

From corpse to bones: funerary rituals of the Taforalt Iberomaurusian population

Du corps aux os : les rituels funéraires des populations Ibéromaurusiennes de Taforalt

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Abstract The funerary practices of the Taforalt population (Morocco, about 15-12500 Cal BP), already investigated by the authors in previous studies, were reconstructed through anthropological analyses of human remains (excavated by J. Roche in the 1950s) and examination of the available field documentation. The results indicated that the burial area included primary and secondary depositions, sometimes within the same grave, of approximately 40 adolescents and adults, as well as several children. There is evidence of treatment of the cadavers (disarticulation and defleshing) and manipulation of dry bones. The funerary practices at Taforalt involved a sequence of actions revealing a ritual character. These reflect the tripartite structure of Van Gennep's rites of passage, implying that death was conceived as a passage into another social dimension.

The aim of this study is to analyse the *post mortem* interventions on these human remains (corpses and bones) and to offer interpretative hypotheses as to their possible meaning, drawing on the findings of ethnographic research. We suggest that the collective dimension of the group was valued more highly than the members of the group as individuals, and that dry bones were

imbued with symbolic meaning. We also suggest that the cultural and social management (through rites) of natural events (death), associated with a strengthening of the bonds with earth (inhumation) and territory (cemetery), may be interpreted as heralding the emergence of a Neolithic pattern of thought.

Keywords Rites of passage · Treatment of cadavers · Ochre · Cut marks · Neolithic transition

Résumé Les pratiques funéraires de la population de Taforalt (Maroc, 15-12500 Cal BP) ont été étudiées par les auteurs dans des travaux précédents. La reconstitution de ces pratiques a été réalisée à partir de l'analyse anthropologique des restes humains (fouilles : J. Roche, années 1950) et de l'examen des documents disponibles de fouilles.

Ces travaux suggèrent que la zone d'inhumation comprend des dépôts primaires et secondaires, parfois dans la même sépulture, d'environ 40 individus adolescents et adultes, ainsi que de plusieurs enfants. Le traitement du cadavre (désarticulation, décharnement) et autres manipulations sur os sec sont attestés. Le comportement funéraire à Taforalt rend compte d'une succession d'actions à caractère rituel. Ces rites étaient structurés comme des rites de passage, dans lesquels la mort était probablement vue comme un passage à une autre dimension sociale.

Le but du présent article est d'analyser les interventions *post mortem* sur corps et os et de proposer une hypothèse d'interprétation de leur possible signification. En partant des recherches ethnographiques, nous proposons que la dimension collective du groupe était valorisée à la place de l'individu. Nous proposons que la gestion culturelle et sociale (à travers les rites) d'événements naturels (la mort), associée au renforcement des liens avec la terre (sépultures) et le territoire (inhumation) pourraient être

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perçues comme un changement dans la façon de penser annonçant le néolithique.

Mots clés Rites de passage · Traitement du cadavre · Ocre · Traces de décharnement · Transition vers le Néolithique

Introduction

The Taforalt Iberomaurusian¹ necropolis (Morocco, about 15-12500 Cal BP) is reported as the earliest cemetery in North Africa and includes 28 multiple burials excavated by J. Roche in the 1950s and at least 14 other recently recovered inhumations [3-6].

In previous studies we were able to reconstruct some aspects of the funerary practices of the Taforalt population, based on analyses of the human skeletal collection excavated by J. Roche in the 1950s and examination of the available field documentation, which is incomplete [7-9]. The results suggested that the burial area included primary and secondary depositions, sometimes in the same grave, of approximately 40 adolescents and adults, as well as many children. There is evidence of treatments of the cadavers (disarticulation, defleshing) and manipulation of dry bones. Some cases of *peri-mortem* violence were also documented. Our reconstruction revealed a sequence of actions of a ritual character. In these rites we identified the three phases recognised by Van Genepp [10] as characterising the rites of passage, implying that death was conceived as a passage to another social dimension [9,11].

