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Olivia Munoz. Promoting group identity and equality by merging the Dead: increasing complexity in mortuary practices from Late Neolithic to Early Bronze Age in the Oman Peninsula and its social implications. Williams, K.D.; Gregoricka, L.A. Mortuary and bioarchaeological perspectives on Bronze Age Arabia, University of Florida Press, pp.21-40, 2019, Series: Bioarchaeological interpretation of the human past: local, regional and global perspectives, 978-1-68340-079-0. hal-02359531

**HAL Id: hal-02359531**

**<https://hal.science/hal-02359531v1>**

Submitted on 12 Nov 2019

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## **Promoting group identity and equality by merging the Dead : increasing complexity in mortuary practices from Late Neolithic to Early Bronze Age in the Oman Peninsula and its social implications**

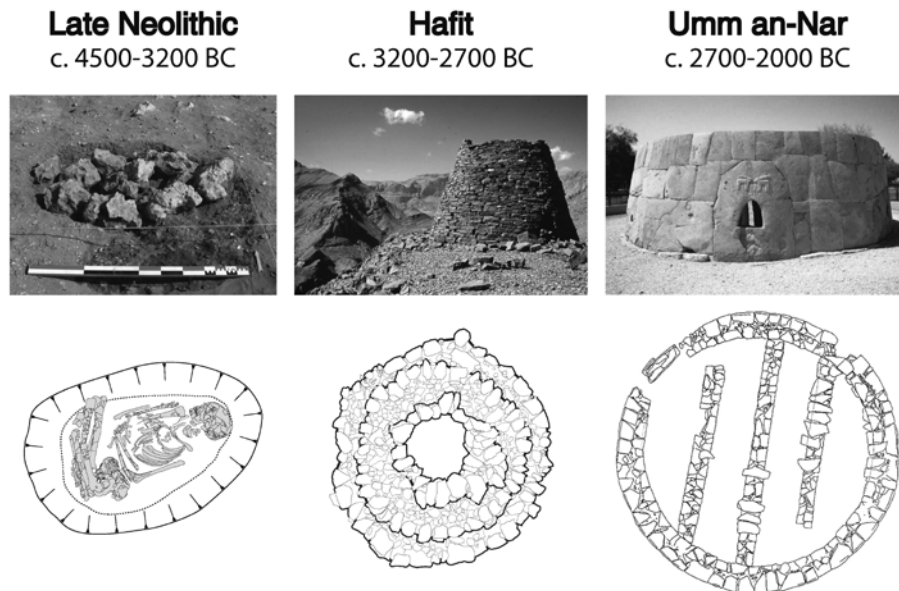
**Olivia Munoz**

Archaeological investigations in the Oman Peninsula conducted over the last forty years have highlighted dramatic socioeconomic transformations characterizing the transition from the Late Neolithic (fifth -fourth millennia BC) to the Early Bronze Age (3200-2000 BC) (CLEUZIQU and TOSI 2007). The distribution of natural resources is thought to have favored a subsistence economy based on seasonal mobility; during the Late Neolithic, communities engaged in herding, fishing, hunting, and gathering (TOSI 1975). However, on some coastal settlements from the shores of the Arabian Sea, close to wadi mouths, mangroves, or lagoons (BERGER et al. 2013; BIAGI 2004), the combination of a diversity of available terrestrial foods and a wealth of maritime resources may have favored more sedentary occupations (BIAGI and NISBET 2006; ZAZZO et al. 2014). Substantial pluristratified anthropogenic deposits characterized these coastal sites, and extensive excavations have revealed domestic structures consisting of circular huts and shelters made with perishable materials, sometimes associated with hearths, waste and storage pits, and activity areas (e.g., BIAGI 1999; CAVULLI 2004; CHARPENTIER 2003; GAULTIER et al. 2005; MARCUCCI et al. 2011, 2014).

Beginning around 3000 BC and during the whole of the third millennium, southeastern Arabia experienced dramatic changes in land use, population growth (MUNOZ 2014), and territorial expansion into the hinterland (BORTOLINI and MUNOZ, 2015). These transformations were accompanied by changes in subsistence strategies, with the development of date palm cultivation and agriculture in the piedmonts and valleys (CLEUZIQU and COSTANTINI 1980; MUNOZ 2017; TENGBERG 2012) and intensification of fishing on the coast (AZZARÀ 2012; CLEUZIQU and TOSI 2000). Moreover, numerous technical innovations and craft specializations appeared, including copper exploitation and metallurgy (WEEKS 2003; WEISGERBER 1980), pottery production (MÉRY 2000), softstone vessel production (DAVID 2002, 2011), mud bricks, and stone architecture (AZZARÀ 2009; CLEUZIQU 1989).

Archaeological evidence and textual sources both attest to the development of trade and the intensification and diversification of exchange networks at local, intraregional, and interregional scales (CLEUZIQU 1992; MÉRY and SCHNEIDER 1996; MÉRY 1998, 2000; POTTS 1993). Changes are also perceptible in settlement structure, particularly the development of permanent villages made of rectangular houses and monumental towers made of stone or mud brick (e.g. AZZARÀ 2009; CABLE and THORNTON 2012). Finally, important changes characterize mortuary practices during this time: burials shifted from mostly individual graves made in simple pits to collective, stone built, monumental, and highly visible tombs (BORTOLINI and MUNOZ, 2015) (*Fig. 1*). Although not contemporaneous (MUNOZ 2014), these processes all attest to an increasing social complexity during the third millennium BC on the Oman

Peninsula (CLEUZIYOU 2002a; CLEUZIYOU and TOSI 2007; ROUSE and WEEKS 2011), for which burial practices are a good indicator (CLEUZIYOU and MUNOZ 2007). This paper discusses how the modalities of Early Bronze Age collective tomb management may shed light on the funerary ideology of the groups living in the Oman Peninsula in relation with their social evolution.



**Figure 1** - Evolution of grave types from the Late Neolithic to the Early Bronze Age in the Oman Peninsula. Credits: O. Munoz (left top and bottom); S. Cleuziou (center top); O. Munoz (center bottom); Mission Archeologique Francaise a Abu Dhabi(right top and bottom).

## LATE NEOLITHIC MORTUARY PRACTICES

During the Late Neolithic, the dead were generally buried in simple pits dug into the sediment not far from the domestic and activities areas. Examples of such mortuary practices come from most known sites along the Omani coast: Ra's al-Hamra (RH-5, RH-6 and RH-10; MARCUCCI et al. 2014; MUNOZ 2014; SALVATORI 2007; SANTINI 1987), Wadi Shab (GAS-1; GAULTIER et al. 2005), Ra's al-Khabbah (KHB-1; MUNOZ et al. 2010) and Suwayh (SWY-1; CHARPENTIER et al. 2003; and see review in MUNOZ 2014). The dead were deposited in a flexed position and were sometimes accompanied by jewelry (e.g., shell pendants, necklaces, stone earrings), and more rarely, tools (e.g., fishing implements, bone or stone utensils) (*Fig. 1*). In several coastal Neolithic graveyards, faunal deposits were associated with the deceased and graves were ultimately covered by stones, gathered locally or from around the site (MUNOZ 2014). The cost of constructing the grave itself was minimal in most cases; a few hours' labor by one or two people was sufficient to dig the pit and cover the deceased with stones. Sometimes animals were deposited in the pit, however, which may have necessitated a greater investment in mortuary rituals. For example, at Ra's al-Hamra (RH5), some individuals were covered by numerous turtle heads, which could have been gathered and added to mortuary pits over time (e.g., MUNOZ 2014).

