

Skeletons and Scent: The Importance of Odor in Death Rituals at Tell Majnuna, Syria, in the Early Fourth Millennium BC

Jill A. Weber

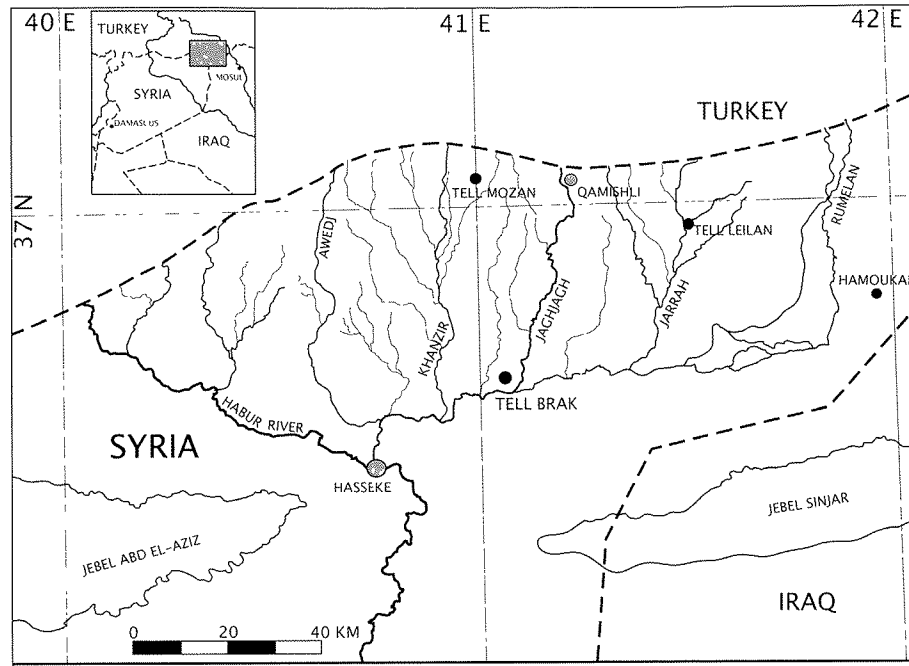


Figure 1: Tell Brak's location within northern Syria.

In the late-fifth and early-fourth millennium BC, the area around Tell Brak (figure 1) was undergoing rapid and substantial growth in population and expansion of settlement. Accompanying the process of urban development were growth in the scale and size of craft production, increased levels of monumentality and prestige display, and the general proliferation of communal activities. These developments, coupled by needs for more agricultural and pastoral lands, resulted in changes in spatial patterning and site configuration. Specifically, at least seven 'satellite' settlements were established around the perimeter of the main, mounded settlement. One of these, Tell Majnuna, was created almost entirely of debris consisting primarily of large amounts of broken ceramics, and skeletal remains of humans and animals. While, generally, this debris resembles rubbish, the limited range and homogeneity of the remains suggest that they are specialized in nature and derived from a limited range of activities. The episodic dumping of human skeletal material indicates that at least one of those activities was 'mortuary' in nature. As such, Tell Majnuna may be viewed

as a mortuary landscape related to a specific event(s) or group(s) of people.

Human skeletal material occurs at Majnuna in varying degrees of fragmentation, from complete skeletons to dense collections of disarticulated and broken elements. Disarticulation, while prompted by natural processes of decay, was enhanced through exposure and multiple types of skeletal manipulation – including episodes of gathering, movement, and reburial, and also intentional breakage and modification. The mortuary procedures and rites all culminate in their disposal as – and with – rubbish. Other aspects of the varied mortuary practices displayed at Majnuna suggest that biological decay and its distinct odor were manifestations of transformation from life to death, including the intriguing example of human skeletal re-burial beneath rotting animal-flesh. Similarly, contemporary 'closure rituals' in monumental buildings were distinctively marked by burial with rotting flesh, signifying that decay was a marker of biological *and* social death. I suggest that putrid odors both characterized and mimicked death, and the death of social obligations

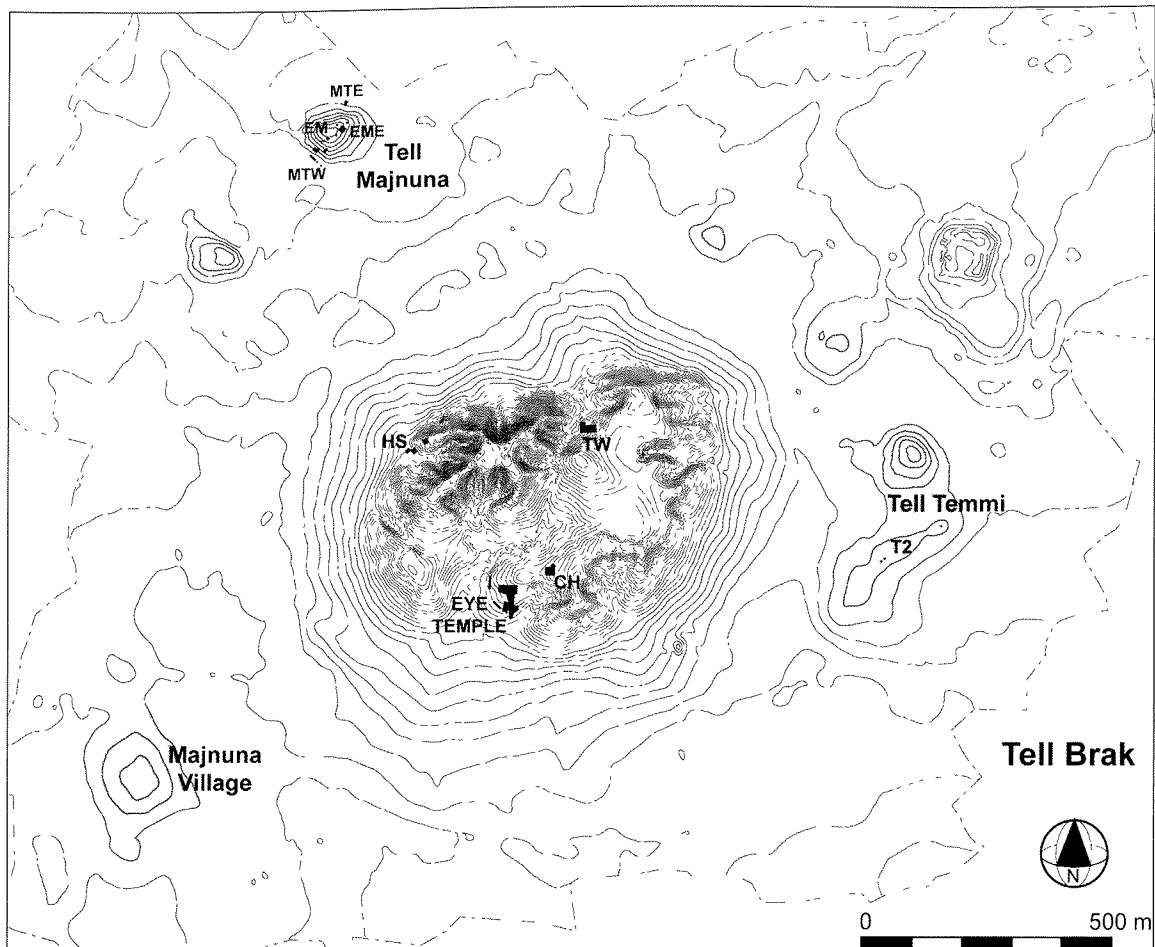


Figure 2: Topographical map showing excavation areas at Tell Brak and Tell Majnuna.

and relationships; decay of flesh became a ritual path to forgetting the people and the past – a necessary step toward the re-use and re-purposing of space and relationships in a rapidly changing environment.