Taking our previous works as a starting point [7-9], we focus here on the interventions on human remains in the period between the death of the individual and the final disposal of his/her bones. We postulate that these interventions aimed to 1) disaggregate the individual by dismembering the corpse or displacing the bones; 2) procure clean bones that, in one way or another, were manipulated in the course of symbolic (ritual) actions. We will provide interpretative hypotheses about the possible meaning of these two aspects, drawing on findings from ethnographic research.

Overview of the funerary rituals at Taforalt

The graves contain incomplete skeletons (in the great majority of cases) of several individuals, often represented only by “scattered” bones: 5 graves are “ossuaries”. Both primary and secondary inhumations are present, but the graves

¹The Iberomaurusian is the first Upper Palaeolithic culture of the Maghreb (about 20-10,000 BP) [1,2].

more often include both types. There is evidence of bone selection in several cases: 6 graves lack cranial elements; 7 graves have mandibles but no part of the corresponding skulls; 21 graves contain only one of two paired bones (long bones and shoulder girdle bones), 5 of which contain bones from one side only² [8]. Tool marks on bones attest that at least in some cases intentional interventions on the cadaver (disarticulation and defleshing) were carried out. The detached body parts were disposed of in different graves.

Dyeing of single bones with ochre was common (coloured bones were found in 13 graves). In general, only a few specimens per grave are coloured (the incomplete but fully dyed male skeleton from grave XII is an exception [7]), with a preference for cranial bones. Ochre was applied on bones from which the soft tissues had already been removed: only the right ulna of the “dwarf” woman from grave XX is dyed with ochre, while in coloured bones that also have cut marks, the pigment covers the cuts [7,8].

To sum up, bones were systematically displaced, sometimes coloured with red ochre, and finally disposed of as secondary burials, in graves containing the remains of other individuals. Bones were obtained in two possible ways: ‘naturally’, i.e. after decomposition, and ‘artificially’, through active defleshing carried out by humans. Interventions on partially decomposed corpses, requiring some mild intervention to disarticulate the bones to be removed and leaving no traces, cannot be ruled out. The sequence from primary burial to decomposition/defleshing and secondary burial reflects the structure of the rites of passage from one social condition to another [9,10] (Table 1).

From corpse to bones: treatment of the cadaver and bone displacement/manipulation

Evidence for treatment of the cadaver (disarticulation and defleshing) was found especially in graves V and XII (in grave XII, some lesions suggest the possibility of *peri-mortem* violence [7]).

²The well-preserved condition of the bones as well as a certain amount of repetition in the patterns of bone representation (e.g. long bones from only one side of the body) make it unlikely that the missing bones were lost for purely taphonomic or accidental reasons. We also think that the recovery of human remains during the excavation was well executed, since in certain cases the small bones of hands and feet, as well as the fragile bones of the axial skeleton, are present in the collection. Moreover, the absence of bones from some skeletons in the collection corresponds to their absence in the corresponding field plots (unfortunately, only a few field plots are available today, cf. [9]).

Table 1 Correspondence between the phases of the rites of passage identified by Van Gennep (1909) and those recognized in the Taforal funeral rituals / *Correspondance entre les phases des rites de passage identifiées par Van Gennep (1909) et celles reconnues pour les rituels funéraires de Taforal..*

Rites of passage (Van Gennep 1909)	Taforal funeral rituals (Mariotti <i>et al.</i> 2014)
Separation = symbolic death	Primary inhumation
Liminal period = transition	Decomposition and subsequent bone retrieval from previous inhumations
	Bone manipulation (bone use in ceremonies? sometimes coloured with red ochre)
Aggregation = symbolic re-birth	Secondary deposition (within the same grave; in other burials; in ossuaries)
	Corpse dismemberment
	Defleshing

