

Chapter 2

On Naming Things

Behavioral Changes in the Later Middle to Earlier Late Pleistocene, Viewed From the Eastern Sahara

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ABSTRACT

Understanding of human behavioral changes during the later Middle to earlier Late Pleistocene, encoded in the rudimentary record of stone artifacts, is impeded by problems of communication among archaeologists. For example: continued use of broad-scale developmental stage terms, such as “Earlier” vs. “Middle Stone Age” impedes understanding because of the multiplicity of implied meanings; continued widespread application of the term “Acheulean” to almost any unit containing large, bifacially trimmed “tools” impedes the understanding of subtle design changes. Nomenclature devised for content units from Dakhleh and Kharga Oases, Western Desert, Egypt, is a modification of recommendations made in 1965, which were aimed at greater flexibility and precision in naming cultural stratigraphic units.

BACKGROUND

I was recently bemused by finding passionate arguments about whether or not something is “Middle Palaeolithic” or even “Acheulean” (*cf.* Ronen and Weinstein-Evron 2000). What such arguments denote is that archaeologists are not communicating (*cf.* Clark 2002:50):

It was, as such things go, “successful”—socially enjoyable, intellectually stimulating, and so forth. What struck me most about this conference, however, was what was **not** said. It became evident, just below a thin veneer of informed and sophisticated debate, that there were enormous differences in the biases, preconceptions, and assumptions that the participants brought to the resolution of problems thought to be held in common. At times, these differences were so great that there was literally no common basis for discussion [original emphasis].

Such arguments usually occur because the underlying assumptions and interpretations embodied “in a name” are not objectified. And in general they reflect common archaeological practice—to begin defining and naming things from the “top down,” or the most general, rather than beginning with, and naming defined, basic analytic content units. That practice results in terms such as “Acheulean” becoming so over-extended, bearing so little precise meaning, that they are only the equivalent of the broad “developmental stage terms”: the “Earlier”, “Middle”, and “Later Stone Age”, or the “Lower”, “Middle” and “Upper Palaeolithic” terms.

An example is the following exchange of views (in Ronen and Weinstein-Evron 2000:229):

Romauld Schild: I agree. It [the Bockstein material] is Middle Palaeolithic. However, there are two sealed Late Acheulean sites at Dakhla, certainly before Stage 7, that contain classical Klausenischmesser and Prondniks together with unifacial side scrapers and hundreds of handaxes from amygdaloids through cordiforms, and Levallois technology. I think that they are three hundred thousand years old if not more. They also show the resharping scars of Prondniks.

Gerhard Bosinski: I agree, if you admit that this is Middle Palaeolithic.

Romauld Schild: No. To me it is Late Acheulean. We published it as Late Acheulean. You can not change it.

NOMENCLATURE

If one cannot change the referent, how does one disagree with the original ascription and name? Must one always go through long discussions of who called what, by what term and when, in terms of field units and their ascriptions? Might it be advantageous to have some system of nomenclature that refers to content or evidential units without implying assignments to such broad-named entities as “Middle Palaeolithic”, or “Late Acheulean”? It seems that whenever someone finds a large, bifacially worked lithic artifact in the Sahara they call it “Acheulean” (e.g., Siiriäinen 1999; Hill 2001). In my opinion, many of these do not “fit” any precise definition of African Acheulean, including the material originally excavated at Dakhleh (*contra* Schild and Wendorf 1977; Wendorf and Schild 1980; Kleindienst 1985). In order to refer to that material, as originally described, and to similar aggregates found by members of the Dakhleh Oasis Project, I introduced the term

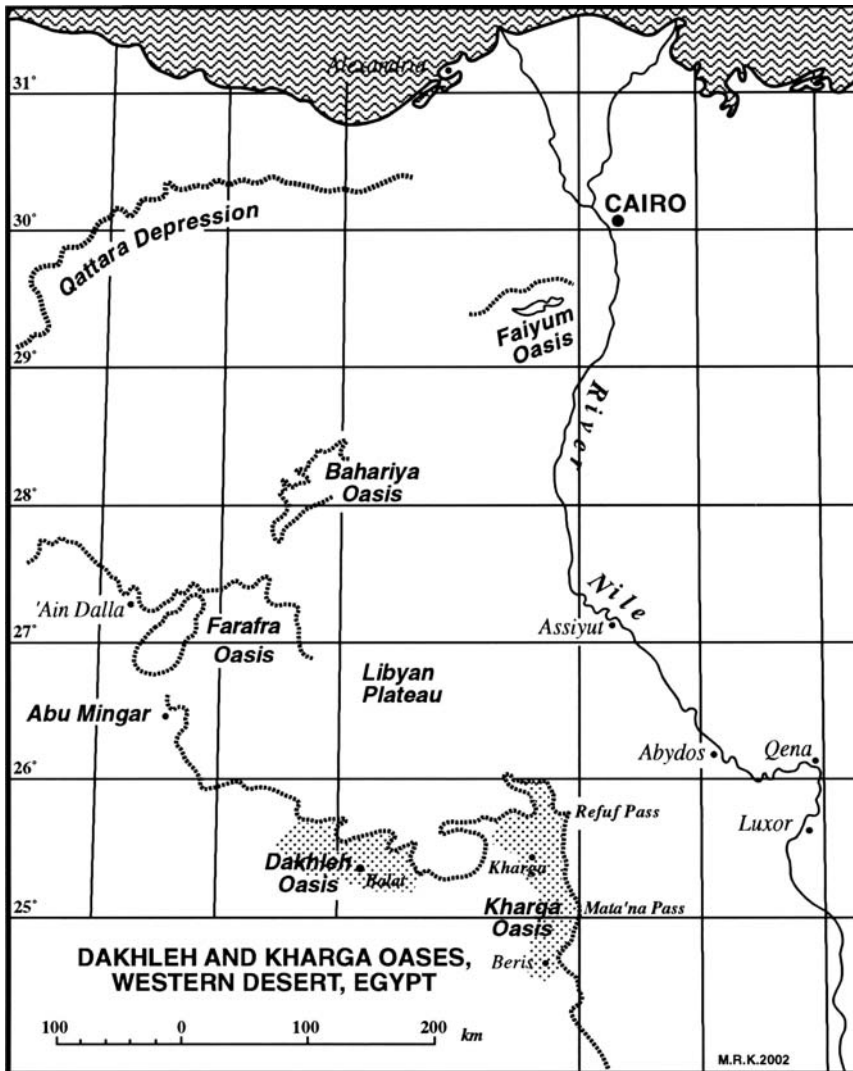


Figure 1. Map of northern and central Egypt, showing locations of the Dakhleh and Kharga Oasis depressions in the Western Desert.