1 Tell Brak in the fourth millennium

In the late fifth/early fourth millennium (Late Chalcolithic 2), Tell Brak was already a large, socio-economically diverse settlement covering roughly 55 hectares (figure 2).¹ The entire main mound was occupied and a few satellite settlements in a 'corona' surrounding the high tell were founded, including Tell Majnuna.² In the early- to mid-fourth millennium (Late Chalcolithic 3), the satellite settlements saw intensified use, and many of the open spaces between these satellites and the main tell were consumed through expansion of the human landscape; roughly 130 hectares were occupied.³ Wool

was likely a major economic focus during the Late Chalcolithic 3, and intensified pastoral production coupled with human expansion around Brak would have led to extensive herding on the steppes beyond Brak's agricultural fields, as indicated by both zooarchaeological and archaeobotanical data.⁴

Tell Brak's Late Chalcolithic 3 levels have been reached in widely spaced and functionally varied areas of the Tell and corona, revealing a sophisticated and complex community with highly differentiated symbolic, economic, and ceremonial activities occurring across the settlement. An extensive scale of spatial segregation is indicated by the presence of specialized rubbish-deposits at the satellite tells.⁵ New, dedicated rubbish-dumps may have been a necessary supplement to the large-scale industrial and communal activities found on the main mound dating to the Late Chalcolithic 3. Accompanying urban growth was an elaboration of the socio-economic complexity already present in the Late

¹ Oates *et al.* 2007.

² McMahon – Oates 2007: 5; Ur – Karsgaard – Oates 2007.

³ Ur – Karsgaard – Oates 2007.

⁴ Colledge 2004: 415; Weber *forthc.*

⁵ Emberling – McDonald 2001: 45; Skuldboel 2009: 59–60.

Chalcolithic 2.⁶ Extensive excavations in Area TW indicate greater concern with bureaucratic reckoning, and accounting is indicated by the increase in that genre of paraphernalia: particularly represented by sealings, but also including pot marks, tokens, numerical tablet, and 'dockets'.⁷ The earliest Late Chalcolithic 3 occupation (Level 19) housed a quite large scale of craft activities, as indicated by the substantial quantities of equipment recovered, including raw materials (bitumen, semi-precious stones, flint, obsidian, mollusc (*Unio* sp.) shells), instruments for transforming (fire installations, grinding stones) and tools for crafting (spindle whorls, stone blades, bone points).⁸ Functional ceramics, some used for storage and measurement, large numbers of seal impressions and, possibly, 'blanks' for making sealings attest to calibrating, reckoning and controlling goods procurement, transformation and dispersal on what was likely an 'industrial' scale.⁹

The core of the Late Chalcolithic 3 is marked by communal behaviors, evidence for which was found in contemporary levels of Area HS, as well as deposits from Area TW and Tell Majnuna that are discussed below.¹⁰ In particular, evidence for large-scale feasting is abundant in both areas. In Area TW, feasting was carried out in the privileged setting of a monumental, public building. At Tell Majnuna, feasting was conducted in conjunction with the broader communal rituals of mortuary practice.

1.1 Feasting and closure deposits in Area TW

The industrial character of TW Level 19 is succeeded in Levels 18–14 by a series of related, public and domestic constructions. Numerous domestic houses were recovered, some with large amounts of wealth preserved in precious materials.¹¹ Successive houses were unified around a monumental, tri-partite structure building, portions of which were in use throughout the majority of the period in question. Individuals associated with this building may have controlled the wealth and industry evident in the surrounding buildings. This formal building was distinguished by its enclosed courtyard with niched and buttressed facade, long mud-brick bench, and series of large-scale ovens, which may have been used as a reception hall.¹² The ovens were too large for individual use and were likely used for commu-

nal cooking and shared meals, evidence for which is found on the courtyard floors.¹³ The bones, plus ceramics, lithics, and fuel and ash from cooking were left on successive courtyard floors and then covered over very quickly; in essence, they were buried in place.¹⁴ They were undisturbed by carnivores, rodents or weather, and even very low-density, fragile, small and 'young' bones were recovered intact. The remains are mostly unaltered from their original deposition, as is indicated in one case by the patterned distribution of bones from different taxa and symmetry. In that example, bones of the right-side of the body from sheep and gazelle were limited to the eastern portions of the courtyard, while bones from the left side of the same taxa were found with right-symmetry goat bones in the western portion of the courtyard. Left-symmetry goat bones were commingled in the largest pile – at the center – with bones of cattle. Due to this *in situ*, primary burial of feasting remains, a 'feasting signature' was developed that is characterized by quantity, taxa, processing, preparation, and discard.

These are identified as episodes of *communal* meals based on the large number of complete – but butchered, disarticulated, and cooked – carcasses, discarded in quantities greater than could be consumed fresh by a single family, suggesting they were shared.¹⁵ Each feast contained meat from ten or more whole animals; sheep, goat, cattle were the most common taxa consumed, while gazelle is infrequent but privileged, and neither pig nor equid was served at the communal meals; onager and pig meat is found in non-feasting contexts. Whole carcasses were introduced into the courtyard, where they were uniformly processed; the meaty bones were fractured through pounding in order to release more juices, fats and marrow during cooking, which was done by dry heat on or in the large-scale grills and ovens. This signature applies equally to relatively mundane shared meals in apparently domestic context in Area TW and to those that occurred in the monumental building. Meals shared in the monumental 'feasting building' were lent greater formality not only by its niched walls, but also by the skins of bear, lion and fox that graced it.¹⁶ Another testament to the greater formality of these meals was the evident social distinction displayed through a hierarchy of meat types and cuts, suggesting the relatively high status of those involved.¹⁷ Yet, what further distinguishes these feasts from mere 'communal' meals is that after consumption, all bones from the shared,

6 Oates *et al.* 2007: 598.

7 Oates – Oates 1997; McMahon 2009; Oates *et al.* 2007.

8 McMahon – Oates 2007: 7.

9 *Ibid.*: 7–8, 11; Oates *et al.* 2007: 591–593.

10 *Ibid.*: 587; Matthews 1996: 70.