An extended Neolithic mortuary ritual is likewise suggested by the apparent manipulation of skeletons

after a certain period of decomposition. Manipulation of partially or totally defleshed bones is seen at al-Buhais 18 (KUTTERER 2010), Umm al-Quwain 2 (PHILLIPS 2002), Ra's al-Khabbah KHB-1 (MUNOZ 2014; MUNOZ et al. 2010), Ra's al-Hamra RH-4 (DURANTE and TOSI 1977), Ra's al-Hamra RH-5 (MUNOZ 2014; SALVATORI 2007), and Wadi Shab GAS-1 (GAULTIER et al. 2005).

Data derived from 444 Neolithic graves document a preponderance of primary, individual interments, but secondary and multiple burials were also recorded (e.g., see MUNOZ 2014). If one relates the number of individuals to the number of burial pits, a range from one to five individuals per grave has been reported, yielding an average of 1.7 individuals per pit structure.

## EARLY BRONZE AGE MORTUARY PRACTICES

From the end of the fourth millennium BC, tombs took the form of circular, above-ground, stone-built monuments, highly visible in the landscape, where several individuals were deposited through time. Two main types of Early Bronze Age tombs existed: earlier Hafit-type cairns (ca. 3100–3700 BC) and later Umm an-Nar tombs (ca. 2700–2000 BC), although some structural variability and gradual evolution can be observed through both types (BORTOLINI 2014; POTTS 2012; WILLIAMS and GREGORICKA 2013a).

### *Hafit-type cairns*

Hafit-type cairns were truncated cone- or igloo-shaped stone structures standing two to eight meters high and had diameters that ranged between three and six meters (*Fig. 1*). Several concentric layers of stone walls were built surrounding a single chamber accessed from only one entrance, giving the inner chamber a keyhole-like appearance when viewed from above. These entrances took on various shapes (e.g., triangular, trapezoidal, with or without a threshold and lintel). It is estimated that building a Hafit-type cairn would have required the labor of up to five individuals for one month, depending on tomb height and availability of materials (M. Bohme, personal communication, 2015). The stones were acquired locally from rocky outcrops and appear to have been worked minimally. They were likely gathered together and sorted into similar shapes to maintain integrity between layers and minimize irregularities in the structure. These monuments were often grouped in necropoles (of up to several hundred tombs) on the high points of the landscape (rocky ridges, cliffs) and are quite remote from potential habitation sites (up to 1 km away; CLEUZIQUET et al. 2011; SALVATORI 2001).

In these tombs, the dead were not buried but were deposited on the ground surface within the structure. According to the data available for 34 tombs for which the minimum number of individuals (MNI) has been determined, an average of 6.1 individuals per tomb has been calculated (MUNOZ 2014). Hafit-type cairns containing the remains of several dozens of individuals have been excavated in the Ja'alan region of Ra's al-Jinz RJ-6 and Ra's al-Hadd HD-10 (MUNOZ 2014; SALVATORI 2001; SANTINI 1992). In most cases, they contained between one and six individuals (and exceptionally up to 30), deposited successively over a time span that may have exceeded several centuries (e.g., WILLIAMS and GREGORICKA 2013a). The material objects commonly found in these tombs consisted of ornamental elements (e.g., beads, rings), copper objects, and Jemdet Nasr-style ceramic vessels imported from Mesopotamia (MERY and SCHNEIDER 1996).

A review of available data suggests the following pattern for the management of these tombs (*Fig. 2*):

1. The tomb was built and primary deposit of one or more individual(s) occurred.

2. Occasional reorganization resulting in the total or partial disarticulation of remains occurred as the result of pushing them against the walls of the chamber (e.g., CLEUZIQUO et al. 2011; SALVATORI 2001; SANTINI 1992) and/or covering them with a layer of stones (e.g., SALVATORI 2001; SANTINI 1992).

3. Primary deposit of a second set of one or more individual(s) occurred.

This cycle might have been repeated several times. It should be noted that this pattern is present even in Hafit-type cairns where a significant number of individuals had been deposited. For instance, in Cairn 1 from Ra's al-Jinz (RJ-6), where the remains of at least 29 individuals were recovered, excavation brought to light three different layers of bones separated by stones covering the whole surface of the chamber (SANTINI 1992). Larger bones (e.g., skulls, long bones) were mostly located close to the inner wall of the chamber, while the center returned only small bones and fragments. Importantly, while this pattern was prevalent in the Ja'alan, in other regions of the Oman Peninsula, steps two and three differ and individuals were not shifted from their primary placement (WILLIAMS 2012; WILLIAMS and GREGORICKA 2013a, 2013b, 2014). This may indicate regional variation in how these tombs were used for deposition of the dead.