“Balat Unit” (Kleindienst 1999:97–99), named for the nearest town in Dakhleh Oasis (Figure 1).

To justify that change in referent, I wish to hark back to a 1965 Burg Wartenstein symposium. Sadly, many participants are no longer with us. The person I most miss concerning the logic of classification and nomenclature is the late Glynn Isaac. The symposium participants made a number of recommendations regarding these fundamental archaeological procedures, which were published in *Background*

to *Evolution in Africa* (Bishop and Clark 1967:892–895), and a brief explanatory paper, *Precision and Definition in African Archaeology* (Clark *et al.* 1966) (Figure 2). J. D. Clark and I applied the principles of the recommendations in publications on Kalambo Falls (*cf.* Clark and Kleindienst 1974), as did Isaac (1977; Isaac and Isaac 1997). In brief (Bishop and Clark 1967:893–894):

An *Industrial Complex* is that grouping of Industries . . . considered to represent parts of the same whole. . . .

An *Industry* is represented by all the known objects that a group of prehistoric people manufactured in one area over some span of time. . . .

An *Archaeological Horizon* (alternatively *Archaeological Occurrence*) is the minimal cultural-stratigraphic unit which can be defined at any place . . . it denotes the cultural material **in its context** [original emphases].

Ideally, all of these should be named using local geographical names when they are published. Arbitrary names may be used when no local terms are available (Figure 2).

CULTURAL STRATIGRAPHIC NOMENCLATURE

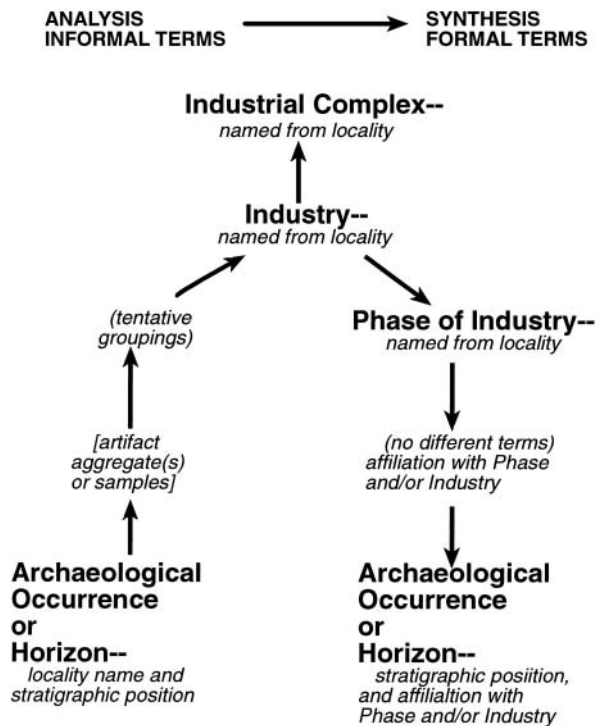


Figure 2. Nomenclature for cultural stratigraphic units as proposed in the 1965, Berg Wartenstein recommendations, after J. D. Clark *et al.* 1966:120. Note that the term(s) used for cultural materials extracted from Archaeological Occurrences or Horizons do not designate units.

Note that numerical or alphabetical designations are inherently inflexible, as are such designations as “early”, “lower”, “middle”, “later” or “upper”, especially those incorporating developmental stage terms. These produce confusion and miscommunication when one wishes to change the relative “positions” or time relationships among units named in that manner.

In the main, Berg Wartenstein recommendations have met with total disregard; although the term “cultural stratigraphic unit” has gained some currency (Kleindienst 1967), it is too often misused as “culture stratigraphic.” However, the only real objections I have ever heard are:

- 1) “What difference does it make what I call it?” Surely those who have any training in linguistics know that nothing makes more difference than what one calls something; and
- 2) “I can’t remember all the names!” Why would anyone want to do that? For instance, no geologist attempts to remember all the formation names in the world, and only uses the ones of immediate interest to the current research area. Nor does any palaeontologist attempt to remember all names for all biological species or genera, even in one area.

However, the Wartenstein recommendations were fatally flawed, because those in favor of such a system could not persuade their colleagues, particularly the European colleagues, to leave the “group of prehistoric people” out of the definition of the “Basic Unit,” termed an “Industry”. If one makes that assumption part of the definition, one is caught in a tautology when one actually wants to make interpretations of cultural content in terms of human behavior. In consequence, for use at Dakhleh and Kharga Oases in the Western Desert of Egypt, M. M. A. McDonald (dealing with Holocene prehistory) and I have modified the original definitions and call the Basic Unit just that: a cultural stratigraphic unit, or just (Cultural) “Unit” for short (Figures 3 and 4), which comprises only the cultural evidence. In using a structured, shorthand method of reference to facilitate scholarly communication, the intent is to divorce the nomenclature for evidential content units from *a priori* assumptions about the behaviors or relationships of the humans who may have produced that evidence. The principle is that one works using detailed comparisons from the “known” to the “unknown”, rather than by “fitting” the unknown into some broad, imprecise, named unit or stage that is historically overburdened with multiple, often conflicting, meanings. In practice, when supported by evidence, it is always simpler to combine (“lump”) lower-level units than it is to subdivide (“split”) higher-level, broadly generalized units once they are embedded in the literature and in textbooks.