11 Emberling – McDonald 2002; 2003: 9, 12, fig. 12; Oates – Oates 1993: 174, 177–178, figs. 11, 28.

12 Oates – Oates 1997: 225; Emberling – McDonald 2001: 22–25.

13 Charles *et al.* 2001; Weber *forthc.*

14 Charles *et al.* 2001.

15 E.g. Kaplan – Hill 1985; Ochsenschlager 1993: 38.

16 Weber *in press*.

17 Wright 2004.



Figure 3: Mass grave in Area MTW.

complete carcasses – meaty and extremity – were discarded together on the floor and left there to rot.

This preservation of primary rubbish from feasting is both remarkable and aberrant; most living floors within these same levels were kept quite clean.¹⁸ The cultural logic behind leaving large amounts of rotting meat bones in a high-status living space is unclear, but the many shared features of such deposits – particularly in the ‘feasting building’ – suggest that the act was deliberate. Three times was feasting debris left on the floor and immediately buried, and three times was that floor rebuilt shortly thereafter. The repeated acts of feasting, aberrant discard, and rebuild suggest ritualistic activity, perhaps designed to ‘terminate’ a use-phase of the building or courtyard. In this way, the deposits presage the elaborate mid-third millennium ‘closure rituals’ of large, public buildings at Brak.¹⁹

1.2 Mass graves and feasting at Tell Majnuna

Tell Majnuna is a satellite mound located to the north of the main tell (figure 2). Excavations were begun as rescue work when the landowner’s bulldozer cut across the tell revealing stratigraphy full of human and animal bones, and large amounts of pottery. Excavations conducted in several areas (see map) across the mound revealed Majnuna was literally composed of layers rich with rubbish up to seven meters deep, some of which were unique for their large quantity of human bone. The earliest depos-

its date to the earliest centuries of the fourth millennium, and consist of thin layers of rubbish with small amounts of human bones. The main period of deposition dates to a 200 year period from ca. 3800–3600 BC.²⁰ During that time, human skeletons in various states of (dis)articulation had been interred, moved, and manipulated, possibly several times, both to and within the rubbish dump. In addition to these episodic placements of human skeletal materials, large amounts of animal bones, ceramics, small objects and clay scalings were also discarded.²¹ Such dumping occurred episodically over a few centuries. After ca. 3600 BC, the only evidence of subsequent deposition are surface traces of late-first millennium BC architecture.

1.2.1 Area MTW

Area MTW, along the south-western edge of the tell, contains the earliest mass-deposit of human and animal remains (figure 3). Traces of dumping activity dating to the first centuries of the fourth millennium were found on virgin soil, which contained small amounts of fragmented and disarticulated human and animal bones and ceramics. Atop these deposits, on one, prepared, surface was a single, mass grave accumulated over only a few days.²² This pile is at least 20 m long and 3–4 m wide; it was densely packed with human and animal bones, and was cov-

18 Rainville 2003.

19 Oates – Oates – McDonald 2001: 41–53, 90–91.

20 McMahon – Oates 2007: 5.

21 Ibid.; McMahon 2009; McMahon – Soltysiak – Weber 2011.

22 McMahon – Soltysiak – Weber 2011: 206.

ered over with large quantities of ceramics that set the event date at ca. 3800 BC.

The bottom of the pile contained mainly human remains – likely several hundred individuals in the entire mass grave.²³ The pile contained males and females ranging in age-at-death from ca. one year old to greater than 50 years of age.²⁴ Most prevalent were young adults, while infants and the elderly were absent. Ten individuals showed evidence for healed head wounds.²⁵ None of the recovered skeletons was complete, though articulated limbs and body segments were found. While all body parts are represented, feet, hands and other smaller elements are relatively rare. Long bones, skulls, and other large and distinct elements are most plentiful. Skeletal parts of distinct individuals were jumbled together in the pile.

There are no traces of artificial or intentional disarticulation or de-fleshing, indicating that disarticulation resulted from the natural processes of skeletonization, in which decomposition of flesh, muscle and connective tissue releases bone joints. Light damage from carnivore and rodent gnawing indicates that some disturbance was also effected through scavenging.

The overall state of disarticulation, loss of some elements, and mingling of individuals would have occurred when already-decaying skeletons were moved, indicating that these are secondary deposits of human bones. Variable weathering and only light scavenging damage suggest that bodies may have been given shallow or incomplete burial, but were also somewhat exposed to the elements. The rather homogeneous stages of partial – but incomplete – disarticulation of all of the skeletal material indicates that the passage of time between death and reburial in MTW was similar for all individuals; they may have died from within a few days to within a few months of each other.²⁶ It is difficult to estimate the time after which these individuals were removed from their primary positions, but it was probably after a few weeks or months.

Animal bones were placed over the entire grave, directly on the human remains. While a negligible number of individual bones of pig, equid and dog were recovered, the vast majority are identified as sheep, goat, and cattle. Remains from at least 25 cattle and 100 sheep and goat were recovered from the area excavated, though we estimate that up to three times that amount were butchered and buried in the full extent of the grave. Whole, mostly disarticulated, skeletons were deposited, largely as joints of meat. Butchery evidence is abundant and consistent

across the remains, and indicates that the animals were butchered for similar purpose. Carcass joints were intentionally disarticulated, long bones were smashed at their mid-points, and there is evidence for marrow utilization. Skulls, too, were removed from the carcass and smashed. Heavy burning is found on articular ends and extremities that, together with lack of evidence for removal of meat from bones, indicate meat-on-the-bone was cooked over an open fire. The mortuary profile (ages-at-death) indicates that these animals were intentionally slaughtered, probably in a single event, over the course of one to a few days.

The event for which they were slaughtered and butchered was likely a feast.²⁷ The species present (sheep, goat and cattle), their large numbers, deposit of whole animals, butchery practices identified, roasting over an open flame, and primary deposition and immediate burial of the remains matches the ‘feasting signature’ identified from contemporary levels in Area TW (Section 1.1). Additionally, the ceramics deposited over the mass grave were dominated by lightly-used large, shallow plates and fine-ware bowls that might have been used in communal feasting.

The evidence found here indicates that the human bones were collected from elsewhere and re-deposited. Unlike their human counterparts, MTW marks the primary discard point for the animal bones, presumably immediately after feasting activity.

While the human and animal remains were created separately, they were introduced into the mass pile in MTW nearly simultaneously and then immediately buried; the animal bones bear no traces of scavenging or weathering.

1.2.2 Area EM

Area EM is located roughly ten meters northeast of area MTW. This area contained a second, massive pile of skeletal material of humans and animals, as well as other rubbish (figure 4). This pile measured ca. seven meters long by one meter wide. It was also created ca. 3800 BC, slightly later than the one in MTW, but perhaps by less than ten years.²⁸

Bones from at least 89 individuals were recovered from the pile. As in MTW, ages-at-death of the individuals covered a broad range, only excluding infants and senescent individuals; the majority were young adults.