In grave V, the male bones with cut marks are the right scapula (upper part of the lateral margin of the subscapular fossa, on the ventral surface; Fig. 1), the left radius and ulna (distal diaphysis and metaphyseal region; Fig. 1 in [8]) and the left femur (neck; Fig. 2). The *m. subscapularis* originates on the subscapular fossa and inserts into the minor tubercle of the humerus; severing it allows the detachment of this bone, which is in fact missing. In the radius and ulna, the cut marks are related to the disarticulation of the hand,



Fig. 1 Cut marks on the ventral surface of the lateral margin of the subscapular fossa (origin of *m. subscapularis*) on the right male scapula from grave V (Taf¹V 1952) / *Traces de décharnement sur la face ventrale du bord latéral de la fosse sub-scapulaire (origine du m. subscapularis) de la scapula droite d'un homme de la sépulture V (Taf¹V 1952).*

which is also missing. The cuts on the femoral neck were produced by severing the ligaments of the articular capsula in order to disarticulate the bone from the pelvis. There are no pelvic bones in the grave (Fig. 3).

In grave XII, the incomplete skeleton of a man (with all bones coloured with red ochre), besides traces of dismembering, shows traces of defleshing: the skull has scrape marks, and the cut marks on both coxal bones indicate severing of several muscles of the hip (e.g. lesser gluteal muscle, semitendinosus, long head of the biceps). The interventions on the two subadult skulls from grave XII (defleshing, face removal, enlarging of the occipital foramen with the margin of the lesion and both ecto- and endocranial surfaces dyed with ochre) are such that cannibalism cannot be excluded [7].

Even in the apparent absence of treatment of the cadaver (i.e. absence of tool marks on bones), some bones were separated from the skeleton they belonged to, probably after a



Fig. 2 Cut marks on the neck of the left male femur from grave V (Taf V-18) / *Traces de décharnement sur le col du fémur gauche d'un homme de la sépulture V (Taf V-18).*

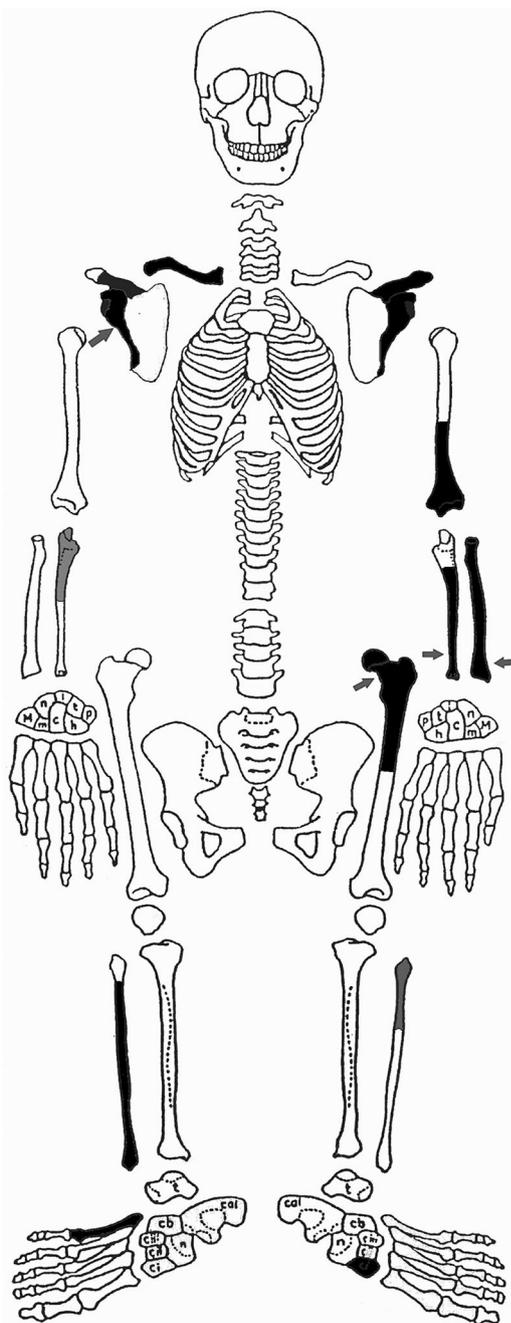


Fig. 3 Male bones from grave V (in grey, the bones that probably belong to another individual). The arrows represent the position of the cut marks / *Ossements d'un homme de la sépulture V (en gris les os qui appartiennent probablement à un autre individu). Les flèches montrent la position des traces de décharnement.*

period of interment, and were placed together with the remains of other individuals. A clear example of this practice is the case of grave XX (for which field plots and photographs are available [9]) containing the incomplete primary deposition of a young woman who is extremely small in comparison to the other members of the group ('dwarf'