So far as I know, no one other than the Africanists has ever proposed a formal, named field unit that includes cultural evidence (not just “objects”) in context (the Archaeological Occurrence or Horizon). Puzzling, for we all know that nothing is more important than context! And, in fact, most archaeological reports do subdivide the identified cultural evidence according to the recognized minimal contextual units, whatever they may be called. The cultural material extracted, then, can be called “aggregate”, “sample” or “collection”—whatever *does not denote*

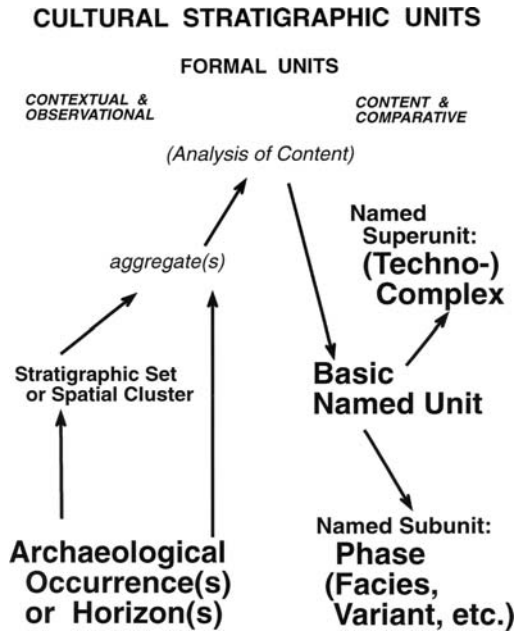


Figure 3. Nomenclature used for designating cultural stratigraphic units recognized at Dakhleh and Kharga Oases, Western Desert, Egypt. Note that term(s) used for cultural materials extracted from Archaeological Occurrences or Horizons do not designate units.

any “group of people” assumed to be related in any social or biological sense. It only refers to content, or the material or observations of evidence interpreted to be humanly produced. Of course, that interpretation itself embodies a large body of theory, tested or untested hypotheses, and assumptions which should be objectified (*cf.* Kosso 2001:39-58).

Analyses of extracted evidence allow definition and formal naming of Basic Units. The named units *do not* designate or imply any “people” other than as individual producers of evidence; they *do not* indicate ethnicity or the physical form of the ancestors; they *do not* mean time placement, although they occur within past time ranges. They refer only to the cultural content as defined. Nothing more, nothing less. Definitions can subsequently be expanded, or altered, with cause, but the original name stands. Having done that, one can then speak about behavior of the “people” in any manner that one chooses to interpret the cultural evidence.

Obviously, definitions need to be published (see Hawkins [2001] for an example of definition of the Dakhleh Unit, assigned to the Aterian Complex). Note that there is a difference between “formal” and “informal” usage: one can say that something exists, without fully defining or naming it, or by using “unit” uncapitalized. (Try getting that past journal editors, however.) Too often, no clear definition is provided for named units. Changes in definitions also should be clearly stated and published.

CULTURAL STRATIGRAPHIC UNITS			
Approximate Kyr ago	BASIC UNITS		COMPLEX
	DAKHLEH OASIS	KHARGA OASIS	
?	<i>Sheikh Mabruk Unit</i>	<i>Khargan Unit</i>	<i>Khargan</i>
40	<i>Dakhleh Unit</i>	<i>Kharga Aterian Unit</i>	<i>Aterian</i>
100	[<i>undefined unit(s)</i>]	<i>Mata'na Unit</i> ("Upper Levalloisian")	? Refuf
200	<i>Teneida unit</i>		? Refuf
300	<i>Gifata Unit</i>	<i>Refuf Unit</i> ("Lower Levalloisian")	
	<i>Balat Unit</i>		? Balat
400		<i>Dharb el-Gaga unit</i> <i>KO10 unit</i>	? Balat
	[<i>undefined unit(s)</i>]	[<i>undefined unit(s)</i>]	" <i>African Upper Acheulian, sensu stricto</i> "

Figure 4. Pleistocene-aged cultural stratigraphic units recognized as of 2002 at Dakhleh and Kharga Oases, Western Desert, Egypt.

The named Basic Units can be subdivided after they are defined, but one must begin with local units based upon cultural evidence from Archaeological Horizons or Occurrences, *i.e.*, one starts at the lowest analytical level, not the highest. Burg Wartenstein (Bishop and Clark 1967:893) recommended using "Phase" for subdivisions, but such terms as "Facies" may be appropriate for sub-units that are not time differentiated. A Basic Unit might subsequently be subsumed as a Phase or Facies within another Basic Unit, or a subdivision might later be established as a Basic Unit in itself, but the original local name should not change. In some cases a new designator might be required to distinguish the new status if the original name causes confusion in referencing: for instance, if an inflexible designator was originally used.

The Basic Units can be combined into higher-order units: "Complexes", or "Techno-Complexes", although we find that the original definition of the latter term (Clarke 1968) is too restrictive. What level of similarity in cultural evidence is needed for inclusion within a Complex is debatable. However, complexes were intended to reflect a defined content. They were not intended to be overly generalized across time and space beyond the range of the included defined Basic Units (see below). Again, they are only content units.

Burg Wartenstein (Bishop and Clark 1967:896-897) also recommended that the developmental stage terms such as "Earlier Stone Age", or "Lower Palaeolithic"

be discontinued. That has certainly not happened, possibly because they do continue to be useful when one does not wish to be precise. I use them also, but strictly as techno-typological developmental stage terms (see Kleindienst 1999), not related groups of people, not ethnicity, not time placement. If I use the words “Middle Stone Age” (MSA) I mean only that I have an archaeological occurrence, or possibly several similar, that I am not yet willing to define as a unit, but I can say that the culturally produced material bears the characteristics of the local MSA developmental stage. These terms are not part of the cultural stratigraphic system of nomenclature; they fall outside it.

DAKHLEH AND KHARGA OASES, WESTERN DESERT OF EGYPT

Figure 4 illustrates the use of archaeological nomenclature for prehistoric cultural stratigraphic units recognized to date at Dakhleh and Kharga Oases. We have found so little of what I, in desperation, have informally included within the African “Upper Acheulean Complex, *sensu stricto*” that I do not yet wish to give the material a unit name. We know that the material originally found at Kharga (Locus V, Refuf Pass, Caton-Thompson 1952) is beyond U-series dating range, *i.e.*, over 350,000–400,000 BP (Kleindienst *et al.* n.d.), as is “typical” African Upper Acheulean in southern Egypt (Schwarcz and Morawska 1993; Haynes *et al.* 1997).