### *Umm an-Nar Mortuary Practices*

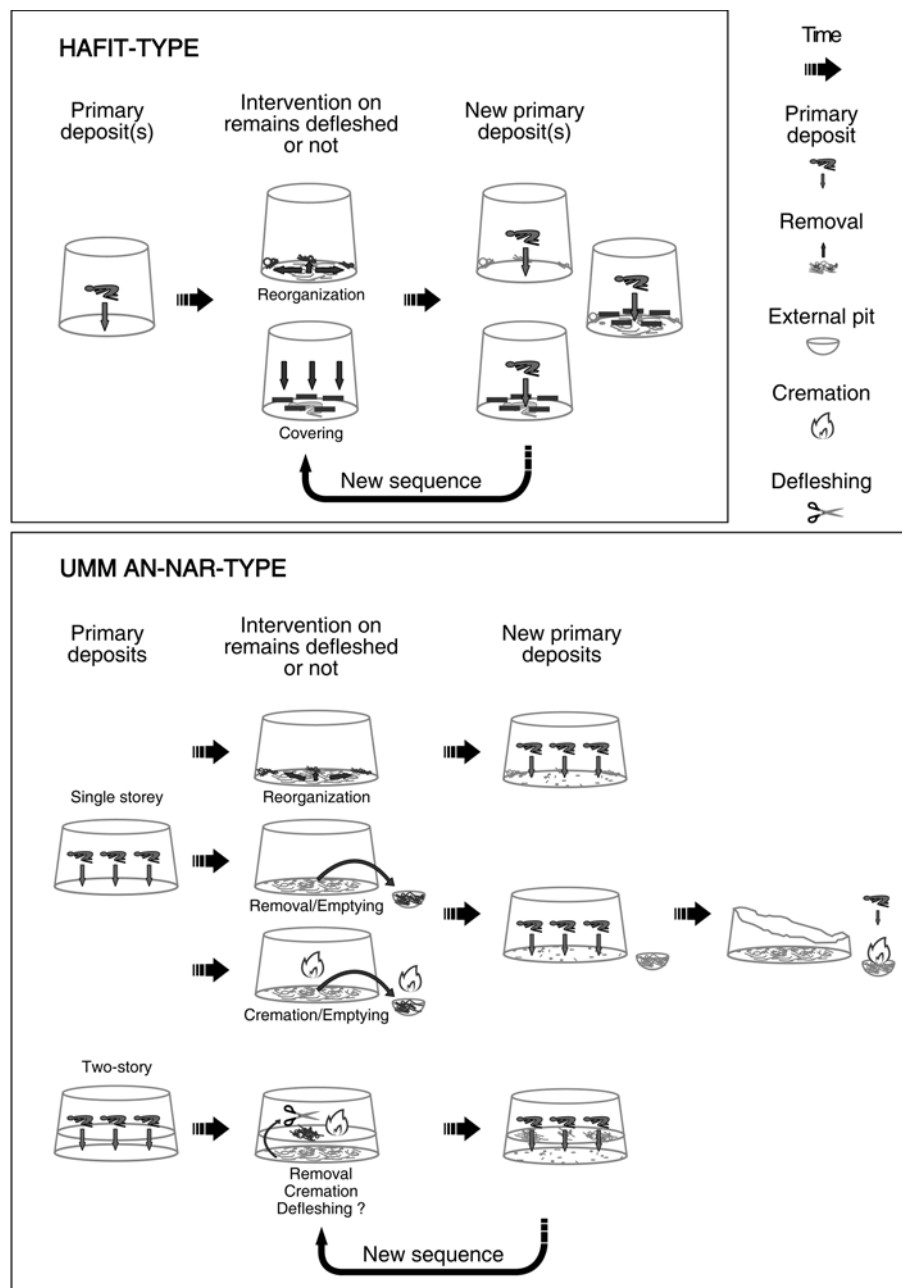
At about 2700 BC, tombs were reintegrated into habitation areas that were built only 1-100 m from villages. While tombs from the Umm an-Nar period were far more imposing in scale and dynamic in their internal design, they were located on low ground rather than on cliffs or other promontories. Umm an-Nar tombs were less numerous than the Hafit-type cairns, and while they were still built with stones and circular in shape, they became increasingly monumental over time (e.g., BÖHME 2012; GAGNAISON et al. 2004). Later tombs reached over 14 m in diameter and 3 m high (e.g., BLAU 2001; *Fig. 1*). Their internal spaces were usually compartmentalized by internal walls, which took on many idiosyncratic layouts (*Fig. 3*). In some of the excavated tombs, vertical partitions have also been found, revealing a two-story system or the presence of a shallow subfloor under the ground pavement (e.g., BLAU 2001; FRIFELT 1991; JASIM 2003; VOGT 1985). These tombs included one or two entrances composed of a removable stone door.

Toward the end of the third millennium BC, Umm an-Nar tombs were comprised of blocks carefully masoned from white limestone. Some had zoomorphic and/or anthropomorphic decorations carved into the lintel stone over the tomb entrance (e.g., BLAU 2001; BÖHME and AL-BAKRI 2012; FRIFELT 1975, 1991; JASIM 2003; *Fig. 1*). The limestone used for the façade of these late Umm an-Nar tombs was quarried from deposits located up to 10 km from the tombs (e.g., BÖHME 2012). Based on recent tomb reconstruction, it has been estimated that 16 to 24 people were needed for one year to construct one of these monuments, counting the time required for extraction, preparation, and transportation of the blocks and for assemblage and refacing (BÖHME 2012).

Umm an-Nar tombs usually contained a significant number of individuals (e.g., 121 individuals at Al Sufouh [BENTON 1996]; 362 at Tell Abraq [BAUSTIAN and MARTIN 2010]; more than 300 at Hili North Tomb A [CLEUZIQUO et al. 2011]; 431 and 438 at Shimal Unar 1 and 2, respectively [BLAU 2001]).

On average, 147 individuals were interred in Umm an-Nar tombs. This was calculated from 20 tombs for which the MNI (ranging from 6 to 438) was available (MUNOZ 2014). These remains were generally found fragmented and commingled and associated with numerous pottery and stone vessels, ornamental objects (e.g., beads, pendants, earrings, rings), and metal objects (BAUSTIAN and MARTIN 2010; CLEUZIQUO et al. 2011; FRIFELT 1991; GERNEZ and GIRAUD 2015; HAERINCK 1991; MUNOZ et al. 2012).

Management and maintenance of Umm an-Nar tombs appears to have been much more complex than for Hafit-type cairns (**Fig. 2**). Excavations at Ra's al-Jinz RJ-1 (MONCHABLON et al. 2003) found that its tomb had been emptied on three separate occasions and that the human remains and associated grave goods were deposited in adjacent pits (MUNOZ et al. 2012). Evidence of mortuary practices from RJ-1 has helped archaeologists reconstruct the Early Bronze Age procedures employed in the construction and use of these types of collective tombs, particularly the selective removal of partially or completely defleshed remains and their eventual cremation in pits located near the tomb.



