

Dear Felix,

Please find below my reply to the reviewers' comments (in blue). I thank them both very much for their useful and constructive comments and for their help in improving the manuscript.

Kind regards,

Alice

#### REVIEW OF

Tool Types and the establishment of the later prehistory cultural taxonomic system in the Nile Valley (A. Leplongeon)

Giuseppina Mutri

This paper offers a detailed reconstruction of the history of research about the Late Palaeolithic in the Nile Valley, emphasizing the limitations of the approaches that have been used in the past while highlighting the research potential on the topic. The focus is on the Late Paleolithic studies, beginning from the end of '800 to the present day. One of the main biases identified is that the study of the Late Palaeolithic of the Nile Valley was based, in the last century, on the definitions elaborated for the French Upper Paleolithic. After decades of subjective criteria and use of non-standardized description, Leplongeon acknowledges that around the 1960 both Tixier's typology and a typology elaborated by Marks and Shiner were in use and contributed to the individuation of five Late Palaeolithic industries. It is with the work of the Combined Prehistoric Expedition (CPE) the idea that each "industry" became considered as the product of a specific social group. The author agrees with Close that other factors than socio-cultural aspects may explain the typological differences and the application of up-to date analytical methods should be promoted in order to overcome the biases of the rigid taxonomic units used in the past. Another aspect that, in my opinion, could strongly affect the composition of a lithic assemblage and his characteristics, is the function itself of the archaeological site where the assemblage has been found. At this regard, very little has been done in the past (Longo, 1997; Becker & Wendorf, 1993) and it may worth to integrate the future projects with the information about the function of the site.

Thank you for this comment. A paragraph has been added to clarify the potential of functional analysis in future studies in l. 586-891.

"Functional analyses themselves are however little developed for what concerns the Late Palaeolithic of the Nile Valley, although the ones available have led to a re-evaluation of categories of artefacts based on typology only (e.g., Jensen et al. 1991; Becker and Wendorf 1993; Longo 1997). This suggests that future studies integrating functional analyses have the potential to contribute to the meaning at-tached to the definition of these taxonomic entities."

Leplongeon has focused on the latest Pleistocene lithic complexes, remaining loyal to their definition as Late Palaeolithic. However, considering that the terminology originally elaborated for sub-saharan Africa is now widely accepted and used also in the Maghreb and in other NorthAfrican countries (Barton et al., 2013; Garcea, 2009; Inglis et al., 2018), it may be useful, from this moment forward, to define the Late

Pleistocene cultures of Egypt as Late Stone Age, to avoid any confusion with the European Late Palaeolithic.

Thank you for this comment. Because this paper looks at the cultural taxonomy from a historical point of view, it is less about being 'loyal' than to be consistent with the use of the European terminology at the time of the definitions of the industries. I however agree that this question should be addressed in the paper and have added a note on the terminology at the beginning of the paper, l. 56-90. I have also modified the title to avoid confusion.

"A note on the Late Palaeolithic versus Later Stone Age terminology

A long-standing debate exists over which terminology should be used in Northern Africa, where historically the European terminology (Middle and Upper Palaeolithic, Epipalaeolithic or Mesolithic, Neolithic) has predominated. Some researchers argue that the use of this terminology leads to biased interpretations of the archaeological record, where similarities with the European record are inferred rather than demonstrated (Garcea 2004b; 2004a; 2009; Kleindienst 2001; 2006; Dibble et al. 2013), and that the Africanist terminology Stone Age should be favoured. In addition, different labels for microlithic industries of the end of the Pleistocene in North Africa have been used, leading to a lack of comparability, so that researchers propose to group them under the term Later Stone Age (Hogue and Barton 2016). While this terminology appears to be now more and more adopted (e.g., Barton et al. 2013; Inglis et al. 2018; Bouzouggar, Humphrey, and Barton 2020), a consensus has however not been completely reached yet (e.g., Poti and Weniger 2019). Interestingly, in Northeastern Africa, the use of the label 'Later Stone Age' for the industries of the end of the Pleistocene is still rare (e.g., Kleindienst et al. 2020; Garcea 2020), with some researchers arguing for the upholding of the European terminologies due to the actual similarities with the Eurasian record, for the Upper Palaeolithic for example (Van Peer and Vermeersch 2007; Wurz and Van Peer 2012; Vermeersch 2020; but see Leplongeon and Pleurdeau 2011). In light of studies showing that the Late Palaeolithic industries of the Nile Valley seem to mainly represent local developments with few potential links with the North-Western African or Central African Later Stone Age (Close 1978; Marks 1968b; Wendorf 1968b; Schild and Wendorf 2010), and no demonstrated link with the Levantine Epipalaeolithic (Leplongeon and Goring-Morris 2018), the general adoption of the Later Stone Age terminology for the North-Eastern African industries at the end of the Pleistocene appears warranted. As this paper approaches the topic of taxonomy through an historical lens, the terminology 'Late Palaeolithic' is however kept throughout for consistency."

Overall this paper represents a useful synthesis for scholars and students and an excellent critical point of view to set the future researches on the Palaeolithic of the Nile Valley.

Thank you.