We do have units, the Balat Unit in Dakhleh, and what I now informally designate as the KO10 unit and the Dharb el-Gaga unit in Kharga, which show design features in the production of bifaces that differ from the patterning usually seen in the African Upper Acheulean (Hawkins *et al.* 2001; Kleindienst *et al.* 2003). Caton-Thompson (1952) noted that in her original description of the material from locality KO10, as, in fact, did Schild at Dakhleh (Schild and Wendorf 1977). Although Kharga material is not identical to that from Dakhleh, many bifaces show working only of the point/bit, and of one or both laterals. This is related to, but not determined by, the selection of nodules or cobbles, mainly of cherts, rather than the production of large flakes for biface manufacture using mainly other raw materials. The forms produced are those noted by Schild (in Ronen and Weinstein-Evron 2000). In African typology, such forms are morphologically closer to “core axes” than to “handaxes” (Clark and Kleindienst 1974:95-98). However, at least some well-worked “handaxes” are included. The Dharb el-Gaga unit shows an interesting innovation in the selection of extremely thin chert nodules, which approximate “naturally-made” flakes, as the form of raw material used for manufacture of bifaces. Some are fully trimmed around the circumference; others are not. I have been unable to verify that extensive use of Levallois techniques occurred within these units at either Kharga or Dakhleh (Kleindienst 1999). Most occurrences are in geological context, which complicates matters: emplacement of the artifacts has been mainly or wholly by geological processes. Aggregates are found in gravels, in colluviums subjected to mass wasting and slope wash, in fossil artesian spring vents or on the surface of the desert veneer. They differ from the local MSA aggregates

dominated by specialized reduction techniques, where large bifaces or heavy-duty tools occur, but are rare.

In calling Balat Unit-type bifaces “Late” or “Final Acheulean” (Schild and Wendorf 1977; Kleindienst 1985) in the Sahara, I think we have been overlooking traits which differentiate such units from “typical” African Upper Acheulean. The differences are seen especially in the different choices of raw materials, and different patterning in minimally working many or most of the larger pieces, although some pretty bifaces continued to be made. Similar change in patterning occurs in the shift to the Central and East African Sangoan Complex (Sheppard and Kleindienst 1996; Kleindienst 1999).

So far, we have found no technological “transition” between units that have little or no use of Levallois methods, and those that make extensive use of those and other more regulated techniques. What developmental stage the locally named units represent, then, remains a matter for discussion (*e.g.*, Schild vs. Bosinski, above). Whether or not these units emphasizing large bifaces are regarded as terminal “Earlier Stone Age” does not change the local unit names. The important observation is that there were changes in what raw materials were selected, and in how those were treated after selection. Those are behavioral changes in preferences and design made by the ancestors. It is interesting that people may have hit upon similar designs in widely separated times and places, but calling those by the same name obscures that behavioral evidence. The relevant question is “why did that happen?”

In Kharga we know that predominant usage of Levallois and other specialized or more regulated techniques began at least 200,000 years ago, but we are still in the process of defining units and establishing time placements (Kleindienst *et al.* 1996, 2003; Churcher *et al.* 1999; Hawkins *et al.* 2001, 2002; Smith *et al.* 2004). Older, “larger-sized” generalized MSA units at Dakhleh (Kleindienst 1999) are now termed the Gifata Unit and the Teneida unit (Kleindienst 2003). I propose that Caton-Thompson’s (1952) stratigraphically older, larger-sized “Lower Levalloisian” at Kharga be renamed the “Refuf Unit” ($>220,000 \pm 20,000$ BP); her younger, medium-sized “Upper Levalloisian” might be renamed the “Mata’na Unit” (with associated dates of $>125,000 \pm 1,600$ BP and $>103,000 \pm 15,000$ BP). All of these could be grouped into the “Refuf Complex”. I would choose the name “Refuf” because that was the key section for Caton-Thompson and Gardner in establishing their cultural stratigraphic units in the 1930s. Their work should have precedence in nomenclature, but some of their units need to be renamed using local geographic terms in order to simplify referencing and for inclusion of new occurrences.

Whether any other material from the Western Desert, or the Nile Valley, is sufficiently similar to be included within this local complex will require future investigation. The Combined Prehistoric Expedition has introduced potential confusion in reporting on southern Western Desert localities (Kleindienst 2001). They initially called all or much of the MSA there “Aterian”, some “Mousterian”, and then discarded “Aterian” except for surface occurrences, in favor of “Paléolithique moyen à denticulés et à pièces foliacées bifaciales” (Wendorf *et al.* 1990:389).

Then, they referred to "... three kinds of Middle Palaeolithic ...": "Mousterian," "Aterian-related" and "Aterian" (Wendorf *et al.* 1993b:111). Finally, rather than defining "traditional" cultural units, "... we decided to emphasize those studies which would contribute to our understanding of Middle Palaeolithic behavior and its environmental context" (Wendorf *et al.* 1993a:4). Whether this is intended as informal usage of a developmental stage term is unclear.