**Figure 2** - Schematic representation of the management of collective Hafit and Umm an-Nar tombs. Credit: O. Munoz.

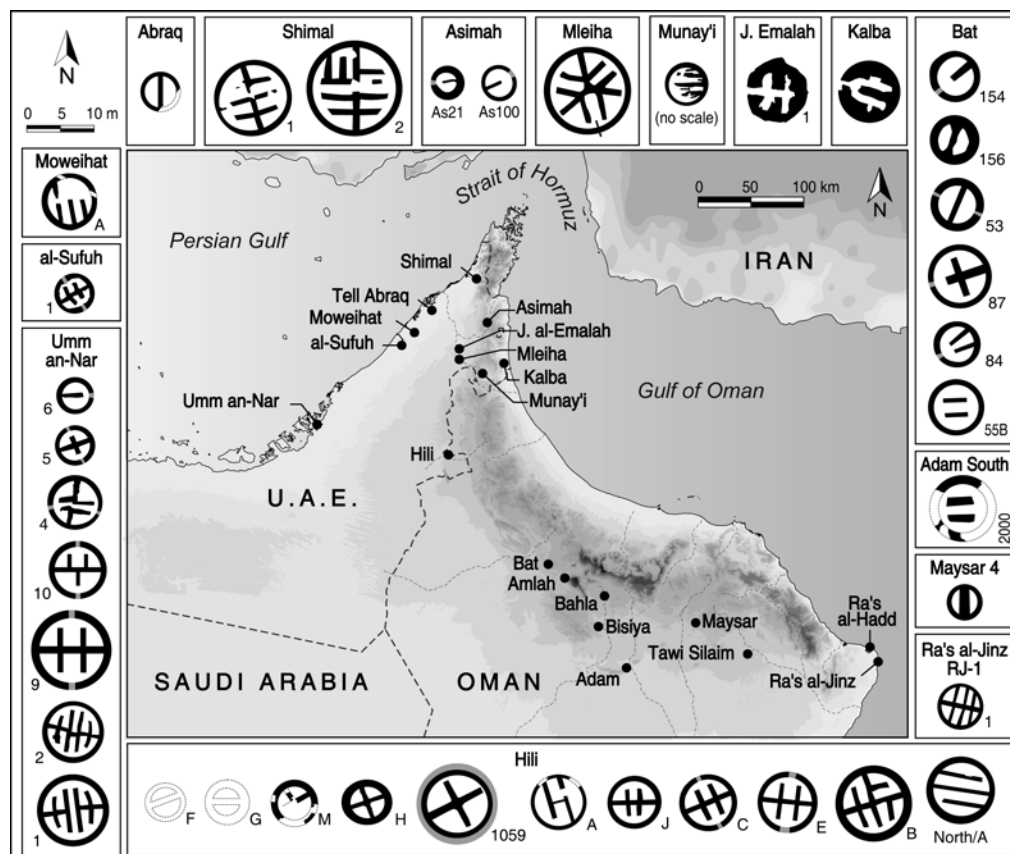


A review of the published data shows that similar operations were performed in other areas of southeastern Arabia. Indeed, pits filled with human remains and artifacts were not rare around Umm an-Nar graves (e.g., BENTON 1996; BLAU 2001; MUNOZ 2014; SCHMIDT 2012). Most of these pits were found fortuitously, and one may suppose that systematic surveys around the tombs would result in additional pit discoveries. In reported cases, pits were dug into the sediment or bedrock near the original tomb. Some masoned pits dating to the end of the third millennium BC were also reported and may have been a place for primary deposition of corpses (HAERINCK 1991; MÉRY et al. 2004), foreshadowing the following Wadi Suq period (ca. 2000-1300 BC) tombs (RIGHETTI 2012).

Additionally, the use of fire for the secondary treatment of human remains was common during this period. Burned human remains are reported, in greater or lesser proportions, at Tell Abraq (BAUSTIAN and MARTIN 2010), Al Sufouh (BENTON 1996), BAHLA (Munoz 2014), Hili Tombs A and N (BONDIOLI et al. 1998; GATTO et al. 2003), Maysar 4 (KUNTER 1981), Mleiha (BLAU 2001), Munayie (BENTON 2006), Mowihat (BLAU 1998), Ra's al-Hadd HD-7 (MUNOZ 2014), Ra's al-Jinz RJ-1 (MUNOZ et al. 2012), Ra's al-Jinz RJ-11 (MUNOZ 2014), and Shimal (BLAU 2001).

The most significant example of this comes from Tomb A at Hili North (BONDIOLI et al. 1998; CLEUZIOU et al. 2011). This exceptionally well-preserved tomb had two levels. The lower level was situated underground and was divided into four compartments. Primary deposits were made in the lower level, while the top level was apparently used for the cremation of remains already defleshed and disarticulated. Furthermore, cut marks have been observed on some bones at Hili, Bahla, and Tell Abraq, suggesting that defleshing of the remains was performed (BAUSTIAN and MARTIN 2010; BONDIOLI et al. 1998; MUNOZ 2014). Such processing may have represented a ritualized, liminal period positioned between tiered ceremonies associated with death and eventual interment in which a fundamental shift in personhood took place during which the deceased individual gradually was initiated into the collective of ancestors via body fragmentation and incorporation (ANDREWS and BELLO 2006; REBAY-SALISBURY et al. 2010; SAXE 1970; VAN GENNEP 1909).

This manipulation of the corpses or skeletal remains as part of secondary mortuary practices may be explained by the need to make space in the tomb (handling and removal) or even to accelerate the decomposition of its corpses (cremation, defleshing). Nevertheless, beyond the seemingly utilitarian nature of these practices, the recurrence of similar processing operations over a large territory suggests that they may have represented a codified component of a larger social system that was fully integrated in funerary rites that sought to assimilate individuals into a collective entity that linked them to the ancestors (HERTZ 1907; METCALF and HUNTINGTON 1991; SHANKS and TILLEY 1982) and at the same time reinforced broader social structures (STUTZ 2010). This act of removing the individual identity of corpses—achieved in part through the intentional commingling and fragmentation of the body as part of a series of long-term mortuary rituals—would probably have been an integral part of the mortuary program (REBAY-SALISBURY et al. 2010).



**Figure 3** - Location and schematic layout of several *Umm an-Nar*-type tombs showing their common features and variability. Credit: O. Munoz

## THE SOCIETIES BEHIND THE TOMBS

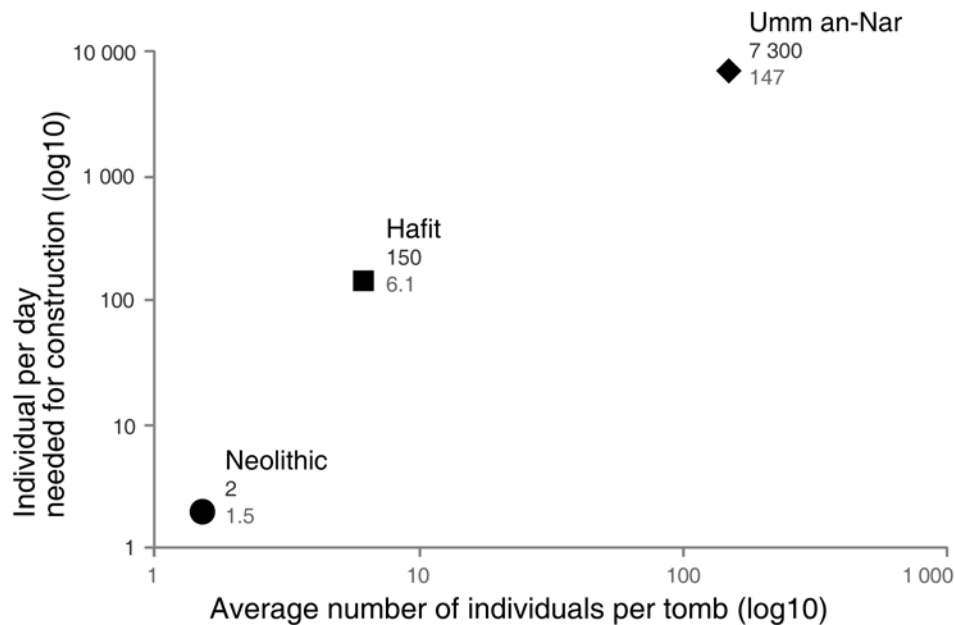
The evolution of funerary structures and material culture from the Late Neolithic to the end of the Early Bronze Age suggests increasing social complexity that culminated with the *Umm an-Nar* period. From an architectural point of view, the investment made for tomb construction increased significantly over time (Figure 2.4) and attests to growing social differentiation in the third millennium BC that included the emergence of specialized craftsmen, a development that is also apparent in other aspects of the material record. Indeed, artifacts recovered in the tombs and domestic structures testify to a diversification of the material used, new crafts, and an integration of communities in long-distance trade networks.

