holes would have led to less innovation over time, but found that it experience 12 innovations in 67 boards studied produced over 1300 years vs. 14 innovations in 90 boards studied produced over 1250 years (de Voogt et al., 2013, p.

1727). This assumption would appear to be incorrect, as their data and conclusions show. Both games were transmitted and adapted in approximately the same manner.

Sources and Research

Research is at the heart of the study and teaching of the various branches of archaeology and associated fields, such as history. There are a wide variety of sources to draw upon and become familiar with to be able to present valid arguments and refute bad scholarship.

Archaeology and Anthropology Journals and Related Topics

One of the most prominent and obvious sources of research information are the journals related to the various branches of Archeology (Egyptology, Classical, Near Eastern, Anthropological) as well as related disciplines such as Anthropology and History. Having access to and keeping up with the current research published in such publications will keep a scholars work from becoming outdated.

Journals from Other Disciplines with Related Articles and Foreign Language Journals

As was shown with several of the articles summarized in this paper, articles about relevant topics can also appear in journals related to other disciplines (in this case Space Research/Astronomy and Human Biology). Articles related to the field can appear in many different venues, and being familiar with them, whether it appears in a version of the British journal *Nature* or *JAMA* or elsewhere is important for keeping up to date. Another source which needs to have some degree of familiarity is foreign and foreign language journals. Some, such as Hafsaas-Tsakos' 2009 article in *Norwegian Archaeological Review* are in English, but many articles and conference proceedings, such as some papers from the Meroitic Conference series, are only available in German or some other language. Some familiarity and facility with using these resources is also of great importance.

Dissertations

Dissertations by graduate students active in the field, such as Nicholas B. Millet's 1968 paper on Meroitic Nubia, are also key sources of information. Work done in dissertations is often available in advance of it being summarized in articles or formalized for book publication. Also, the work presented in some dissertations is never fully transferred to any other medium, so knowing of this potential source and having access to resources like the ProQuest Digital Dissertations database can be of importance, especially for the more obscure areas of study.

Photo Collections and Exhibits

Photo collections and materials published in connection with exhibits can be a source of materials to use in instruction and to share with students. Larson's 2006 *Lost Nubia* from an exhibit at the Oriental Institute at the University of Chicago and O'Connor's 1993 *Ancient Nubia: Egypt's Rival in Africa* are examples of this. Others would be materials published in connection with the two traveling King Tut exhibits (from the 1970's and 2000's) and other similar materials.

Books

There are, of course many books on topics related to this area of study. One that covers the entire period of the history of Ancient Nubia is David N. Edwards' *The Nubian Past*. A very in-depth treatment of the latter period of the history of Ancient Nubia is found in Lazlo Török's *The Kingdom of Kush: Handbook of the Napatan-Meroitic Civilization*. Because publication has become so easy in the modern world, with on-demand and vanity presses, almost anyone can put out their own conclusions in book form and sell in venues such as Amazon.com, without being subject to peer review, which would validate their arguments. Care must be exercised in the selection of such resources.

Conclusion

The ability to access and critically understand a variety of research approaches and types is crucial to being able to be an archaeological researcher, instructor, writer or presenter.

Appropriate material may not always be in the most obvious sources and a researcher must look at publications with a critical eye to evaluate whether they are appropriate and whether they agree with other research that has been conducted and published.

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