[3,8]) and whose lower limb bones (except the left femur which was in grave XX) were found in grave XIX, together with the remains of other individuals. The right ulna of the woman must have been retrieved from the skeleton, coloured with ochre and repositioned in the same grave (grave XX). Grave XX contained some other bones belonging to at least two other individuals (including a male cranium [9,11]).

Extensive manipulation of bones is revealed by their intentional displacement and by the colouring of some of them with red ochre. Bones were dyed once cleared of soft tissues (naturally or, in graves VIII and XII, artificially), but the timing of the dyeing operation is impossible to ascertain. Were the bones obtained, manipulated to some extent and then coloured just before their final burial, or were they cleaned, coloured, manipulated over some time and finally disposed of as secondary burials?

Discussion

Regarding the interventions on the fresh cadavers, it has been proposed that corpse dismembering was a utilitarian practice in nomadic groups for the transportation of corpses of individuals who had died outside of the camp site [12,13]. We think that this possibility can be ruled out in the Tavoralt case for two main reasons: i) the missing left hand in grave V, for example, would not be too heavy or bulky to carry; ii) skeletons were also 'dismembered' (disaggregated) after a period of inhumation. Individual bodies, whether cadavers or skeletons, were disaggregated and the bones of different individuals put together in the same grave, and sometimes mixed up in ossuaries (e.g. grave XV). Apart from bovid skulls or horns, grave goods are usually absent (little stones or other simple items were found only in a few cases [4,6]). Overall, these characteristics point to an emphasis on the group rather than the single individual. Moreover, the presence of a cemetery in the Tavoralt cave indicates that these mortuary practices had achieved a social dimension. The Tavoralt necropolis is chronologically located in the late Pleistocene, a period of ecological changes promoting group enlargement and, consequently, social reorganization and cultural adaptation [2,12,14-16]. In this context, it seems coherent to interpret the funerary practices described above as linked to a need to strengthen group identity and cohesion [9].

Bone displacement and bone dyeing with ochre are evidence that clean bones were manipulated before their final interment. We cannot exclude that they were used in ceremonies, or that they circulated or were kept somewhere as relics for some time before their final disposal (cf. [16]). We can thus propose that another reason for the treatment of the cadaver at Tavoralt could have been to procure clean bones as an alternative to retrieving dry bones from earlier

inhumations after natural decay. These bones were perhaps used in various ways before being disposed of in the same grave they were recovered from (e.g. the coloured ulna of grave XX) or in other graves: one of these uses implied colouring them with red ochre. We do not have compelling evidence for cannibalistic practices even in the few cases where bone lesions could suggest them (grave XII, [7]); nevertheless, in this case too, bones were preserved, coloured and disposed of as secondary burials.

The apparent “interest” in clean bones in the Taforalt group implies that bones were imbued with symbolic meaning. In many societies, the gradual disappearance of unstable soft tissues from corpses represents the liminal period between life and death, while the stable dry bones indicate that the dead have been finally “aggregated” into the Other World [10,17,18]. In this context, it is possible that the red ochre recalled the blood of birth (the blood covering the newborn), thus symbolising re-birth into the new status of the dead [11]. If this was the case at Taforalt, bone dyeing would be the very last action performed on bones before their final interment, allowing or facilitating the re-birth of the dead into their new status. Bones, representing the stable phase after a lifelong period (and beyond!) of transformation, could symbolise continuity of the individual/group.