The consequential emergence of disparities in wealth and the formation of elites (e.g., ROUSE and WEEKS 2011) could have been a source of instability in the internal exchange economy on the Oman Peninsula, as reciprocal interrelations between regions with complementary resources were thought to be the base of the Early Bronze Age socioeconomic system (CLEUZIQU and TOSI 2007; TOSI 1975). In addition, the population would have been confronted with new social, economic, and political pressures resulting from long-distance intercultural encounters.

The construction of collective tombs, where individuals would have been ultimately merged into a community of ancestors, may have constituted an ideological response to the destabilizing character of



growing social inequalities among the living by promoting a group identity and principles of equality between individuals in death (although funerals may have been more sumptuous in terms of energy expenditure and associated artifacts for certain people deposited in the tombs).



**Figure 4** - Mean cost of the construction of a tomb, and average number of individuals per tomb according to the periods. Credit: O. Munoz

In this regard, the withdrawing from circulation of valuable goods by depositing them in the tombs or in their surroundings may have been seen as a way to avoid inheritance (GHAZAL and MUNOZ 2010; TESTART 2004) and therefore minimize accumulation of wealth by the living. According to the increasing number of individuals per tomb, particularly evident during the Umm an-Nar period (*Fig. 4*), it seems that grouping the dead—which had been previously limited to small, probably kin-related units (Neolithic and Hafit periods)—expanded into a larger degree of affiliation, that of the village community (CLEUZIIOU and MUNOZ 2007; MUNOZ 2014). Indeed, for Hafit-type cairns, except in rare cases reported in the Ja’alan, the number of interred individuals did not exceed six. Moreover, these tombs may have been in use for centuries and may even have been reused for thousands of years (e.g., WILLIAMS and GREGORICKA 2013a). Thus, individuals recovered in these graves may not always actually belong to the Hafit period. The “collective” nature of these tombs seems to be associated more with the intention that presided over their construction than with the reality of the deposits that were made, which contrasts with the Umm an-Nar graves. Funerary practices would have thus acted to compensate for the social dynamic among the living through the acceptance of a higher community principle (that may have been based on tribalism; see TOSI 1989) in death.

## CONCLUSION

Field observations and analyses of human skeletal remains reveal how Early Bronze Age collective tombs were managed. The observed operations were much more complex during the Umm an-Nar period. These included removal of human remains and their deposition in adjacent pits, cremation episodes, and, less frequently, active defleshing. Although these material traces are probably evidence of the ultimate state of a complex procedure in the tomb itself, the widespread prevalence of such a system suggests that these practices were codified and were informed by a shared ideology, thus attesting to a strong cultural homogeneity across a large geographic area over the United Arab Emirates and Oman. Umm an-Nar tombs can be regarded as a powerful way to strengthen social cohesion by assimilating individuals to the community of ancestors, a higher entity within a society in which inequalities were increasingly prevalent.

## ACKNOWLEDGMENTS

The author would like to thank Kimberly D. Williams, Lesley A. Gregoricka, and Gwen Robbins Schug, who organized the session at the 2014 Society for American Archaeology symposium, for inviting me to participate. This chapter would not have been possible without the support of the Ministry of Heritage and Culture of the Sultanate of Oman, the Labex *les passés dans le présent* (ANR-11-LABX-0026-01), the project NeoArabia (ANR-16-CE03-0007-01/NEOARABIA) founded by the French National Research Agency, and the trust and legacies of Professor Serge Cleuziou and Professor Maurizio Tosi, pioneering researchers of Oman's past and former directors of the Joint Hadd Project. The author is grateful to Guillaume Gernez and Jessica Giraud, who shared the drawing of Tomb 2000 from Adam South. Special thanks are due to Royal O. Ghazal for his assistance in editing this chapter and for his comments and our discussions and to the reviewers for their comments, which improved this chapter.

## REFERENCES

- ANDREWS, P., and S. BELLO. 2006. Pattern in Human Burial Practice. In *Social Archaeology of Funerary Remains*, edited by R. Gowland and C. J. Knusel, pp. 14–29. Oxbow Books, Oxford.
- AZZARA, V. M. 2009. Domestic Architecture at the Early Bronze Age Sites HD-6 and RJ-2 (Ja'alan, Sultanate of Oman). *Proceedings of the Seminars for Arabian Studies* 39:1–16.
- AZZARA, V. M. 2012. The Organization of Food Processing at HD-6 (Sultanate of Oman). In *Proceedings of the 7th International Congress on the Archaeology of the Ancient Near East, 12–16 April 2010*, the British Museum and UCL, London, edited by R. Matthews and J. Curtis, pp. 251–268. Harrassowitz Verlag, Wiesbaden.
- BAUSTIAN, K., and D. L. MARTIN. 2010. Patterns of Mortality in a Bronze Age Tomb from Tell Abraç. In *Death and Burial in Arabia and Beyond: Multidisciplinary Perspectives*, edited by L. Weeks, pp. 55–60. BAR International Series 2107. Archaeopress, Oxford.
- BENTON, J. N. 1996. Excavations at al-Sufouh: A Third Millennium Site in the Emirate of Dubai. Brepols, Louvain.
- BENTON, J. N. 2006. Burial Practices of the Third Millennium BC in the Oman Peninsula: A Reconsideration. PhD dissertation, University of Sydney, Australia.
- BERGER, J.-F., V. CHARPENTIER, R. CRASSARD, C. MARTIN, G. DAVTIAN, and J. A. LOPEZ-SAEZ. 2013. The Dynamics of Mangroves Ecosystems, Changes in Sea Level and the Strategies of Neolithic Settlements along the Coast of Oman (6000–3000 cal. BC). *Journal of Archaeological Science* 40(7):3087–3104.