Although the content definition of complexes is more problematic than that for Basic Units, complexes are not intended to extend over broad reaches of time and space for which evidence is lacking, or to be so generally defined as to include everything. For instance, researchers working in the Western Desert of Egypt (Schild 1998; Kleindienst 2000, 2003) and the Libyan Desert (Garcea 1998, 2001) have objected to the proposed "Nubian Complex" of Van Peer (1998; Van Peer and Vermeersch 2000). In 1998, Van Peer suggested that most North African material regarded as "Middle Stone Age" or "Middle Palaeolithic" or "Mousterian" should be designated as the "Nubian Complex", incorporating the long-accepted Aterian Complex. This term approximates "North African Middle Stone Age" in meaning, and ignores large areas for which evidence is lacking. This new complex was defined as having Levallois methods of specialized flake production, specifically the Nubian I and II methods for striking face preparation on cores (Vermeersch 2001). In 2000, the geographic extent for the "Nubian Complex" was apparently reduced to the southern portion of the Nile Valley in Egypt/northern Sudan and the surrounding Eastern Sahara, approximating "Middle Stone Age outside the central Nile Valley." Added to the definition were: bifacial foliates; retouched points, including "Mousterian" and "Nazlet Khater" types; truncated-facetted pieces; side scrapers; denticulates; and "... a good deal of Upper Palaeolithic types" (Van Peer and Vermeersch 2000:48-49). Schild noted the lack of Nubian methods in the southern Western Desert and Dakhleh. I have found little evidence for those methods in older generalized MSA units. Some usage occurs in the younger MSA units, and Nubian II is somewhat more common in Aterian Complex units at Kharga and Dakhleh, but Nubian cores are never the predominant method of Levallois flake production (Kleindienst 2003). Bifacial points are found in other African complexes (diagnostics in the Lupemban and the Stillbay), as are other retouched points. Truncated-facetting may be under-reported. Side scrapers and denticulated edges are ubiquitous. Why call any artifact class "Upper Palaeolithic" when it is found thousands of kilometers distant and tens of thousands of years earlier than a supposedly similar class in France?

A specific objection to subsuming the units of the Aterian Complex within a "Nubian Complex" is that the Aterian trait complex is not found in the central and northern Nile Valley in Egypt, nor in Nubia. Only one locality is known in a wadi draining into the main valley (Singleton and Close 1980; Kleindienst 2001). Aterian aggregates are sufficiently distinctive that one can recognize an occurrence before or without finding any diagnostic Aterian tangs (see Caton-Thompson 1946a). Further, there are still large areas of the flanking deserts, and even within the Nile Valley, for which we have no evidence. The term "Nubian Complex" masks variability rather than aiding communication about the clustering of typological and technological traits.

TRANSITIONS?

The interpretation of some unit contents as representing a “transition” is another problem: usually the word means a relatively rapid change in the condition or state of something. Given this book’s title, the concept requires some note here. From an anthropological viewpoint, the underlying theme in the debate over relationships, and in the hindsight search for “transitions” between traditional developmental stages, seems still to be “us handsome clever moderns” vs. “them archaic, other, brutish” humans. The original view:

“In the whole racial history of western Europe there has never occurred so profound a change as that involving the disappearance of the Neanderthal race and the appearance of the Crô-Magnon race. It was the replacement of a race lower than any existing human type by one which ranks high among the existing types in capacity and intelligence. . . . the Upper Palaeolithic may almost be said to be the period of the Crô-Magnons . . . ”(Osborn 1915:260).

The idea of looking for, or finding, supposed “transitions” embodies all the implications of all the assumptions about how change through time or space should, or could, occur as represented in cultural evidence. One implied assumption is that punctuated equilibrium characterizes changes in human behavior through time: *i.e.*, that the “Lower Palaeolithic” and the “Middle Palaeolithic” are relatively long-lived, static stages with a rapid “transition” in between. Such an assumption, however, ignores variability across time and space. The definitions of units, or of developmental stages, are our inventions. We draw the boundaries, so how can we expect there to have been “transitions”? Looking up the time scale rather than down, change is a continuum with no preordained direction. How change occurs differentially through time and space is the problem: studying that requires no system of nomenclature, but one for evidential units might aid comparative studies of their contents through reducing semantic confusions. Classifications are simplified, shorthand communication systems. Unless based upon demonstrably generic relationships between phenomena, classifications are inadequate as analytic tools.

The opposite assumption, that one should find continuity through time, previously characterized Pleistocene archaeology. For instance, at Kharga, Caton-Thompson and Gardner (Caton-Thompson 1946b, 1952), following Garrod at Tabun, thought they had found “transitions” between their “Acheulean” and “Levalloisian” units, termed “Acheulio-Levalloisian”, and between their “Levalloisian” and “Khargan Industry” units, termed “Levalloiso-Khargan”. Our geoarchaeological investigations indicate that in both cases, these “in between” units probably are multicomponent artifact aggregates created by geological redeposition (Hawkins *et al.* 2001; Kleindienst *et al.* n.d.).

To Africanists (*e.g.*, McBrearty and Brooks 2000), the search for the “Middle Paleolithic/Upper Paleolithic Transition” seems a search for evidential units that meet the assumptions for punctuated changes in developmental stages, whatever those stages are presumed to represent (Goring-Morris and Belfer-Cohen 2003). But, in terms of “human time” (minutes to days to years), if people rapidly change toolkits, or methods of manufacture, because something new has been invented

or discovered that is viewed as “better” or “advantageous”, what is a “transition”? What is it likely to look like? Why is it “transitional”? Do we see a “transition” between typewriters and computers? Although electronic communications may be transforming our lives for better or worse, in printing words, computers are just a new solution to an old problem. Typewriters were replaced and rapidly disappeared, although keyboard layout and the act of typing are retained. Is that in itself a major change in condition or state? Given our poor time control in the Pleistocene time ranges, could we expect to “see” any rapid transformations? Would evidence of intensified experimentation or increased variability be what we should look for when people are changing their minds about artifact production?

Moreover, what appears as “transition” in one area may be “continuity” in another. Copeland (2003:242-243) stated that:

I am assuming that the earliest dated manifestation of the Levantine Upper Palaeolithic [= developmental stage, or a “Super-Complex”?] is that of Boker Tachtit level 1 [= an Archaeological Occurrence] at ca. 46 thousand years ago . . . The Upper Palaeolithic start is defined as the magic moment when there was a sudden switch (or at least it appears to be sudden to us) to an Upper Palaeolithic toolkit made on blanks still produced by Mousterian techniques [= Complex]. . . . I will use the term Emiran [= a Basic Unit] when referring to the industry of this earliest Upper Palaeolithic phase [= subdivision of a developmental stage?].