The human remains in this pile showed a heavier degree of disturbance and manipulation than did those in MTW’s mass grave. Disarticulation was more nearly complete, save some vertebral elements, and only a subset of bones from entire

23 Ibid.

24 Ibid.: 207–209.

25 Ibid.: 208–209.

26 Ibid.: 207.

27 Ibid.: 211.

28 Ibid.: 212.

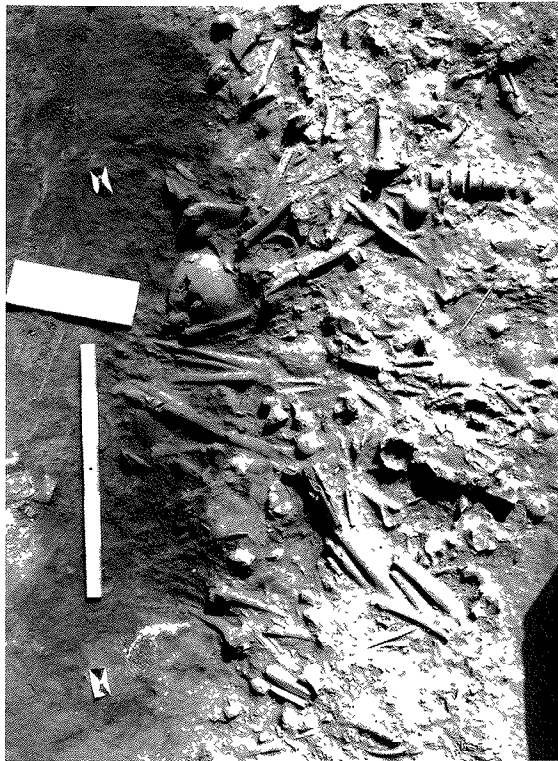


Figure 4: Mass grave in Area EM.

skeletons were recovered. Skulls and the large, long-bones of the limbs were the most common elements recovered, and almost none of the smaller bones from the extremities were found. It is not likely that these smaller elements were lost in excavation, but rather the pattern suggests curation. In other words, specific elements were selected and removed from elsewhere, and re-deposited in the EM pile. This is further indicated at the top of the pile, where multiple long-bone elements were deposited in parallel orientation as though gathered together, transported, and re-deposited.²⁹ A single pile of bones nearby EM (in Area EMS) may be further proof of such movement. There, human skulls and long bones, as well as large-sized animal bones were found in a pile that appeared to be the artifact of a bag or basket of bones.³⁰

Individual bones in EM also showed a greater degree of manipulation than found elsewhere. At least 42 of the human long-bones had been shaped – possibly into implements. Abrasions were found on skulls, and many bones had ‘polish’. Bone polish arises when bones are handled directly – without intervening meat and sinew. The polish, as well as the applied techniques for bone shaping and evidence for mechanical reactions of the bones to repeated episodes of humidity, suggest that the bone

shaping occurred several years after the death of the individuals, after the bones had dried and become de-fleshed.³¹

Animal bones were recovered, but in much smaller number than in Area EM. Sheep, goat, and cattle bones were those most frequently identified. Like the human bones, these were quite fragmented. Long-bone shafts, ribs and vertebral fragments predominated, making it possible that these were not recognized as animal bones and were buried as ‘human’ bones.

As the bone elements found in EM compose a subset of the types found in MTW, and as a greater degree of manipulation is evident among the EM material, it is possible that this deposit represents a tertiary deposit, removed from a deposit such as the mass grave found in MTW.

1.2.3 Area EME-3

A pile of human and animal bones was discovered near the center of the tell in a deep sounding that dates to ca. 3700 BC.³² The exposed area was small, capturing an unknown proportion of the bone pile. Here, human skulls and long-bones were found together with animal mandibles (jaws) – but few other elements. Bones from at least 14 humans were recovered; this material has not been fully analyzed.

1.2.4 Area EME-1

Another ‘mass grave’ was identified in Area EME-1, at the eastern edge of the current mound, which marks the latest mortuary activity ca. 3600 BC. Materials from this area are still being examined, but it clearly differs in character from the piles in MTW, EM, and the deep-sounding in EME-3, which present secondary deposits of human skeletons. In EME-1, whole, articulated skeletons were laid out; 35 individuals have been recovered. The skeletons were rather carelessly arrayed, and they were buried under a shallow layer of dirt. Some human bones have tooth marks from large, prey animals like lions and dogs, but the skeletons were only lightly disturbed and thus scavenging was minimal. The light covering of dirt, as well as the carnivore damage to bones, suggest that the corpses were practically exposed.

The only other material found with the skeletons is animal bone; in nearly each case, at least one mandible of a sheep or goat was buried with the human corpse.

²⁹ Ibid.

³⁰ McMahon – Oates 2007: fig. 5, mislabeled.

³¹ McMahon – Soltysiak – Weber 2011: 213.

³² Ibid.: 206.

2 Death and mortuary ritual

Episodic, mass burials of human remains at Tell Majnuna encompass primary, secondary, and, possibly, tertiary deposits spanning ca. 200 years. The character of the human bones is internally consistent within deposits, but varies in taphonomic state between deposits; they range from primary placement and (mostly) articulated in Area EME, to secondary placement and disarticulated in Area MTW, to secondary or tertiary placement and more-completely fragmented in Area EM. As a whole, these episodes and types of mass burials are linked by their demography: both sexes are present in a broad range of ages skewed slightly toward young adults. They are further linked by transformational mortuary processes. Death always involves a process of transformation having both biological and social components. Biological components are the physical foundations of the body and its physiological systems, which have a finite life span. The social components of death are the ways in which the physical body is perceived and the dead individual is tied into the larger community. In this case, the patterned, biological sequence of decomposition and decay results in the cultural processes of corpse dehumanization, skeletal manipulation, and severance from the social life of the community.

2.1 Biological death

The biological instant of death occurs when the last breath is taken and the body begins to break down, instituting a set of perceptible, continuous physical and chemical changes in the corpse. In terrestrial environments, these can be grouped into six generally recognized stages (assuming insects are present): fresh, bloat, active decay, advanced decay, dry, and remains.³³ The first perceptible changes occur in the 'fresh' stage, affecting the color and temperature of the skin, and the compliance of the limbs. This is followed by the 'bloat' stage: putrefaction and the accumulation of gases, perceptible by bloating of the corpse and the unmistakable (putrid) smell of death. The corpse is next in a state of 'active decay' in which the action of insects and rupturing gases enhance the visible decay of organs and flesh and the expulsion of liquids within the corpse; putrid odors remain strong. In 'advanced decay', the majority of decomposable material has already been lost and the odor lessens. The corpse becomes 'dry' and consists of bones covered only by dried skin and tendons, with little odor. When even the skin and tendons are decayed, the corpse is fully skeletonized remains. When the skin and tendons are gone, the

bones may become disarticulated, especially if disturbed. This may happen at any joint that is 'freed', not only after complete skeletonization. The speed with which these stages are reached and completed varies greatly with burial environment, particularly temperature and humidity, burial depth, inclusions and coverings, soil type, and corpse mass.³⁴ Regardless of burial environment or speed of decay, the corpse moves sequentially from fresh death, through putrefaction and the greatest odors, to dry remains.

From this, we can reconstruct the events, pace and rough timing that led to each, distinct deposit.