- BIAGI, P. 1999. Excavations at the Shell-Midden of RH6 1986–1988 (Muscat, Sultanate of Oman). *Al-Rafidan* XX:57–84.
- BIAGI, P. 2004. Surveys along the Oman Coast: A Review of the Prehistoric Sites Discovered between Dibab and Qalhat. *Adumatu* 10:29–50.
- BIAGI, P., and R. NISBET. 2006. The Prehistoric Fisher-Gatherers of the Western Coast of the Arabian Sea: A Case of Seasonal Sedentarization? *World Archaeology* 38(2):220–258.
- BIBBY, G. 1965. Arabiens arkaeologi. (Arabian gulf archaeology). *Kulm* 1964:132–152.
- BLAU, S. 1998. Studies of Human Skeletal Remains in the United Arab Emirates. Where Are We Now? *Proceedings of the Seminar for Arabian Studies* 28:7–12.
- BLAU, S. 2001. Fragmentary Endings: A Discussion of 3rd Millennium BC Burial Practices in the Oman Peninsula. *Antiquity* 75(289):557–570.
- BÖHME, M. 2012. The Recurring Monument: Records on Hafit and Umm an-Nar Period Tomb Architecture in the Oman Peninsula. In *As Time Goes By? Monumentality, Landscapes and the Temporal Perspective* Vol. 2, edited by M. Furholt, M. Hinz and D. Mischka, pp. 85–93. Verlag Dr. Rudolf Habelt GmbH, Bonn.
- BÖHME, M., and S. S. N. AL BAKRI. 2012. An Umm an-Nar Culture Stone Bas-Relief from Al-Qutainah, Sultanate of Oman. *Arabian Archaeology and Epigraphy* 23(2):156–164.
- BONDIOLI, L., A. COPPA, and R. MACCHIARELLI. 1998. From the Coast to Oasis in Prehistoric Arabia: What the Human Osteodental Remains Tell Us About the Transition from a Foraging to the Exchange Economy? Evidence from Ra's al-Hamra (Oman) and Hili North (U.A.E.). In *The Prehistory of Arabia and Oceania: Proceedings of the XIIIth Congress of the IUPPS, Forli, 8–14 Sept. 1996*, edited by G. Afanas'ev, S. Cleuziou, J. Lukacs, and M. Tosi, pp. 229–234. ABACO, Forli.
- BORTOLINI, E. 2014. An Evolutionary and Quantitative Analysis of Construction Variation in Prehistoric Monumental Burials of Eastern Arabia. PhD dissertation, Institute of Archaeology, University College London.
- BORTOLINI, E., and O. MUNOZ. 2015. Life and Death in Prehistoric Oman: Insights from Late Neolithic and Early Bronze Age Funerary Practices (4th–3rd Mill. BC). In *Proceedings of the International Symposium The Archaeological Heritage of Oman held at UNESCO, Paris, September 7, 2012*, pp. 61–80. Ministry of Heritage and Culture, Muscat.
- CABLE, C. M., and C. THORNTON. 2012. Monumentality and the Third-Millennium “Towers” of the Oman Peninsula. In *Connections and Complexity: New Approaches to the Archaeology of South and Central Asia*, edited by S. Abraham, P. Gullapalli, T. Raczek, and U. Rizvi, pp. 375–399. Left Coast Press, Walnut Creek, California.
- CAVULLI, F. 2004. L'insediamento di KHB-1 (Ra's al-Khabbah, Sultanato dell'Oman): Lo scavo I resti strutturali e i confronti etnografici. *Ocnus, Quaderni della Scuola di Specializzazione in Archeologia* 12:37–48.
- CHARPENTIER, V., P. MARQUIS, and E. PELLE. 2003. La nécropole et les derniers horizons Ve millénaire du site de Gorbat al-Mahar (Suwayh, SWY-1, Sultanat d'Oman): Premiers résultats. *Proceedings of the Seminar for Arabian Studies* 33(33):11–19.
- CLEUZIOU, S. 1989. Chronology of Protohistoric Oman as Seen from Hili. In *Oman Studies*, edited by P. Costa and M. Tosi, pp. 47–78. Serie Orientale Roma LXIII. Istituto italiano per il Medio ed Estremo Oriente, Rome.
- CLEUZIOU, S. 1992. The Oman Peninsula and the Indus Civilization: A Reassessment. *Man and Environment* 17(2):93–103.
- CLEUZIOU, S. 2002a. The Early Bronze Age of the Oman Peninsula from Chronology to the Dialectics of Tribe and State Formation. In *Essays on the Late Prehistory of the Arabian Peninsula*, edited by S. Cleuziou, M. Tosi, and J. Zarins, pp. 191–236. Serie Orientale Roma XCIII. Istituto italiano per il Medio ed Estremo Oriente, Rome.
- CLEUZIOU, S. 2002b. Présence et mise en scène des morts à l'usage des vivants dans les communautés préhistoriques : L'exemple de la péninsule d'Oman à l'Age du Bronze ancien. In *Primi Popoli d'Europa: Proposte e riflessioni sulle origini della civiltà nell'Europa mediterranea*, edited by M. Molinos and A. Zifferero, pp. 17–31.

All'Insegna del Giglio, Firenze.

- CLEUZIOU, S. 2003. Early Bronze Age Trade in the Gulf and the Arabian Sea: The Society behind the Boats. In *Archaeology of the United Arab Emirates: Proceedings of the First International Conference on the Archaeology of the U.A.E.*, edited by D. T. Potts, H. Al Nabooda, and P. Hellyer, pp. 133–148. Trident Press, London.
- CLEUZIOU, S. 2007. Evolution toward Complexity in a Coastal Desert Environment: The Early Bronze Age in the Ja'alan, Sultanate of Oman. In *The Model-Based Archaeology of Socionatural Systems*, edited by T. A. Kohler and S. van der Leeuw, pp. 213–231. SAR Press, Santa Fe.
- CLEUZIOU, S., and L. COSTANTINI. 1980. Premiers éléments sur l'agriculture protohistorique de l'Arabie orientale. *Paléorient* 6(1):245–251.
- CLEUZIOU, S., and O. MUNOZ. 2007. Les morts en société : Une interprétation des sépultures collectives d'Oman à l'Age du Bronze. In *Pratiques funéraires et sociétés : Nouvelles approches en archéologie et en anthropologie sociale*, edited by L. Baray, P. Brun, and A. Testart, pp. 293–317. Presses Universitaires de Dijon, Dijon.
- CLEUZIOU, S., and M. TOSI. 2000. Ra's al-Jinz and the Prehistoric Coastal Cultures of the Ja'alan. *Journal of Oman Studies* 11:19–74.
- CLEUZIOU, S., and M. TOSI (editors). 2007. In the Shadow of the Ancestors: The Prehistoric Foundations of the Early Arabian Civilization in Oman. Ministry of Heritage and Culture, Muscat.
- CLEUZIOU, S., S. MERY, and B. VOGT (editors). 2011. Protohistoire de l'oasis d'Al-Aïn, Travaux de la mission archéologique française à Abou Dhabi (Émirats Arabes Unis): 1. Les sépultures de l'âge du Bronze. BAR International Series 2227. Archaeopress, Oxford.
- DAVID, H. 2002. Soft Stone Vessels from Umm an-Nar tombs at Hili (UAE): A Comparison. *Proceedings of the Seminar for Arabian Studies* 32:175–185.
- DAVID, H. 2011. Les vases en chlorite. In Protohistoire de l'oasis d'Al-Aïn, Travaux de la Mission archéologique française à Abou Dhabi (Émirats Arabes Unis): 1. Les sépultures de l'âge du Bronze, edited by Serge Cleuziou, Sophie Mery and Burkhard Vogt, pp. 184–201. BAR International Series 2227. Archaeopress, Oxford.
- DURANTE, S., and M. TOSI. 1977. The Aceramic Shell Middens of Ra's al-Hamra: A Preliminary Note. *Journal of Oman Studies* 3(2):137–172.
- FRIFELT, K. 1975. A Possible Link between Jemdet Nasr and Umm an-Nar Graves of Oman. *Journal of Oman Studies* 1:57–80.
- FRIFELT, K. 1991 *The Island of Umm an-Nar: 1. Third Millennium Graves*. Jutland Archaeological Society Publications XXVI, Aarhus.
- GAGNAISON, C., P. BARRIER, S. MÉRY, and W. Y. AL TIKRITI. 2004. Extractions de calcaires éocènes à l'Age du Bronze et architecture funéraire à Hili (Emirat d'Abou Dhabi). *Revue d'Archéométrie* 28 : 97–108.
- GATTO, E., G. BASSET, S. MÉRY, and K. MCSWEENEY. 2003. Etude paléodémographique et utilisation du feu à Hili N, une sépulture collective en fosse de la fin de l'âge du bronze ancien aux Emirats Arabes Unis. *Bulletins et Mémoires de la Société d'Anthropologie de Paris, n.s.* 15(1–2):25–47.
- GAULTIER, M., H. GUY, O. MUNOZ, M. TOSI, and D. USAI. 2005. Settlement Structures and Cemetery at Wadi Shab-GAS1, Sultanate of Oman: Report on the 2002 and 2003 Field Seasons. *Arabian Archaeology and Epigraphy* 16(1):1–20.
- GERNEZ, G., and J. GIRAUD. 2015. Protohistoric Graveyards in Adam (Oman). Preliminary Report on the 2013 and 2014 Seasons of the French Archaeological Mission to Adam. *Proceedings of the Seminar for Arabian Studies* 45:107–122.
- GHAZAL, R. O., and O. MUNOZ. 2010. The Social Death of Things: An Archaeological Inquiry into the Implications of Foreign Exchanges and the Role of Ritual De-Commoditization in Ancient Magan. Paper presented at the American Anthropological Association Conference, November 18, New Orleans.
- HAERINCK, E. 1991. The Rectangular Umm an-Nar Period Grave at Mowaihat (Emirate of Ajman, United Arab Emirates). *Gentse Bijdragen, tot de Kunstgeschiedenis en Oudheidkunde* 29:1–30.