Although Emiran is not defined only by the diagnostic Emireh point, this basally and ventrally thinned, small pointed flake was noted as different, and named in the Levant (Volkman and Kaufman 1983). This has then been taken as its locus of origin. At Sodmein Cave, in the Egyptian Eastern Desert:

Middle Palaeolithic level 1 (MP 1) [= Archaeological Occurrence]. Two Emireh points are present: one is complete and absolutely typical, the other is a distal fragment. Burins on blades occur as well. The cores that are present are all for blade production. A few Levallois endproducts are present. The presence of Emireh points in particular points to southwestern Asian contacts. Such points have never been found in African contexts up to now. Though the level is called Middle Palaeolithic here, it may in fact contain a transitional industry between the Middle and Upper Palaeolithic [= developmental stages], of the kind found at Boker Tachtit in the Negev (Van Peer *et al.* 1996:153).

Although not yet fully reported, the Sodmein cave sequence can as easily be interpreted to indicate that the shift from mainly Levallois-based lithic production in “Middle Palaeolithic level 5 (MP 5)” to blade production methods in “Upper Palaeolithic level 2 (UP 2)” covered a time span of some 90,000 years (Van Peer *et al.* 1996:153-154; Mercier *et al.* 1999). As Caton-Thompson noted long ago, in the Western Desert some blade production occurs throughout the MSA together with the other more specialized or regulated lithic production methods (Kleindienst 2003). As yet, we have no evidence for a mainly blade-based technology until the early Holocene.

In fact, the trait of basal thinning (unifacial on either flake face, or bifacial), worked on large or small pointed flakes, occurs in many African units and complexes dating from the late Middle to early Late Pleistocene. In the Western Desert, small retouched pointed flakes have been termed “Tabalbalat points” (Caton-Thompson 1946a), following Garrod and Bate (1937), who distinguished

them from Emireh points (*cf.* discussion in Hawkins 2001:327–330). Of relevance here is that Caton-Thompson (1952) describes such points in her “Upper Levalloisian” (Mata’na Unit) at Kharga Oasis now dated by uranium series to $\geq 100,000$ BP. This typo-technological trait, then, is older in the Eastern Sahara than in the Levant. It continues to occur in the succeeding Aterian Complex units at Dakhleh and Kharga, and across the Sahara (Hawkins and Kleindienst 2000) (note Aterian dating inserted by editors, not the authors [Hawkins 2001]). The Aterian Complex is now known to be beyond ^{14}C dating range in the Maghreb (Wrinn and Rink 2003), and probably dates at least 60,000 to 90,000 years BP in the Libyan Sahara (Cremaschi *et al.* 1998, 2000). As yet we have no chronometric dates for Aterian in the Western Desert (*contra* McBrearty and Brooks 2000), although it can be placed as younger than *ca.* 100,000 and older than *ca.* 40,000 years ago. Other traits such as variability in the Levallois core reduction patterns also indicate continuity of reduction methods in the Western Desert oases. In fact, there are units with Levallois methods of reduction that, based upon morphology, condition, and context, post-date the Aterian Complex (Wiseman 1999, 2001). The trait of ventral basal thinning has a long, continuous record in the Eastern Sahara. If this trait was transmitted to the Levant rather than independently invented there, possibly involving some useful innovation like a different method of hafting or just the idea of such, it came “out of Africa” (*cf.* Marks [2003], who also proposes strictly technologically-defined Basic Units). How is that “transitional”?

CONCLUSION

The scheme of nomenclature outlined is precise in referring only to cultural content, and above all, it is flexible. Perhaps it is time that people take another look at it? A practice of formally describing (defining) cultural stratigraphic units tends to make one consider what one is doing more carefully. What is the minimal contextual unit? Why? What precisely is the evidence for similarity or dissimilarity that predicates inclusion of occurrences within the same Basic Unit, or in different units? What are the built-in assumptions? After definition, only many analytic approaches applied to the cultural contents can inform us about behavior of the “people”, or challenge the original definitions. The issue is better communication between archaeologists regarding the observational and analytical evidence, which can then facilitate better behavioral interpretations. Nomenclature should facilitate communication, not impede it. Names do matter.