Level One marks the least time passed between death and deposition; this is the initial burial and exposure of the human corpse. Corpses in EME-1 (see above) were interred whole, while still covered with flesh, relatively soon after death. The corpses would have shown changes in color, temperature, and compliance (lividity), and would have only just begun to smell when placed in the ground. This probably occurred within days of death.

Level Two marks activity that occurred after a longer duration between death and deposit; decomposition and secondary deposit or burial. The recovered bones found in Area MTW (see above) are but a subset of those found in primary burials. The degree of partial disarticulation of the skeletons, and the particular bones lost in transit indicate that the skeletons had undergone a period of advanced decay before being (re)moved. Odors would have been much diminished by this time, though the remnants of decomposable materials and 'wet' bones would leave a lingering scent. Advanced decay ends – and bones become 'dry' – ca. three weeks to six months after death, depending on environment. Burial of any kind slows decomposition relative to surface exposure, but a shallow burial open to insect colonies promotes decay.³⁵ Depending on the season of the year, the passage of time between death and re-burial in MTW would have been within a few weeks or months.³⁶

Level Three refers to activity that occurred well after death; corpse movement and mechanical manipulation of human bones. The skeletal material found in Area EM (see above) is an even smaller subset of the whole of the human corpse than was recovered from Area MTW. Their degree of disarticulation indicates more interference and disturbance from a primary burial state. That a longer passage of time

34 Carter – Yellowlees – Tibbett 2007: 14; Weitzel 2005; Mann – Bass – Meadows 1990; Galloway *et al.* 1989; Spennemann – Franke 1995.

35 Weitzel 2005.

36 McMahon – Soltysiak – Weber 2011: 207.

33 Payne 1965; see also adaptations of Galloway *et al.* 1989.

occurred between death and deposit here than in MTW is clearly indicated by the specific mechanical-alterations effected during bone-shaping. These suggest that the skeletons had become dry remains with essentially no odor. It is difficult to judge how long this would take given possible, earlier burial of the bones, but it may have occurred after one or more years.³⁷

2.2 Social rituals of death

As outlined above, the mass graves at Tell Majnuna document treatment of the physical remains of the human corpses buried there in primary, secondary, and, possibly, tertiary interments. The mass-grave episodes are notable for the degree of destruction corpses experienced, the long duration (possibly several years) over which at least some skeletons and bones continued to be manipulated, and the collective disposal of so many individuals on a rubbish heap; that is, these are striking for the social rituals that accompanied biological decay.

An individual's social life is constituted by ascribed and inherited statuses, relationships of kinship, economy, patrimony and polity. Death provokes transitions in these relationships; Such situations in which individuals undergo structured shifts in their identity, status, or role (e.g. rites of passage) are often bound in ritual;³⁸ which functions to express communally shared (or desired) social values and attitudes.³⁹ These structured behaviors are grounded in socially-specific views about death and the relationships between the living and the dead.⁴⁰ In this role of explaining and expressing social relationships, mortuary ritual contains the tools to maintain, invent, or obliterate ancestry and patrimony. Specific ideas and ideals about death are manifest in the treatment of the corpse and in the placement of the body or bones, while relationships and memories can be created, manipulated, and obliterated through the placement of the dead.⁴¹ At Tell Majnuna, corpse manipulation and placement suggest that the dead individuals in the mass graves discussed here became progressively less-human and increasingly removed from social life. This was completed through a ritual for social death, after which time the bones could be further destroyed, disposed and forgotten.

The mass graves in MTW, EM, EME-1 and EME-3 are, so far, singular examples documenting

varying levels of time between death and deposit, and degrees of skeletal manipulation; they cannot currently be equated to sequential stages of mortuary process. However, there are reasons to suggest that these isolated mass-graves do demonstrate related mortuary actions of separation, desecration, and discard directed toward certain dead, perhaps individuals of a common group or sharing circumstances of death. Connecting the mass graves as part of a mortuary pattern are their placement at Majnuna, the large number of people buried simultaneously (or nearly so), a demographic skewed toward young adults. In addition, the resulting bone assemblages show a pattern that would be explained through skeletal disarticulation and bone loss via successive stages of primary, secondary, and tertiary interment.

After biological death, the dead became ever-less human through decomposition, as after which many individual skeletons and their identities were systematically destroyed. The greatest care of these bodies was taken initially in the first level of mortuary process when the corpses retained their most-human aspect: fresh corpses were separated from the living community and were laid out in individual burial. While in the ground, these corpses underwent their greatest degree of transformation from that human aspect through the process of decomposition. Shallow burial – near exposure – hastened the process of decay by encouraging the activity of scavengers, insects, and environmental taphonomy. This transformational period contains the corpses' greatest degree of odor. The corpses were not manipulated while undergoing these major alterations in appearance and scent. Where skeletons were disturbed, moved and reburied, evidence indicates that such activity occurred following the period of active decomposition. Evidence from the bodies in MTW and in EM suggests that they may also have been similarly interred to the bodies in EME-3, but this cannot be proven. Regardless, their reburial occurred after transformation from fresh, human corpses to ones devoid of flesh and with exposed bones, tendons, and sinew.

When we next have evidence for the handling of the bodies, it is at a time when the corpse had thus transformed from a fleshed *individual* into a skinless, hairless, skeleton. The corpse would have an odor, but one much diminished from the stage of active decay. As bodies lost their human aspect of shape and odor, so too did they lose their identities as individuals. Bodies and parts of bodies were collected without regard for individual skeletons, or even retention of complete bodies. In this haphazard collection and transit, bones were lost and individual body parts were mixed and mingled with the bones of many other skeletons – likely the case in both MTW and EM. Systematic dumping of loads of body

37 Ibid.: 213.

38 Van Gennep 1960.

39 E.g. Durkheim 1965; Turner 1969; Lienard – Boyer 2006.

40 E.g. Hertz 1960; Metcalf – Huntington 1991.

41 Carr 1995; Hertz 1960; van Gennep 1960; Bloch 1982; Ben Amos 1991; Porter 2002; Parker Pearson 1982: 110; McNary 1995; Kertzer 1983; Cannon 2002.

parts contributed to the fragmentation and mingling of skeletons. In MTW, the humanness and individual identity of the skeletons and bones was further destroyed and desecrated by burial beneath hundreds of rotting carcasses that remained from communal feasting that occurred at this time. Burial beneath the animal carcasses effectively reintroduced the smell of decomposition to the human remains.

More transformation took place in the ground as the human and animal bones continued to decompose together, becoming dry remains. At this point, the human (and animal) bones would bear no skin or flesh, and all body parts would be disarticulated. The human aspect of the skeletons and their individual identities would be completely obliterated and, as the final meat and sinew rotted from the animal bones, they became further commingled with the human bones. This activity marked the final act of desecration for the bones recovered from the mass grave of MTW.