- HERTZ, R. 1907. Contribution a une étude sur la représentation collective de la mort. *Année Sociologique* 10:48–137.
- JASIM, S. A. 2003. Third Millennium Culture in the Emirate of Sharjah. In *Archaeology of the United Arab Emirates: Proceeding of the First International Conference on the Archaeology of the UAE*, edited by D. T. Potts, H. al Naboodah, and P. Hellyer, 86–99. Trident Press, London.
- KUNTER, M. 1981. Bronze und eisenzeitliche Skelettfunde aus Oman, Bemerkungen zur Bevölkerungsgeschichte Ostarabiens. *Homo Göttingen* 32:197–210.
- KUTTERER, A. U. 2010. Remarks on Neolithic Burial Customs in South-East Arabia. In *Death and Burial in Arabia and Beyond: Multidisciplinary Perspectives*, edited by Lloyd Weeks, pp. 1–10. BAR International Series 2107. Archaeopress, Oxford.
- MARCUCCI, L. G., F. GENCHI, E. BADEL, and M. TOSI. 2011. Recent Investigations at the Prehistoric Site RH-5 (Ra's al-Hamra, Muscat, Sultanate of Oman). *Proceedings of the Seminar for Arabian Studies* 41:201–222.
- MARCUCCI, L. G., E. BADEL, F. GENCHI, O. MUNOZ, A. TODERO, and M. TOSI. 2014. New Investigations at the Prehistoric Shell Midden of Ra's al-Hamra 6 (Sultanate of Oman): Results of the 2012 and 2013 Excavation Seasons. *Proceedings of the Seminar for Arabian Studies* 44:235–256.
- MÉRY, S. 1991. Emergence et développement de la production céramique dans la péninsule d'Oman à l'Age du Bronze, en relation avec l'Asie moyenne. PhD dissertation, Université de Paris 1 Panthéon-Sorbonne.
- MÉRY, S. 1998. Ceramics and Patterns of Exchange across the Arabian Sea and the Persian Gulf in the Early Bronze Age. In *The Prehistory of Arabia and Oceania: Proceedings of the XIIIth Congress of the IUPPS, Forli, 8–14 Sept. 1996*, edited by G. Afanas'ev, S. Cleuziou, J. Lukacs, and M. Tosi, pp. 169–179. ABACO, Forli.
- MÉRY, S. 2000. Les céramiques d'Oman et l'Asie Moyenne: Une archéologie des échanges à l'âge du Bronze. Monographie du CRA 23. CNRS, Paris.
- MÉRY, S., and G. SCHNEIDER. 1996. Mesopotamian Pottery Wares in Arabia from the 5th to the 2d Millennium BC: A Contribution of Archaeometry to the Economic History. *Proceedings of the Seminar for Arabian Studies* 26:79–96.
- MÉRY, S., K. MCSWEENEY, W.Y. AL TIKRITI, and S. VAN DER LEEUW. 2004. New Approaches to a Collective Grave from the Umm An-Nar Period at Hili (UAE). *Paléorient* 30(1):163–178.
- METCALF, P., and R. HUNTINGTON. 1991. *Celebrations of Death: The Anthropology of Mortuary Ritual*. Cambridge University Press, Cambridge.
- MONCHABLON, C., R. CRASSARD, O. MUNOZ, H. GUY, G. BRULEY-CHABOT, and S. CLEUZIOU. 2003. Excavations at Ra's al-Jinz RJ-1: Stratigraphy without Tells. *Proceedings of the Seminar for Arabian Studies* 33:31–47.
- MUNOZ, O. 2014. Pratiques funéraires et paramètres biologiques dans la péninsule d'Oman du Néolithique à la fin de l'âge du Bronze (5–3e millénaires avant notre ère). PhD dissertation, Université de Paris 1 Panthéon-Sorbonne and Universita di Roma La Sapienza.
- MUNOZ, O. 2017. Transition to Agriculture in South-Eastern Arabia: Insights from Oral Conditions. *American Journal of Physical Anthropology* 164(33):702–719.
- MUNOZ, O., R. O. GHAZAL, and H. GUY. 2012 Use of Ossuary Pits during the Umm an Nar Period: New Insights on the Complexity of Burial Practices from the Site of Ra's al-Jinz (RJ-1), Oman. In *Aux marges de l'archéologie: Hommage à Serge Cleuziou*, edited by Jessica Giraud and Guillaume Gernez, pp. 451–467. Travaux de la maison Rene-Ginouves, De Boccard, Paris.
- MUNOZ, O., S. SCARUFFI, and F. CAVULLI. 2010. The Burials of the Middle Holocene Settlement of KHB-1 (Ra's al-Khabbah, Sultanate of Oman). In *Death and Burial in Arabia and Beyond: Multidisciplinary Perspectives*, edited by L. Weeks, pp. 1–10. BAR International Series 2107. Archaeopress, Oxford.
- MUNOZ, O., A. ZAZZO, E. BORTOLINI, G. Seguin, J.-F. SALIÈGE, and S. CLEUZIOU. 2008. Reconstructing the Diet of the Ancient Fishermen of Ra's al-Hadd and Ra's al-Jinz (Sultanate of Oman) Using Radiocarbon Dates. Poster presented at the conference « Les Deserts d'Afrique et d'Arabie : Environnement, climat et impact sur les populations », colloque de l'Académie des sciences, Institut de France, Paris.