Conclusion

There is evidence of inhumation towards the end of the Pleistocene of many individuals in specific places (“ceme-teries”) in the Mediterranean area (North Africa, Natufian Levant, Epigravettian Italy [12,16,19-21]³.

This phenomenon has been related to ecological changes that induced, or made possible, intensive exploitation of the environment, with groups increasing in size and decreasing in mobility (prolonged sedentism). In this context, forms of social cohesion developed, including funerary rituals in communal places [12,14,16-18,26]. Cultural changes probably also included the genesis of new belief systems that required new symbolic systems to be communicated and shared. The behaviour patterns described here have a long history. Since the dawn of humanity, humans have been curious about death, concretely represented by the lifeless (human or animal) corpse. Animal corpses were skinned, dismembered, defleshed, consumed as food, the bones worked to obtain various objects, etc. At the same time, we

³This does not exclude the contemporaneous presence of other funerary practices or rituals. Note that, for example, inhumation and cremation coexisted in the ancient Roman world, and still do in the Western world. The variability of funerary behaviour within a certain society, even in the absence of corresponding changes in religious beliefs or in the general cultural context, is well documented by archaeological, historical and ethnographic sources [12,22-25].

can assume that all the body parts were carefully inspected, resulting in a sound knowledge of anatomy that was certainly advantageous for survival. It is possible that in hunter-gatherer societies, animals were perceived as part of the same nature as humans (cf. [27]), and were all treated likewise after death. But it is also possible that in this period of profound change, humans began to think of themselves as different, with more possibilities and more power... Corpse and bone manipulation could represent the persistence of ancient traditions, but perhaps endowed with a new significance, such as an assertion of social membership, identity and cohesion. Bones possibly became symbols of a group’s stability despite the death of group members. Humans may have thought that by mastering death they could master their future fate. In these funerary rituals, in our hypothesis, humans built up groups by disaggregating individuals to ensure a new and continuing life for themselves and/or for the group.

The *post mortem* fate of human remains was conceived according to known and manageable schemes. If the funerary rites at Taforalt represent attempts to master death, a parallel can be suggested with later attempts to manage animal and plant life cycles: a ‘domestication’ of death prior to the domestication of plants and animals. The bonds with earth (inhumation) and territory (cemetery), as well as the power exercised by humans over ‘nature’, could represent forms of exaptation to the development of a Neolithic ideology (cf. [16]).

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References

1. Barton RNE, Bouzuoggar A, Hogue JT, et al (2013) Origins of the Iberomaurusian in NW Africa: New AMS radiocarbon dating of the Middle and Later Stone Age deposits at Taforalt Cave, Morocco. *J Hum Evol* 65:266–281
2. Bouzuoggar A, Barton RNE, Blockley S, et al (2008) Reevaluating the Age of the Iberomaurusian in Morocco. *Afr Archaeol Rev* 25:3–19
3. Ferembach D, Dastugue J, Poitrat-Targowla MJ (1962) La Nécropole Épipaléolithique de Taforalt (Maroc oriental), Editat-Casablanca, Rabat, CNRS, Paris, 175 p
4. Humphrey L, Bello SM, Turner E, et al (2012) Iberomaurusian funerary behaviour: Evidence from Grotte des Pigeons, Taforalt, Morocco. *J Hum Evol* 62:261–273