The bones found in EM were more completely fragmented than those in any other mass grave, and had been revisited over a longer period of time. Still, they were manipulated only *after* periods of active decay, following cessation of putrescence. In a time *after* the bones were just dry remains and all individuality was gone from the skeletons, skulls and long bones were gathered and intentionally destroyed through manipulation, cutting, and shaping. We cannot be certain that these bones are from individuals previously exposed as in EME-3, or from a larger mass-grave like that in MTW. However, the state of disarticulation and fragmentation of these bones, as well as the limited range of elements recovered here, does indicate that these bones could have been removed from a deposit similar to that in MTW. The mixing of human bones with animal bones – though slight – does indicate that the human bones were gathered from a place in which animal bones were also placed, and those animals are of the same species as found in the feasting debris: sheep, goat, and cattle. It is of note that the most clearly ‘human’ of the bones were the ones gathered and defiled. This marked the final destruction of the human dead; their fragmented bones were simply discarded and abandoned as rubbish.

The dead were interred, destroyed, and abandoned in the mortuary landscape of Tell Majnuna. Following the final discard of the bones, there is no indication of re-visitation or commemoration, nor were any physical features demarking the space identified. However, while Tell Majnuna functioned as a destination for these dead, it also functioned as a destination for refuse; as a feature on the landscape, it was a rubbish pile. Thus the burial landscape of those groups of people, rather than forging a commemorative structure for veneration, was commingled with the practice of discard and disposal.

3 Secondary burial: Enacting social death through decomposition

As outlined above, ‘disposal’ of the bodies in the mass graves at Majnuna did not occur immediately, but after ‘destruction’. Destruction of the bodies occurred through both natural and artificial means. But, cultural manipulation and destruction only occurred after the biological transformation of the human corpse from a fleshed individual to a loose skeleton. Disposal occurred after the loss of humanness and distinct identity, and following the anonymity of mass secondary burial. In this case, ‘secondary burial’ refers both to the act of reburying bodies in a secondary location, but also the additional burial of transforming materials. Similarities in unusual discard activity in contemporary levels at Tell Majnuna and Area TW suggest that abandonment of the dead was accomplished through employment of social ritual; abandonment occurred following feasting, *utilizing* the feasting remains. At Majnuna, the feasting remains covered reburied human bones that were then desecrated, thrown away, and abandoned. In Area TW, the feasting remains covered living floors that were no longer to be used, and which were abandoned and then built over. In both areas, rotting animal-bone remains from feasting were used to cover entities that were no longer in social circulation; they were used to enact social death.

People, places and material goods all have social lives whose currency remains as long as those items are in circulation.⁴² Death, without subsequent commemoration, removes people and goods from circulation, effectively ending their social lives. While biological death has a natural process of physical decomposition, social death does not. Ritual for social death must be created, and here it is borrowed from the process of biological death in which the odor of decomposition marked the transformation of a corpse from living to dead. The time during which the human corpses were actively decaying and producing putrid chemicals and odors marked a period of separation from the living in which they were not manipulated or disturbed. Following that period, the corpses no longer had the identity of living humans and had changed status – maybe to that of an anonymous group of dead – but one without the attributes of living, biological beings. But, perhaps an additional ‘death’ was required in order to remove a remaining social identity. Like biological death and its period of transformation, social ‘death’ would also require separation and transformation. Odor marked the biological transformation, and was recreated to mark social transformation.

42 Appadurai 1986; Kopytoff 1986.

Odor was able to be used in this way because of its ability to generate emotional memory.⁴³ Odor perception and discrimination are learned through active phenomena and experience, much more so than are verbal and visual stimuli.⁴⁴ As a result of their phenomenological grounding, odor memory is heavily conditioned by cultural and social cues -- in this case biological death. The putrid gases that accompany decomposition are among the most universally recognized and reviled of odors, and its presence or absence is used by many cultures as a means to mark transformational stages from life to death.⁴⁵ As such, decomposition forms part of the grammar of death rituals. Re-creation of that odor builds upon the particular emotional and cultural associations of the smell of decomposition and correlation to death.

The use of feasting debris as a means for decomposition undoubtedly builds upon the social information and conditioning provided by the feast, itself.⁴⁶ However, cultural transformation of the flesh and bones of the animals through cooking likely introduced an important distinction between biological and social death. The odor of decomposition would have been present, but noticeably different from a decaying, human corpse. Nonetheless, mortuary ritual involved the recursive use of odor; the smell of human decomposition marked the process of biological death, while the smell of decomposition from rotting, cooked meat marked the process of social death.

4 Conclusions: Social death and urban growth

The mortuary rituals indicated by the physical remains from Tell Majnuna place the process within the larger genre of secondary burial practices. These are performed by cultures that believe death is not instantaneous, but is part of a process in which the corpse is transformed from a fleshed individual to a 'clean' skeleton.⁴⁷ In these, 'destruction' of the corpse may be a necessary step in the transformation of the identity of the dead.⁴⁸ Secondary burial rituals are often part of larger community rituals to effect communal scale memory and ancestry.⁴⁹ The mortuary rituals at Majnuna certainly were communal in scale and location; they involved several thousands of living people and were conducted in a public area of the settlement. In such context, destruction

and desecration of the dead may also be a means to promote communal identity over individuality.⁵⁰ However, skeletal destruction at Majnuna differs from observed practices elsewhere in which the 'destroyed' bodies are either selectively or wholly curated, cached, or otherwise revered.⁵¹ At Majnuna, the bodies are simply destroyed; there is no remaining identity or identifier. Instead of conducting mortuary ritual as a means to promote memory and consolidate ancestry, it was conducted to obliterate individual identity and transform the bodies into rubbish, which was then abandoned. I argue that feasting was the final act of social obligation before some individuals could be removed from the social fabric of society.

At Tell Brak, we do not know how prevalent was this type of mortuary ritual. Evidence for burials contemporary to Brak's period of expansion are largely limited to intramural, infant burials.⁵² The proliferation of single, errant, adult, human bones in fills throughout the TW sequence suggests that more burials remain to be found from this -- and other -- periods. The demography of the dead in Majnuna's mass graves is broad, but lacks infants and the very aged. There are also greater-than-expected numbers of young adults. In general, this represents only a sub-set of a living population -- and not one that generally has high mortality; these deaths were not the result of an epidemic or natural catastrophe. The presence of infant burials elsewhere and the complete lack of aged adults indicate that there were multiple types of burial ritual, possibly based upon social status and identity and/or method of death; there may well have been other individuals whose memory and status were promoted rather than obliterated. The feasting debris in MTW, alone, could have fed tens of thousands of people, raising the possibility that living and dead individuals from locales outside of the Brak vicinity participated in feasting and secondary burial; their more tenuous relationship to the Brak community could help to explain their 'abandonment'. However, the select age-group of the dead argues against that scenario. The large numbers of people of select age simultaneously interred in these mass graves at Tell Majnuna raises the possibility that large-scale death occurred through unnatural means such as warfare.⁵³ 'Forget-

43 Herz 1998; Herz -- Englen 1996; Larsson -- Willander 2009.

44 Wilson -- Stevenson 2003.

45 E.g. Hertz 1960; Bloch 1982; Crocker 1985: 117; Goodale 1985: 239.

46 Dietler 2001; Hayden 2001.

47 Hertz 1960; Barley 1981; Metcalf -- Huntington 1991.

48 Hertz 1960: 46.

49 Ibid.; Metcalf -- Huntington 1991.

50 Reina 1962; Talalay 2004.

51 Hertz 1960; Chesson 1999; Moore -- Hillman -- Legge 2000: 280; Caiuby Novaes 2006; Kuijt 2008, and references therein. A possible exception is Domuztepe, in southeastern Turkey, where fragmented and manipulated human remains were buried with probable feasting remains in a large pit dated to ca. 5600 BC (Carter -- Campbell -- Gauld 2003; Kansa -- Campbell 2002).