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REFERENCES CITED

- Bishop W.W. and J.D. Clark (Eds.) 1967. *Background to Evolution in Africa*. Chicago: University of Chicago Press.
- Caton-Thompson G. 1946a. The Aterian Industry: its place and significance in the Palaeolithic world. *Journal of the Royal Anthropological Institute* LXXVI: 87–130.
- Caton-Thompson G. 1946b. The Levalloisian Industries of Egypt. *Proceedings of the Prehistoric Society* n.s. XII: 57–120.
- Caton-Thompson G. 1952. *Kharga Oasis in Prehistory*. London: Athlone Press.
- Churcher C.S., M.R. Kleindienst and H.P. Schwarcz 1999. Faunal remains from a Middle Pleistocene lacustrine marl in Dakleleh Oasis, Egypt: palaeoenvironmental reconstructions. *Palaeogeography, Palaeoclimatology, Palaeoecology* 154: 301–312.
- Clark G.A. 2002. Neandertal archaeology—implications for our origins. *American Anthropologist* 104: 50–67.
- Clark J.D., G.H. Cole, G.L. Isaac and M.R. Kleindienst 1966. Precision and definition in African archaeology. *South African Archaeological Bulletin* XXI: 114–121.
- Clark J.D. and M.R. Kleindienst 1974. The Stone Age cultural sequence: terminology, typology and raw material. In J.D. Clark (Ed.), *Kalambo Falls Prehistoric Site*, pp. 71–106. Cambridge: Cambridge University Press.
- Clarke D.L. 1968. *Analytical Archaeology*. London: Methuen & Company Ltd.
- Copeland L. 2003. The Levantine Upper Palaeolithic: a commentary on contributions to the Philadelphia Symposium. In A.N. Goring-Morris and A. Belfer-Cohen (Eds.), *More than Meets the Eye: Studies on Upper Palaeolithic Diversity in the Near East*, pp. 242–248. Oxford: Oxbow Books.
- Cremaschi M., S. Di Lernia and E.A.A. Garcea 1998. Some insights on the Aterian in the Libyan Sahara: chronology, environment and archaeology. *African Archaeological Review* 15: 261–286.
- Cremaschi M., S. Di Lernia and E.A.A. Garcea 2000. First chronological indications on the Aterian in the Libyan Sahara. In L. Krzyzaniak, K. Kroeper and M. Kobusiewicz M. (Eds.), *Recent Research into the Stone Age of Northeastern Africa*, pp. 229–237. Poznan: Poznan Archaeological Museum.
- Garcea E.A.A. 1998. Comment on Van Peer, The Nile Corridor and the Out-of-Africa model. *Current Anthropology* 39 (Supplement): S131–132.
- Garcea E.A.A. 2001. A reconsideration of the Middle Palaeolithic/Middle Stone Age in northern Africa after the evidence from the Libyan Sahara. In E.A.A. Garcea (Ed.), *Uan Tabu in the Settlement History of the Libyan Sahara*, pp. 25–49. Firenze: All'Insignia del Giglio.
- Garrod D.A.E. and D.M.A. Bate 1937. *The Stone Age of Mount Carmel: Excavations at the Wady el-Mughara vol. 1*. Oxford: Clarendon Press.
- Goring-Morris A.N. and A. Belfer-Cohen (Eds.) 2003. *More than Meets the Eye: Studies on Upper Palaeolithic Diversity in the Near East*. Oxford: Oxbow Books.
- Hawkins A.L. 2001. *Getting a Handle on Tangs: The Aterian of the Western Desert of Egypt*. Ph.D. Dissertation, University of Toronto.
- Hawkins A.L. and M.R. Kleindienst 2000. The Aterian. In P.N. Peregrine and M. Ember (Eds.), *Encyclopedia of Prehistory*, pp. 23–45. New York: Kluwer Academic/Plenum Publishers.
- Hawkins A.L., J.R. Smith, R. Giegengack, M.M.A. McDonald, M.R. Kleindienst, H.P. Schwarcz, C.S. Churcher, M.F. Wiseman and K. Nicoll 2001. New research on the prehistory of the Escarpment in Kharga Oasis, Egypt. *Nyame Akuma* 55: 8–14.
- Hawkins A.L., J.R. Smith, R. Giegengack, H.P. Schwarcz, M.R. Kleindienst and M.F. Wiseman (2002). Middle Stone Age adaptations and environments in Kharga Oasis, Western Desert Egypt. *Nyame Akuma* 57: 54–55.
- Haynes C.V., T.A. Maxwell, A. El Hawary, K.A. Nicoll and S. Stokes 1997. An Acheulean site near Bir Kiseiba in the Darb el Arba'in Desert, Egypt. *Geoarchaeology* 12: 819–832.
- Hill C.L. 2001. Geologic contexts of the Acheulean (Middle Pleistocene) in the Eastern Sahara. *Geoarchaeology* 15: 55–94.

- Isaac G.L. 1977. *Ologresailie*. Chicago: University of Chicago Press.
- Isaac G.L. and B. Isaac (Eds.) 1997. *Koobi Fora Research Project*. Oxford: Clarendon Press.
- Kleindienst M.R. 1967. Questions of terminology in regard to the study of Stone Age industries in eastern Africa: "Cultural stratigraphic units". In W.W. Bishop and J.D. Clark (Eds.), *Background to Evolution in Africa*, pp. 821–859. Chicago: University of Chicago Press.
- Kleindienst M.R. 1985. Dakhleh Oasis Project. Pleistocene archaeology. Report on the 1986 season. *Journal of the Society for the Study of Egyptian Antiquities* XV: 136–137.
- Kleindienst M.R. 1999. Pleistocene archaeology and geoarchaeology: a status report. In C.S. Churcher and A.J. Mills (Eds.), *Reports from the Survey of Dakhleh Oasis, Western Desert of Egypt, 1977–1987*, pp. 83–108. Oxford: Oxbow Books.
- Kleindienst M.R. 2000. On the Nile Corridor and the Out-of-Africa model. *Current Anthropology* 41: 107–109.
- Kleindienst M.R. 2001. What is the Aterian? The view from Dakhleh Oasis, and the Western Desert, Egypt. In C.A. Marlow and A.J. Mills (Eds.), *The Oasis Papers I: Proceedings of the First International Symposium of the Dakhleh Oasis Project*, pp. 1–14. Oxford: Oxbow Books.
- Kleindienst M.R. 2003. Strategies for studying Pleistocene archaeology based upon surface evidence: first characterisation of an older Middle Stone Age unit, Dakhleh Oasis, Egypt. In G.E. Bowen (Ed.), *The Oasis Papers III: Proceedings of the Third International Conference of the Dakhleh Oasis Project*, pp. 1–42. Oxford: Oxbow Books.
- Kleindienst M.R., M.M.A. McDonald and C.S. Churcher 2003. Kharga Oasis Prehistoric Project: 2002 field season. *Nyame Akuma* 59: 17–25.
- Kleindienst M.R., H.P. Schwarcz, K. Nicoll, C.S. Churcher, J. Frizano, R.W. Giegengack and M.F. Wiseman 1996. Pleistocene geochronology and palaeoclimates at Dakhleh and Kharga Oases, Western Desert, Egypt, based upon uranium-thorium determinations from spring-laid tufas. Revised abstract. *Nyame Akuma* 46: 96.
- Kleindienst M.R., H.P. Schwarcz, K. Nicoll, C.S. Churcher, J. Frizano, R.W. Giegengack and M.F. Wiseman n.d. Water in the desert: first report on uranium-series dating of Caton-Thompson's and Gardner's "classic" Pleistocene sequence at Refuf Pass, Kharga Oasis. In M.F. Wiseman (Ed.), *The Oasis Papers II: Proceedings of the Second International Symposium of the Dakhleh Oasis Project*, submitted. Oxford: Oxbow Books.
- Kosso P. 2001. *Knowing the Past: Philosophical Issues of History and Archaeology*. Amherst, NY: Humanity Books.
- Marks A.E. 2003. Reflections on Levantine Upper Palaeolithic studies: past and present. In A.N. Goring-Morris and A. Belfer-Cohen (Eds.), *More than Meets the Eye: Studies on Upper Palaeolithic Diversity in the Near East*, pp. 265–273. Oxford: Oxbow Books.
- McBrearty S. and A.S. Brooks 2000. The revolution that wasn't: a new interpretation of the origin of modern human behaviour. *Journal of Human Evolution* 39: 453–563.
- Mercier, N., H. Valladas, L. Froget, J.-L. Joron, P.M. Vermeersch, P. Van Peer and J. Moeyersons 1999. Thermoluminescence dating of a Middle Palaeolithic occupation at Sodmein Cave, Red Sea Mountains (Egypt). *Journal of Archaeological Science* 26: 1339–1345.
- Osborn H.F. 1915. *Men of the Old Stone Age*. New York: Charles Scribner's Sons.
- Ronen A. and M. Weinstein-Evron (Eds.) 2000. *Toward Modern Humans. The Yabrudian and Micoquian, 400–50 k Years Ago*. Oxford: Archaeopress.
- Schild R. 1998. Comment on Van Peer, "The Nile Corridor and the Out-of-Africa model". *Current Anthropology* 39 (Supplement): S134–S135.
- Schild R. and F. Wendorf 1977. *The Prehistory of the Dakhla Oasis and Adjacent Desert*. Warsaw: Polish Academy of Sciences.
- Schwarcz H. and L. Morawska 1993. Uranium-series dating of carbonates from Bir Tarfawi and Bir Sahara East. In F. Wendorf, R. Schild, R. and A.E. Close (Eds.), *Egypt During the Last Interglacial. The Middle Paleolithic of Bir Tarfawi and Bir Sahara East*, pp. 205–217. New York: Plenum Press.
- Sheppard P.J. and M.R. Kleindienst 1996. Technological change in the Earlier and Middle Stone Age of Kalambo Falls. *African Archaeological Review* 13: 171–196.