- PARKER PEARSON, M. 2009. *The Archaeology of Death and Burial*. The History Press, Stroud.
- PHILLIPS, C. S. 2002. Prehistoric Middens and a Cemetery from the Southern Arabian Gulf. In *Essays on the Late Prehistory of the Arabian Peninsula*, edited by S. Cleuziou, M. Tosi, and J. Zarins, pp. 169–186. Serie Orientale Roma XCIII. Istituto italiano per il Medio ed Estremo Oriente, Rome.
- POTTS, D. T. 1993. Rethinking Some Aspects of Trade in the Arabian Gulf. *World Archaeology* 24(3):423–440.
- POTTS, D. T. 2012. The Hafit-Umm an-Nar Transition: Evidence from Falaj al-Qaba'il and Jabal al-Emalah. In *Aux marges de l'archéologie: Hommage à Serge Cleuziou*, edited by J. Giraud and G. Gernez, pp. 371–377. Travaux de la maison Rene-Ginouves, De Boccard, Paris.
- REBAY-SALISBURY, K., M. L. STIG SORENSEN, and J. HUGHES. 2010. *Body Parts and Bodies Whole: Changing Relations and Meanings*. Oxbow Books, Oxford.
- RIGHETTI, S. 2012. Analyse des pratiques funéraires à l'âge du Bronze moyen et récent dans la péninsule omanaise: Une fenêtre sur la société. In *Aux marges de l'archéologie : Hommage à Serge Cleuziou*, edited by Jessica Giraud and Guillaume Gernez, pp. 379–385. Travaux de la maison Rene-Ginouves, De Boccard, Paris.
- ROUSE, L. M., and L. WEEKS. 2011. Specialization and Social Inequality in Bronze Age SE Arabia: Analyzing the Development of Production Strategies and Economic Networks using Agent-Based Modeling. *Journal of Archaeological Science* 38(7):1583–1590.
- SALVATORI, S. 2001. Excavations at the Funerary Structures HD 10–3.1, 4.1, 4.2, and 2.1 at Ra's al-Hadd (Sultanate of Oman). *Rivista di archeologia* Anno XXV:67–83.
- SALVATORI, S. 2007 The Prehistoric Graveyard of Ra's al-Hamra 5, Muscat, Sultanate of Oman. *Journal of Oman Studies* 14:5–202.
- SANTINI, G. 1987. Site RH-10 at Qurum and a Preliminary Analysis of Its Cemetery: An Essay in Stratigraphic Discontinuity. *Proceedings of the Seminar for Arabian Studies* 17:179–198.
- SANTINI, G. 1992. Analisi dei caratteri dominanti per la definizione dei rituali nelle necropoli preistoriche e protostoriche della Penisola di Oman. PhD dissertation, Istituto Universitario Orientale, Università di Napoli.
- SAXE, A. 1970. Social Dimensions of Mortuary Practices. PhD dissertation, University of Michigan, Ann Arbor.
- SCHMIDT, C. 2012. *German Expedition to Bat & Al-Ayn, report 2012*. University of Tübingen, IANES / Ministry of Heritage and Culture, Sultanate of Oman.
- SHANKS, M., and C. TILLEY. 1982. Ideology, Symbolic Power and Ritual Communication: A Reinterpretation of Neolithic Mortuary Practices. In *Symbolic and Structural Archaeology*, edited by I. Hodder, pp. 129–154. Cambridge University Press, Cambridge.
- STUTZ, L. N. 2010. The Way We Bury Our Dead. *Documenta Praehistorica* XXXVII:33–42.
- TENGBERG, M. 2012. Beginnings and Early History of Date Palm Garden Cultivation in the Middle East. *Journal of Arid Environments* 86:139–147.
- TESTART, A. 2004. Deux politiques funéraires, depot ou distribution. In *Archéologie des pratiques funéraires. Approches critiques. Actes de la table ronde des 7–9 juin 2001 (Glux-en-Glenne—F.58)*, edited by L. Baray, pp. 303–316. Centre archéologique européen, Glux-en-Glenne.
- TOSI, M. 1975. Notes on the Distribution and Exploitation of Natural Resources in Ancient Oman. *Journal of Oman Studies* 1:187–206.
- TOSI, M. 1989. Protohistoric Archaeology in Oman: The First Thirty Years (1956–1985). In *Oman Studies*, edited by P. Costa and M. Tosi, pp. 135–161. Serie Orientale Roma LXIII. Istituto italiano per il Medio ed Estremo Oriente, Rome.
- VAN GENNEP, A. 1909. *Les rites de passage*. University of Chicago Press, Chicago.
- VOGT, B. 1985. Zur Chronologie und Entwicklung der Gräber des späten 4.-2. Jtsd.v.Chr. auf der Halbinsel Oman: Zusammenfassung, Analyse und Würdigung publizierter wie auch unveröffentlichter Grabungsergebnisse. PhD dissertation, Georg-August-Universität, Göttingen.



Munoz O. (2019) « Promoting group identity and equality by merging the Dead: increasing complexity in mortuary practices from Late Neolithic to Early Bronze Age in the Oman Peninsula and its social implications », In: Williams K.D. & Gregoricka L.A. (Eds.), *Mortuary and bioarchaeological perspectives on Bronze Age Arabia*, Gainesville, University of Florida Press, pp. 21-40.

- WEEKS, L. 2003. *Early Metallurgy of the Persian Gulf: Technology, Trade and the Bronze Age World*. Brill Academic Publisher, Boston.
- WEISGERBER, G. 1980. “. . . und Kupfer in Oman”: Das Oman-Projekt des Deutschen Bergbau-Museums. *Der Anschnitt* 32(2-3):62-110.
- WILLIAMS, K. D. 2012. SOBO 2011-2012: A Report for the Ministry of Heritage and Culture. Report to Ministry of Heritage and Culture, Sultanate of Oman.
- WILLIAMS, K. D. and L. A. GREGORICKA. 2013a. Social, Spatial, and Bioarchaeological Histories of Ancient Oman: Mortuary Archaeology of Dhank, Oman 2009-2013. *Arabian Archaeology and Epigraphy* 24(2):134-150.
- WILLIAMS, K. D. and L. A. GREGORICKA. 2013b. SOBO 2012-2013: A Report for the Ministry of Heritage and Culture. Report to Ministry of Heritage and Culture, Sultanate of Oman.
- WILLIAMS, K. D. and L. A. GREGORICKA. 2014. Report to the Ministry of Heritage and Culture: SOBO 2013-2014 Season in Dhank, Oman. Report to Ministry of Heritage and Culture, Sultanate of Oman.
- YULE, P., and G. WEISGERBER. 1998. Prehistoric Tower Tombs at Shir/Jaylah, Sultanate of Oman. *Beiträge zur allgemeinen und vergleichenden Archäologie* 18:183-241.
- ZAZZO, A., O. MUNOZ, and J.-F. SALIÈGE. 2014. Diet and Mobility in a Late Neolithic Population of Coastal Oman Inferred from Radiocarbon Dating and Stable Isotope Analysis. *American Journal of Physical Anthropology* 153(3):353-364.