52 Oates -- Oates 1997: 290; Felli 2003: 56, 66; McMahon -- Oates 2007: 10--11.

53 E.g. McMahon -- Soltysiak -- Weber 2011.

ting' may have been occasioned if these individuals were unwanted enemy combatants, or 'dangerous' individuals selectively killed for an unknown reason. It is possible, too, that the dead in the mass graves had social identities and relationships of import.

Selection also occurred in determining the spaces that would undergo rituals of social death; to date, *only* individual floors in the monumental building in Area TW has such evidence. The selection of this building seems to indicate that the restructuring or forgetting of social identity and status was associated with spaces in which significant social, political, or economic activities occurred.

The strongest link between rituals of social death for people and places is temporal. This evidence for feasting and consequent desecration through burial under rotting rubbish is temporally limited to the first several centuries of the fourth millennium, during the period of urban growth and settlement re-organization. The placement of the dead on the newly occupied landscape of Tell Majnuna removes the dead from the memory of the ancestral community, and instead ties the dead discarded there to the expansion and growth of the settlement. Enacting 'social death' of people and places during this time of expansion may have been a vital method for dealing with land and resource scarcity, and the commingling of newly settled peoples with few or no social ties, and an evolving political, economic, and social landscape. By transforming social identity through death, onerous social obligations could be forgiven, and new relationships forged. Ancestral ties to land or buildings could be forgotten in order that spaces could be re-used, re-purposed, and re-built. In the case of buildings and spaces, social death rituals may enable the same forgetting and forgiveness of activities, events, relationships, obligations, and persons associated with that space.

I suggest that at Tell Brak, in an era when space was at a premium and innovations and experimentation abounded in the adaptive use and reuse of space, people and places could be stripped of their significance and severed from the community through a cultural, ritual process that culminated in social death. Scent was instrumental in this process as the biological death of the individual was marked by its production and then loss of the scent of decomposition, so too must the death of the social individual be marked by the same phenomenon. The ritual for social death was a recursive aspect of the entire mortuary ritual, utilizing the association of decomposition with death. By using cultural means to recreate death, the ritual process could be applied to spaces and objects, as well.

References

- Appadurai, A. 1986
Introduction: Commodities and the Politics of Value, in: A. Appadurai (ed.), *The Social Life of Things*, Cambridge, 3–63.
- Barley, N. 1981
The Dowayo Dance of Death, in: S. Humphreys – H. King (eds.), *Mortality and Immortality*, London, 149–160.
- Ben Amos, A. 1991
The Sacred Center of Power: Paris and Republican State Funerals, *Journal of Interdisciplinary History* 22, 27–48.
- Bloch, M. 1982
Placing the Dead: Tombs, Ancestral Villages and Kinship Organization in Madagascar, *Prospect Heights* (Ill.).
- Caiuby Novaes, S. 2006
Bororo Funerals: Images of the Refacement of the World, Tipit'i, *Journal of the Society for the Anthropology of Lowland South America* 4, 177–198, <<http://digitalcommons.trinity.edu/tipiti/vol4/iss1/9>> (last accessed 10.4.2012).
- Cannon A. 2002
Spatial Narratives of Death, Memory, and Transcendence, *Archeological Papers of the American Anthropological Association* 11, 191–199.
- Carr, C. 1995
Mortuary Practices: Their Social, Philosophical-Religious, Circumstantial, and Physical Determinants, *JAMT* 2, 105–200.
- Carter, D.O. – Yellowlees, D. – Tibbett, M. 2007
Cadaver Decomposition in Terrestrial Ecosystems, *Naturwissenschaften* 94, 12–24.
- Carter, E. – Campbell, S. – Gauld, S. 2003
Elusive Complexity: New Data from Late Halaf Domuztepe in South Central Turkey, *Paléorient* 29, 117–133.
- Charles, M. – Hald, M.M. – Weber, J. – Wright, H.T. 2001
The Forecourt of the Niche Building (Tell Brak TW Level 18): Preliminary Note on an Interdisciplinary Study, *Iraq* 63, 25–31.
- Chesson, M.S. 1999
Libraries of the Dead: Early Bronze Age Charnel Houses and Social Identity at Urban Bab edh-Dhra', Jordan, *Journal of Anthropological Archaeology* 18, 137–164.

- Colledge, S. 2004
Plants and People, in: R. Matthews (ed.), *Excavations at Tell Brak 4: Exploring an Upper Mesopotamian Regional Centre, 1994–1996*, London/Cambridge, 389–416.
- Crocker, J.C. 1985
Vital Souls: Bororo Cosmology, Natural Symbolism, and Shamanism, Tucson (Ariz.).
- Dietler, M. 2001
Theorizing the Feast: Rituals of Consumption, Commensal Politics, and Power in African Contexts, in: M. Dietler – B. Hayden (eds.), *Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, Washington/London, 65–114.
- Durkheim, É. 1965
The Elementary Forms of the Religious Life, New York.
- Emberling, G. – McDonald, H. 2001
Excavations at Tell Brak 2000: Preliminary Report, *Iraq* 63, 21–54.
- Emberling, G. – McDonald, H. 2002
Recent Finds from the Northern Mesopotamian City of Tell Brak, *Antiquity* 76, 949–950.
- Emberling, G. – McDonald, H. 2003
Excavations at Tell Brak 2001–2002: Preliminary Report, *Iraq* 65, 1–75.
- Felli, C. 2003
Developing Complexity, Early to Mid Fourth-Millennium Investigations: The Northern Middle Uruk Period, in: R. Matthews (ed.), *Excavations at Tell Brak 4: Exploring an Upper Mesopotamian Regional Centre, 1994–1996*, London/Cambridge, 53–95.
- Galloway, A. – Birkby, W.H. – Jones, A.M. – Henry, T.E. – Parks, B.O. 1989
Decay Rates of Human Remains in an Arid Environment, *Journal of Forensic Sciences* 34, 607–616.
- Goodale, J.C. 1985
Pig's Teeth and Skull Cycles: Both Sides of the Face of Humanity, *American Ethnologist* 12, 228–244.
- Hayden, B. 2001
Fabulous Feasts: A Prolegomenon to the Importance of Feasting, in: M. Dietler – B. Hayden (eds.), *Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, Washington/London, 23–64.
- Hertz, R. 1960
A Contribution to the Study of the Collective Representation of Death: Death and the Right Hand, Aberdeen.
- Herz, R.S. 1998
Are Odors the Best Cues to Memory? A Cross-Modal Comparison of Associative Memory Stimuli, *Annals of the New York Academy Sciences* 855, 670–674.
- Herz, R.S. – Engen, T. 1996
Odor Memory: Review and Analysis, *Psychonomic Bulletin and Review* 3, 300–313.
- Kansa, S.W. – Campbell, S. 2002
Feasting With the Dead? A Ritual Bone Deposit at Domuztepe, South Eastern Turkey (c. 5550 cal BC), in: S.J. O'Day – W. van Neer – A. Ervynck (eds.), *International Council of Archaeozoology: Behaviour Behind Bones. The Zooarchaeology of Ritual, Religion, Status and Identity*, Durham, 2–13.
- Kaplan, H. – Hill, K. 1985
Food Sharing among Ache Foragers: Tests of Explanatory Hypotheses, *CurrAnthr* 26, 223–246.
- Kertzer, D. 1983
The Role of Ritual in Political Change, in: M. Aronoff (ed.), *Culture and Political Change*, New Brunswick, 53–73.
- Kopytoff, I. 1986
The Cultural Biography of Things: Commoditization as Process, in: A. Appadurai (ed.), *The Social Life of Things*, Cambridge, 64–91.
- Kuijt, I. 2008
The Regeneration of Life: Neolithic Structures of Symbolic Remembering and Forgetting, *CurrAnthr* 49, 171–197.
- Larsson, M. – Willander, J. 2009
Autobiographical Odor Memory, *Annals of the New York Academy of Sciences* 1170, 318–323.
- Lienard P. – Boyer P. 2006
Whence Collective Rituals? A Cultural Selection Model of Ritualized Behavior, *American Anthropologist* 108, 814–827.
- Mann, R.W. – Bass, W.M. – Meadows, L. 1990
Time Since Death and Decomposition of the Human Body: Variables and Observations in Case and Experimental Field Studies, *Journal of Forensic Sciences* 35, 103–111.