- Siiriäinen A. 1999. Archaeological evidence for dating the sediment in a playa in Farafra, Western Desert of Egypt. In J. Donner (Ed.), *Studies of Playas in the Western Desert of Egypt*, pp. 113–146. Helsinki: Suomalainen Tiedeakatemia.
- Singleton W.L. and A.E. Close 1980. Report on site E-78-11. In F. Wendorf and R. Schild (Eds.), *Loaves and Fishes: The Prehistory of Wadi Kubbania*, pp. 229–237. Dallas: SMU Press.
- Smith, J., R. Giegengack, H.P. Schwarcz, M.M.A. McDonald, M.R. Kleindienst, A.L. Hawkins and C.S. Churcher 2004. Reconstructing Pleistocene pluvial environments and occupation through the stratigraphy and geochronology of fossil-spring tufas, Kharga Oasis, Egypt. *Geoarchaeology* 19: 407–439.
- Van Peer P. 1998. The Nile Corridor and the Out-of-Africa model. An examination of the archaeological record. *Current Anthropology* 39 (Supplement): S115–S140.
- Van Peer P. and P.M. Vermeersch 2000. The Nubian complex and the dispersal of modern humans in North Africa. In L. Krzyzaniak, K. Kroeper and M. Kobusiewicz (Eds.), *Recent Research into the Stone Age of Northeastern Africa*, pp. 47–60., Poznan: Poznan Archaeological Museum.
- Van Peer, P., P.M. Vermeersch, J. Moeyersons and W. van Neer 1996. Palaeolithic sequence of Sodmein Cave, Red Sea Mountains, Egypt. In G. Pwiti and R. Soper (Eds.), *Aspects of African Archaeology. Papers from the 10th Congress of the Pan African Association for Prehistory and Related Studies*, pp. 149–156. Harare: University of Zimbabwe Publications.
- Vermeersch P.M. 2001. “Out of Africa” from an Egyptian point of view. *Quaternary International* 75: 103–112.
- Volkman P.W. and D. Kaufman 1983. A reassessment of the Emireh point as a possible type fossil for the technological shift from the Middle to the Upper Palaeolithic in the Levant. In E. Trinkaus (Ed.), *The Mousterian Legacy* (BAR International Series 164), pp. 35–52. Oxford: BAR.
- Wendorf F., A.E. Close, R. Schild, A. Gautier, H.P. Schwarcz, G.H. Miller, K. Kowalski, H. Krolik, A. Bluszcz, D. Robins and R. Grün 1990. Le dernier interglaciaire dans le Sahara oriental. *L'Anthropologie* 94: 361–391.
- Wendorf F. and R. Schild, (Eds.) (1980). *Prehistory of the Eastern Sahara*. Academic Press, New York.
- Wendorf F., R. Schild and A.E. Close 1993a. Introduction. In F. Wendorf, R. Schild and A.E. Close (Eds.), *Egypt during the Last Interglacial. The Middle Paleolithic of Bir Tarfawi and Bir Sahara East*, pp. 1–7. New York: Plenum Press.
- Wendorf F., R. Schild and A.E. Close 1993b. Middle Palaeolithic occupations at Bir Tarfawi and Bir Sahara East, Western Desert of Egypt. In L. Krzyzaniak, M. Kobusiewicz and J. Alexander (Eds.), *Environmental Change and Human Culture in the Nile Basin and Northern Africa until the Second Millennium BC*, pp. 103–111. Poznan: Poznan Archaeological Museum.
- Wiseman M.F. 1999. Late Pleistocene prehistory in Dakhleh Oasis. In C.S. Churcher and A.J. Mills (Eds.), *Reports from the Survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987*, pp. 109–115. Oxford: Oxbow Books.
- Wiseman M.F. 2001. Problems in the prehistory of the late Upper Pleistocene of the Dakhleh Oasis. In C.A. Marlow and A.J. Mills (Eds.), *The Oasis Papers I: Proceedings of the First International Symposium of the Dakhleh Oasis Project*, pp. 15–25. Oxford: Oxbow Books.
- Wrinn P.J. and W.J. Rink 2003. ESR dating of tooth enamel from Aterian levels at Mugharet el'Aliya (Tangier, Morocco). *Journal of Archaeological Science* 30: 123–133.