5. Humphrey L, De Groote I, Morales J, et al (2014) Earliest evidence for caries and exploitation of starchy plant food in Pleistocene hunter-gatherers from Morocco. *PNAS* 111:954–959
6. Roche J (1963) *L'Épipaléolithique marocain*, Didier, Paris, 261 p
7. Belcastro MG, Condemi S, Mariotti V (2010) Funerary practices of the Iberomaurusian population of Taforalt (Tafoughalt; Morocco, 11-12,000 BP): the case of grave XII. *J Hum Evol* 58:522–532
8. Mariotti V, Bonfiglioli B, Facchini F, et al (2009) Funerary practices of the Iberomaurusian population of Taforalt (Tafoughalt) (Morocco, 11-12000 BP): new hypotheses based on a grave by grave skeletal inventory and evidence of deliberate human modification of the remains. *J Hum Evol* 56:340–354
9. Mariotti V, Condemi S, Belcastro MG (2014) Iberomaurusian funerary customs: new evidence from unpublished records of the 1950s excavations of the Taforalt necropolis (Morocco). *J Archaeol Sci* 49:488–499
10. Van Gennep A (1909) *Les rites de passage*, Émile Nourry, Paris, 288 p
11. Mariotti V, Condemi S, Belcastro MG (2015), The study of human remains in the reconstruction of funerary rituals: the Iberomaurusian necropolis of Taforalt (Morocco, 15000-12500 Cal BP). In: Nizzo V (ed) *Archeologia e antropologia della morte, Atti del III incontro di studi di Antropologia e Archeologia a confronto*. Roma, 20-22 maggio 2015 (in press)
12. Byrd BF, Monahan CM (1995) Death, Mortuary ritual, and Natufian Social Structure. *J Anthropol Archaeol* 14:251–287
13. Haverkort CM, Lubell D (1999) Cutmarks on Capsian Human Remains: Implications for Maghreb Holocene Social Organisation and Palaeoeconomy. *Int J Osteoarchaeol* 9:147–169
14. Kuijt I (1996) Negotiating equality through ritual: A consideration of Late Natufian and Prepottery Neolithic A period mortuary practices. *J Anthropol Archaeol* 15:313-336
15. Belfer-Cohen A, Hovers E (1992) In the eye of the beholder: Mousterian and Natufian burials in the Levant. *Curr Anthropol* 33:463–471
16. Linstädter J, Eiwanger J, Mikdad A, et al (2012) Human occupation of Northwest Africa: A review of Middle Palaeolithic to Epipalaeolithic sites in Morocco. *Quaternary International* 274:158–174
17. Pettitt P (2011) *The Palaeolithic Origins of Human Burial*, Routledge, New York, 307 p
18. Hertz R (1905-6) Contribution à une étude de la représentation collective de la mort. *Année Sociologique*: 48-137
19. Metcalf P, Huntington R (1991) *Celebrations of Death. The Anthropology of Mortuary Ritual*, Second Edition, Cambridge University Press, New York, 236 p
20. Belfer-Cohen A, Hovers E (1992) In the Eye of the Beholder: Mousterian and Natufian Burials in the Levant. *Curr Anthropol* 33(4):463–471
21. Formicola V, Pettitt PB, Maggi R, et al (2005) Tempo and mode of formation of the Late Epigravettian necropolis of Arene Candide cave (Italy): direct radiocarbon evidence. *J Archaeol Sci* 32:1598–1602
22. Goring-Morris N, Belfer-Cohen A (2013) Different Strokes for Different Folks: Near Eastern Neolithic Mortuary Practices in Perspective. In Hodder I (ed) *Religion at work in a Neolithic society*. Cambridge University Press, New York, pp 35-57
23. Natali C (2006) “I combattenti li seppelliamo”: mutamenti nel trattamento del corpo morto fra le Tigri Tamil (Sri Lanka). In Remotti F (ed) *Morte e trasformazione dei corpi. Interventi di tanatometamorfosi*. Paravia Bruno Mondadori Editori, Milano, pp. 228-241
24. Nock AD (1932) Cremation and Burial in the Roman Empire, *Harvard Theological Review* 25(4):321–359
25. Parker Pearson M (1999) *The Archaeology of Death and Burial*, Stroud, Sutton, 250 p
26. Ucko PJ (1969) Ethnography and archaeological interpretation of funerary remains, *World Archaeology* 1(2):262–280
27. Chénier A (2009) Bones, people and communities: Tensions between individual and corporate identities in secondary burial ritual. *Nexus: Canadian Stud J Anthropol* 21:27–40
28. Descola P (2010) *Diversité des natures, diversité des cultures*, Bayard Éditions, 84 p