- Matthews, R. 1996
Excavations at Tell Brak, Iraq 58, 65–77.
- McAnany, P. 1995
Living with the Ancestors: Kinship and Kingship in Ancient Maya Society, Austin (Tex.).
- McMahon, A. 2009
The Lion, the King and the Cage: Late Chalcolithic Iconography and Ideology, Iraq 71, 115–124.
- McMahon, A. – Sołtysiak, A. – Weber, J. 2011
Late Chalcolithic Mass Graves at Tell Brak, Syria, and Violent Conflict during the Growth of Early City-States, *Journal of Field Archaeology* 36, 201–220.
- McMahon, A. – Oates, J. 2007
Excavations at Tell Brak, 2006 and 2007, Iraq 69, 145–171.
- Metcalf, P. – Huntington, R. 1991
Celebrations of Death: The Anthropology of Mortuary Ritual, Cambridge.
- Moore, A.M.T. – Hillman, G.C. – Legge, A.J. 2000
Village on the Euphrates: From Foraging to Farming at Abu Hureya, Oxford.
- Oates, D. – Oates, J. 1993
Excavations at Tell Brak 1992–1993, Iraq 55, 155–200.
- Oates, D. – Oates, J. 1997
An Open Gate: Cities of the Fourth Millennium BC (Tell Brak 1997), CAJ 7, 287–297.
- Oates D. – Oates J. – McDonald H. 2001
Excavations at Tell Brak Vol. 2: Nagar in the Third Millennium BC, London/Cambridge.
- Oates, J. – McMahon, A. – Karsgaard, P. – al-Quntar, S. – Ur, J. 2007
Early Mesopotamian Urbanism: A New View from the North, *Antiquity* 81, 585–600.
- Ochsenchlagel, E.L. 1993
Sheep: Ethnoarchaeology at Al-Hiba, in: J.N. Postgate – M.A. Powell (eds.), *Domestic Animals of Mesopotamia Part I*, *Bulletin of Sumerian Agriculture* 7, Cambridge, 33–42.
- Parker Pearson, M. 1982
Mortuary Practices, Society, and Ideology: An Ethnoarchaeological Study, in: I. Hodder (ed.), *Symbolic and Structural Archaeology*, Cambridge, 99–113.
- Payne, J.A. 1965
A Summer Carrion Study of the Baby Pig *Sus scrofa* Linnaeus, *Ecology* 46, 592–602.
- Porter, A. 2002
The Dynamics of Death: Ancestors, Pastoralism, and the Origins of a Third-Millennium City in Syria, *BASOR* 325, 1–36.
- Rabin, M.D. – Cain, W.S. 1984
Odor Recognition: Familiarity, Identifiability, and Encoding Consistency, *Journal of Experimental Psychology: Learning, Memory, and Cognition* 10, 316–332.
- Rainville, L. 2003
Results from Micro-Archaeology, Iraq 65, 63–72.
- Reina, R.E. 1962
The Ritual of the Skull in Peten, Guatemala, *Expedition* 4, 26–35.
- Skuldboel, T.B.B. 2009
Earliest Urbanism in Northern Mesopotamia, PhD-Thesis, University of Copenhagen, Copenhagen.
- Spennemann, D.H.R. – Franke, B. 1995
Decomposition of Buried Human Bodies and Associated Death Scene Materials on Coral Atolls in the Tropical Pacific, *Journal of Forensic Sciences* 40, 356–367.
- Talalay, L.E. 2004
Heady Business: Skulls, Heads, and Decapitation in Neolithic Anatolia and Greece, *JMA* 17, 139–163.
- Turner, V. 1969
The Ritual Process: Structure and Anti-Structure, New York.
- Ur, J. – Karsgaard, P. – Oates, J. 2007
Early Urban Development in the Near East, *Science* 317, 1188.
- van Gennep, A. 1960
The Rites of Passage, Chicago (Ill.).
- Weber, J. A. forthc.
Patterns of Animal Production and Harvesting, and Communal Consumption Activities in the Fourth and Late-Fifth Millennia BC at Tell Brak, in: J. Oates (ed.), *Excavations at Tell Brak Vol. 3: Early Urbanism and Prehistory*, Cambridge/London.
- Weber, J. A. in press
Exotic Animal Consumption at Tell Brak in the Mid Fourth Millennium BC, in: A. McMahon – H. Crawford (eds.), *Preludes to Urbanism, Studies in the Late Chalcolithic of Mesopotamia in Honour of Joan Oates*, Cambridge.

Weitzel, M. 2005

A Report of Decomposition Rates of a Special Burial Type in Edmonton: Alberta from an Experimental Field Study, *Journal of Forensic Sciences* 50, 641–647.

Wilson, D.A. — Stevenson, R.J. 2003

The Fundamental Role of Memory in Olfactory

Perception, *Trends in Neurosciences* 26, 243–247.

Wright, J.C. 2004

A Survey of Evidence for Feasting in Mycenaean Society, in: J.C. Wright (ed.), *The Mycenaean Feast*, Princeton (N.J.), 13–58.