## ANONYMOUS REVIEW

The article by Alice Leplongeon is a very welcomed piece of research about the prehistory of the Nile Valley. The declared aim is that of investigating the consistency of the definition of the (very) many cultural entities identified over decades of research in NE Africa, and the influence such definitions still have on contemporary research, to address long-standing, and perhaps irremediable issue, i.e. easing comparability between different seasons of research set apart not only by number of years, but mostly by methodologies and research priorities. In doing this, the author sets out and relies on a very insightful, and also very useful for the reader, review of the research on the Late Stone Age of the Nile Valley, which has a long and important history rooted at the end of 1800's. The very core of the author's concern is the plethora of cultural entities coined during the second half of the past century, often defined on typologies based on little shared terminology hindering reanalysis of assemblages from old excavations and comparisons with new ones.

The manuscript is well structured and written and the aim of the article is very well delineated and clear. The title clearly describes the article but is maybe too wide in scope. The expression "later prehistory" might suggest the paper discusses e.g. Neolithic archaeology as well, which is not. Since the paper actually deals with Late Stone Age contexts of the very end of the Pleistocene, I would suggest a somewhat rephrasing of the title by adding for example "later Pleistocene prehistory" or terms like Late Stone Age/late Palaeolithic.

Thank you for your comment, the title of the paper has been modified accordingly: "Tool types and the establishment of the Late Palaeolithic (Later Stone Age) cultural taxonomic system in the Nile Valley"

The abstract is informative and clearly presents context, aims and conclusions of the article. The introduction clearly describes the reason for the study by providing a synthetic rationale and the main points of discussion. Since the article main part is a review of the research conducted in the Nile Valley and adjacent regions, I believe the introduction does not need to build too much on recent and past research, which is extensively addressed there. Yet I would suggest to at least add references for the statement in lines 31-33.

Thank you, references have been added.

I would elaborate a little more on the subject of occupation of desert areas during the harshest phases of the late Pleistocene (par. 3.2, lines 438-447) because 1) as the author correctly points out, it has been the object of intense debate and 2) it would further legitimate the focus of the article on the Nile Valley.

Thank you for this comment, the debate was indeed too succinctly summarised. I have added further details in l. 522-543

"For the later Pleistocene archaeology of Egypt and Sudan, most of the data available come from a stretch of the Nile Valley comprised between Sohag in Egypt and the 2nd cataract in Sudan. There has been a long standing debate in the literature over whether the desert was inhabited during the later Pleistocene, focusing on the chronological attribution and validity of the Terminal Middle Stone Age Khargan Complex as an archaeological entity (Vermeersch 2009; Kleindienst 2020; Kleindienst et al. 2020). In particular, Kleindienst (2020) and Kleindienst et al. (2020) review in detail the "Khargan quandary". As mentioned above, the Khargan, was first documented at Kharga Oasis, and was seen by Caton-Thompson as being a late development of the Levalloisian succession (Caton-Thompson 1946). The Khargan was later identified

in other oases of the Western Desert (Dakhla, Kurkur and Dungul (Hester and Hobler 1969; Kleindienst 2020)), and possibly in the Nile Valley and west of the Nile Valley (Debono 1971; 1972; 1973; and Olszewski, cited in Kleindienst 2020). Taking into account Khargan occurrences' settings, and state of the artefacts work by KOPP suggests that they postdate the Aterian and, provisionally, chronologically places them during MIS 3, where ESR (Electronic Spin Resonance) dates on freshwater pond snail shells document water availability in these areas (Kleindienst 2020). The Khargan Complex is therefore considered as a Terminal Middle Stone Age entity. Only three Later Stone Age localities were identified in Kharga, and their material remains unpublished (Kleindienst et al. 2020, 66). Although palaeoenvironmental data seem to point to periods with water availability in the oases of the Western Desert around the same time than the Late Palaeolithic in the Nile Valley, direct association with archaeological material is at the moment lacking. If partial overlap between the Khargan and Later Stone Age in the Western Desert oases and the Upper and Late Palaeolithic in the Nile Valley were to be confirmed, this would open a whole new set of research perspectives on regional interactions between the Nile Valley and adjacent deserts at that time."

Further, the title of paragraph 3.2 ends with a question mark, but it is not entirely clear to me whether the author is questioning the current state of affairs or whether it is rather a question about the real possibilities of standardisation. Either way, one would expect some kind of answer at the end or somewhere in the paragraph, which does not seem to come clearly. It is most likely me who misunderstood the rationale of this paragraph, but I would still like to invite the author to discuss this a little more clearly at the end of the paragraph, as this seems to be the very core of the study.

Thank you for this comment. This has been clarified at the end of the section, l. 616-6123, as follows:

While there has been some debates on the significance of typological approaches in the definition of taxonomic entities of the Late Palaeolithic of the Nile Valley with the work of Close and Lubell within the CPE, taxonomic entities (industries) defined based on tool and core types have prevailed and remained in use (e.g., Schild and Wendorf 2010). The way the industries were initially defined can therefore be considered as uniform. However, from the 1980s onwards, the rise of technological approaches to lithic assemblage led to problems when discussing the place of newly excavated assemblages in this framework.

References are accurately put, are appropriate and necessary. The tables and figures are clear and complete, are absolutely useful, and are understandable without relying too much on the text. I would strongly suggest adding at least one figure synthesizing the main typological classes of industries other than the Sebilian.

Thank you for your comment. I have added a table (table 2).